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Original Research Article

A community based cross sectional study on menstrual hygiene among 18-45 years age women in a rural area of Delhi

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Abstract

Context: Menstruation is the process that needs to be managed socially. If it is not managed properly it may interrupt the social expectations.
Aims: To study knowledge, attitude, and practices regarding menstrual hygiene among women of 18-45 years age residing in a rural area.
Settings and Design: A community based cross-sectional study was conducted among 350 women of 18-45 years age residing in rural area of Delhi, Barwala.
Methods and Material: Study was conducted by house-to-house visit using systematic random sampling. A pre-tested semi- structured questionnaire containing seven questions regarding knowledge and eight questions each pertaining to attitude and practices regarding menstrual hygiene was used. A five point Likert scale was used to assess responses regarding attitude questions.
Statistical analysis used: Data was collected, compiled, processed and analysed by SPSS software version 17.
Results: Largest proportion of women belonged to the age group of 21-30 years. Primary informant regarding menstruation was mother for 46.6% women. More than two-thirds of women were scared at time of their first menstruation. Only 53.7% women were using sanitary pads. All personal hygiene practices were found to be satisfactory in almost 90% of women. Statistically significant association was seen between knowledge and socio-economic status and literacy status of the study participants. Similarly significant association was also seen between women's socio-economic status and their attitude and practices.
Conclusions: Women need to be educated about MHM, significance of menstruation and use of satisfactory absorbent material so as to enable them to lead a healthy reproductive life.
Keywords: Menstrual hygiene, Knowledge, Attitude, Practice.

1. Introduction

Menstruation is the cyclical shedding of the inner lining of the uterus, the endometrium, under the control of hormones of the hypothalamopituitary axis. [1]

Menstrual Hygiene Management (MHM) or menstrual hygiene is defined as articulation, awareness, information and confidence to manage menstruation with safety and dignity using safe hygienic materials together with adequate water and agents and spaces for washing and bathing with soap and disposal of used menstrual absorbents with privacy and dignity.[2]

The importance of this phenomenon is not only physiological; social and religious significance is attached to it as well. The myths and misconceptions regarding menstruation are widespread.

Numerous MHM studies have been conducted across the globe, examining prevalence of social, educational and health problems faced by adolescent girls with poor MHM but there is a paucity of similar studies in reproductive age group women, therefore this study was conducted to assess knowledge, attitude, and practices

regarding menstrual hygiene among women of 18-45 years age residing in a rural area.

2. Subjects and Methods:

2.1 Study Design

Community based cross- sectional study

2.2 Study Area

Barwala, New Delhi

2.3 Study Period

Jan, 2016- December, 2016

2.4 Study Population

Reproductive age group women (18-45 years)

2.5 Sample size

At 95% confidence level and taking the prevalence of satisfactory menstrual hygiene as 33.3% [3,4], with a relative error of 15 %, the sample size came out to be 348 using the formula,

$$n = Z\alpha^2 \, p \, q \, / \, l^2$$

Therefore a total of 350 subjects were included for study.

2.6 Methodology

Study was conducted by house-to-house visit using systematic random sampling. The investigator first explained nature and purpose of the study and then interviewed the eligible candidates who agreed to participate in the study after getting written informed consent. After recording the preliminary data, the candidate was subjected to the interview through the semi structured questionnaire. The questionnaire was administered in local language, Hindi for their easy understanding. It had seven questions regarding knowledge and eight questions each about attitude and practices regarding menstrual hygiene respectively. Practices satisfactory or unsatisfactory were based on UNICEF guidelines [5].

Association of socio-demographic determinants with knowledge, attitude and practices regarding menstrual hygiene: Seven questions were asked pertaining to knowledge regarding menstrual hygiene. For each correct response they were awarded a score of 1. Hence the total possible range of score was 0-7. A subject scoring 4 or more was considered as having good knowledge and those with a score of <4 were considered having poor knowledge. Similarly eight questions were asked regarding attitude and a five point Likert scale was used to elicit the responses. Hence the total possible range of score was 8-40. A subject scoring 24 and above was considered to have a positive attitude while those with below 24 as one with negative attitude. For practices regarding menstrual hygiene eight questions were asked and each correct response was awarded a score of 1 and the possible range of score was 0-8, but more than one-third population had satisfactory practices regarding seven out of the eight questions asked, hence, association was found between frequency of change of soakage material (the remaining question) and socio-demographic determinants.

2.7 Statistical Analysis

Data was collected, compiled, processed and analysed by SPSS software version 17. Quantitative data was expressed by mean and standard deviation, qualitative data was expressed by percentages and difference between the proportions was observed by chi square test or Fisher's exact test. Confidence interval of 95% was used and $p < 0.05$ was considered significant.

2.8 Ethical considerations:

1. The objectives and procedure of the study were explained to all women.
2. Informed written consent was taken from all women willing to participate in the study.
3. The option to opt out of the study was kept open without any clause.
4. Complete confidentiality regarding patient information was maintained through all stages of the study.

3. Results

3.1 Demographic profile

A total of 350 women of 18-45 years age participated in the study. The largest proportion of women belonged to the age group of 21-30 years i.e. 57.0% with mean age being 27.20 ± 0.434 years. Highest proportion of women belonged to Class III (37.7%) of Modified B.G. Prasad Scale of socio-economic status.[6,7] Most of the study participants belonged to nuclear families and Hindu religion. Only 43.2% of women had secondary or higher education. The proportion of illiterate subjects was 27.4%. Majority of the respondent's mothers were illiterate. More than two-thirds (84.3%) women were married at the time of interview. Out of the 350 women, 75.1% women were homemakers. (Table 1)

3.2 Knowledge regarding menstruation

Majority of the women (46.6%) acquired knowledge from their mother. More than two-thirds (73.4%) of women were scared at the time of their first menstruation, followed by those who felt usual at their menarche i.e. 23.7%. Almost all (98.8%) women knew that menstruation is a physiological process. It was seen that 41.7% women knew uterus is the source of menstrual blood, while 12.0% believed urinary bladder as the source of menstrual blood (Table 2).

3.3 Attitude regarding menstruation

Majority (88.3%) of the study participants strongly disagreed that women can enter temple/ pray during menstruation. Most of the women (85.4%) agreed that

women can cook/ enter kitchen and take bath during menses (97.2%). More than half of the women (64.3%) agreed that women can wash hair during menses. Majority of the participants (93.1%) agreed that women can sleep on the same bed during her menses. Most of the women disagreed that women can touch pickle (75.4%) or have sexual intercourse (83.7%) during her menses. More than half of the women (52.8%) subjects agreed that women need not avoid any foods. (Table 3)

3.4 Practices regarding menstruation

Only 53.7% women were using sanitary pads, 30.9% women used only cloth while 15.4% used both napkins and cloth. Only 69.1% women were using satisfactory soakage material (according to UNICEF guidelines)[5]. Soakage material was stored satisfactorily by 99.7% women. Frequency of changing of soakage material was satisfactory in only 11.7%. Disposal of soakage material was satisfactory in 100% subjects. All personal hygiene practices were found to be satisfactory in almost 90% of women, the highest being privacy for changing of soakage material (100%), followed by bathing during menstruation (98.6%). Satisfactory washing of genitals was seen in 89.1% women and reuse of soakage material was satisfactory in 87.7% women (Table 4).

3.4 Association of socio-demographic determinants with knowledge, attitude and practices regarding menstrual hygiene

Statistically significant association was seen between knowledge and socio-economic status and literacy status of the study participants (Table 5). Similarly significant association was also seen between women's socio-economic status and their attitude (Table 6) and practices (Table 7).

Table 1: Distribution of study subjects according to socio-demographic profile

Factors	Number of subjects, n (%)
1.Age (in completed years)	
18-20	47 (13.4)
21-30	200 (57.0)
31-40	52 (15.0)
41-45	51 (14.6)
2.Socio-economic status	
I (>=6391)	26 (7.4)
II (3196-6390)	60 (17.2)
III (1917-3195)	132 (37.7)
IV (959-1916)	117 (33.4)
V (=<958)	15 (4.3)
3.Type of family	
Nuclear	309 (88.3)
Joint	41 (11.7)
4.Religion	
Hindu	337 (96.3)
Muslim	13 (3.7)
5.Education status	
Secondary or higher	151 (43.2)
Middle	61 (17.4)
Primary	42 (12.0)
Illiterate	96 (27.4)
6.Mother's education status	
Secondary or higher	28 (8.0)
Middle	23 (6.6)
Primary	29 (8.3)
Illiterate	270 (77.1)
7.Marital status	
Married	295 (84.3)
Unmarried	33 (9.4)
Widow	18 (5.2)
Separated	4 (1.1)
8.Occupation	
Homemakers	263 (75.1)
Student	29 (8.3)
Government job	14 (4.0)
Private job	14 (4.0)
Self- employed	30 (8.6)

Table 2: Distribution of study participants according to knowledge about menstruation

Knowledge regarding menstruation		Number of subjects, n (%)
1.Primary source of Information	Mother	163 (46.6)
	Sister	44 (12.6)
	Relative	52 (14.8)
	Neighbour	73 (20.9)
	Teacher	18 (5.1)
2.Reaction to first menstruation	Scared	257 (73.4)
	Usual	83 (23.7)
	Discomfort	10 (2.9)
3.Source of menstrual bleeding	Uterus	146 (41.7)
	Urinary bladder	42 (12.0)
	Don't know	162 (46.3)
4.Awareness regarding menstruation process	Physiological	346 (98.8)
	Curse of god/ Disease/ Result of some sin	4 (1.2)
5.Frequency of changing soakage material	Every 3-6 hours	48 (13.7)
	After first gets soaked	302 (86.3)

Table 3: Distribution of study participants according to attitude regarding menstruation

Likert Scale	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
Attitude questions	n (%)	n (%)	n (%)	n (%)	n (%)
1.Women can enter temple/pray during menstruation	309 (88.3)	31 (8.8)	0 (0.0)	10 (2.9)	0 (0.0)
2.Women can enter kitchen/cook food during menstruation	1 (0.3)	49 (14.0)	0 (0.0)	299 (85.4)	1 (0.3)
3.Women can take bath during menstruation	0 (0.0)	5 (1.4)	0 (0.0)	340 (97.2)	5 (1.4)
4.Women can wash hair during menstruation	0 (0.0)	123 (35.1)	1 (0.3)	225 (64.3)	1 (0.3)
5.Women can sleep on same beds as others during menstruation	0 (0.0)	23 (6.6)	1 (0.3)	326 (93.1)	0 (0.0)
6.Women can touch pickle during menstruation	2 (0.6)	264 (75.4)	3 (0.9)	81 (23.1)	0 (0.0)
7.Women need not avoid any foods during menstruation	0 (0.0)	163 (46.6)	2 (0.6)	185 (52.8)	0 (0.0)
8.Women can have sexual intercourse during menstruation	25 (7.1)	293 (83.7)	13 (3.7)	19 (5.5)	0 (0.0)

Table 4: Menstrual and personal hygiene practices

Practices	Satisfactory n (%)	Unsatisfactory n (%)
1.Soakage material	242 (69.1)	108 (30.9)
2.Storage of soakage material	349 (99.7)	1 (0.3)
3.Frequency of changing soakage material	41 (11.7)	309 (88.3)
4.Disposal of soakage material	350 (100.0)	0 (0.0)
5.Bathing during Menstruation	345 (98.6)	5 (1.4)
6.Washing of genitals after maturation	312 (89.1)	38 (10.9)
7.Privacy for changing of soakage material	350 (100.0)	0 (0.0)
8.Reuse of soakage material	307 (87.7)	43 (12.3)

Table 5: Association of socio-demographic determinants with knowledge regarding menstrual hygiene

Factors		Good knowledge n (%)	Poor knowledge n (%)	Chi square/ Fisher's Exact	Degree of freedom	p-value
1.Age	18-20	35 (74.5)	12 (25.5)	2.045	3	0.570
	21-30	142 (81.1)	33 (18.9)			
	31-40	58 (75.3)	19 (24.7)			
	41-45	42 (82.4)	9 (17.6)			
2.Socio-economic status*	High	76 (88.4)	10 (11.6)	5.883	1	0.015
	Low	201 (76.1)	63 (23.9)			
3. Subject's literacy status	≥Secondary	134 (88.7)	17 (11.3)	20.283	3	0.000
	Middle	50 (82.0)	11 (18.0)			
	Primary	28 (66.7)	14 (33.3)			
	Illiterate	65 (67.7)	31 (32.3)			
4.Mother's literacy status	≥Secondary	25 (89.3)	3 (10.7)	3.571	3	0.301
	Middle	19 (82.6)	4 (17.4)			
	Primary	20 (69.0)	9 (31.0)			
	Illiterate	213 (78.9)	57 (21.1)			
5.Marital status	Married	230 (78.0)	65 (22.0)	1.575	1	0.210
	Others[#]	47 (85.5)	8 (14.5)			
6.Occupation	Homemaker	211 (80.2)	52 (19.8)	3.377	2	0.196
	Student	25 (86.2)	4 (13.8)			
	Working[$]	41 (70.7)	17 (29.3)			

*High socio-economic status includes Class I and II of Modified B.G. Prasad scale and low socio-economic status includes Class III, IV and V.

[#]Others include unmarried, widow and separated.

[$]Working includes self- employed, government job and private job

Table 6: Association of socio-demographic determinants with attitude regarding menstrual hygiene

Factors		Positive attitude n (%)	Negative attitude n (%)	Chi square/ Fisher's Exact	Degree of freedom	p-value
1.Age	18-20	15 (31.9)	32 (68.1)	1.213	3	0.750
	21-30	73 (36.5)	127 (63.5)			
	31-40	22 (42.3)	30 (57.7)			
	41-45	18 (35.3)	33 (64.7)			
2.Socio-economic status*	High	41 (47.7)	45 (52.3)	6.059	1	0.014
	Low	87 (33.0)	177 (67.0)			
3. Subject's literacy status	≥Secondary	64 (42.4)	87 (57.6)	4.169	3	0.244
	Middle	20 (32.8)	41 (67.2)			
	Primary	12 (28.6)	30 (71.4)			
	Illiterate	32 (33.3)	64 (66.7)			
4.Mother's literacy status	≥Secondary	16 (57.1)	12 (42.9)	5.754	3	0.124
	Middle	9 (39.1)	14 (60.9)			
	Primary	10 (34.5)	19 (65.5)			
	Illiterate	93 (34.4)	177 (65.6)			
5.Marital status	Married	104 (35.3)	191 (64.7)	1.404	1	0.236
	Others[#]	24 (43.6)	31 (56.4)			
6.Occupation	Homemaker	91 (34.6)	172 (65.4)	3.357	2	0.187
	Student	15 (51.7)	14 (48.3)			
	Working[$]	22 (37.9)	36 (62.1)			

*High socio-economic status includes Class I and II of Modified B.G. Prasad scale and low socio-economic status includes Class III, IV and V.
[#]Others include unmarried, widow and separated.
[$]Working includes self- employed, government job and private job

Table 7: Association of socio-demographic determinants with frequency of change of soakage material

Factors		Satisfactory practice n (%)	Unsatisfactory practice n (%)	Chi square/ Fisher's Exact test	Degree of freedom	p-value
1.Age	18-20	6 (12.8)	41 (87.2)	0.485	3	0.926
	21-30	22 (12.6)	153 (87.4)			
	31-40	8 (10.4)	69 (89.6)			
	41-45	5 (9.8)	46 (90.2)			
2.Socio-economic status*	High	18 (20.9)	68 (79.1)	9.363	1	0.002
	Low	23 (8.7)	241 (91.3)			
3. Subject's literacy status	≥Secondary	9 (9.4)	87 (90.6)	8.363	3	0.037
	Middle	5 (11.9)	37 (88.1)			
	Primary	2 (3.3)	59 (96.7)			
	Illiterate	25 (16.6)	126 (83.4)			
4.Mother's literacy status	≥Secondary	27 (10.0)	243 (90.0)	6.169	3	0.087
	Middle	3 (10.3)	26 (89.7)			
	Primary	6 (26.1)	17 (73.9)			
	Illiterate	5 (17.9)	23 (82.1)			
5.Marital status	Married	32 (10.8)	263 (89.2)	1.364	1	0.243
	Others[#]	9 (16.4)	46 (83.6)			
6.Occupation	Homemaker	29 (11.0)	234 (89.0)	2.484	2	0.289
	Student	6 (20.7)	23 (79.3)			
	Working[$]	6 (10.3)	52 (89.7)			

*High socio-economic status includes Class I and II of Modified B.G. Prasad scale and low socio-economic status includes Class III, IV and V.
[#]Others include unmarried, widow and separated.
[$]Working includes self- employed, government job and private job

4. Discussion

Our study included all women in the age group 18-45 years', whereas majority of the studies done previously on menstrual problems have been confined to adolescents. In the current study, mean age of women was 27.20 ± 0.434 years. Kansal *et al* [8] observed that about two-third of respondent's mothers were illiterate and similar findings have been noted in our study. In the current study, most of the women (46.6%) acquired knowledge regarding menstruation from their mothers, followed by neighbours and relatives. Role of teachers was observed negligible in imparting education about various aspects of menstruation despite the fact that information on menstruation given by the mother is often incomplete and incorrect. Majority of

women (73.4%) in our study were scared at the time of their first menstruation which signifies that they had no/ little knowledge about menstruation prior to its onset. Correct information and education regarding menstruation and reproductive health is still a big challenge in India and in most of the developing countries. In our study more than one-third of the women knew that uterus is the source of menstrual bleeding and this knowledge was higher than other studies where approximately 20 percent subjects knew the correct source.[9-11]

In our study majority of the study subjects had a negative attitude towards women entering temple, touching pickle or having sexual intercourse during her menses. These findings are in line with results of several other Indian studies [1,12,13]. Nearly half of the subjects disagreed that women need not avoid any foods during menstruation whereas they had a positive attitude towards women entering kitchen, taking bath, washing hair and sleeping on same bed as others during her menses. These findings could be a reflection of the culture and taboos in the society regarding menstruation.

In the current study, only 53.7% women were using sanitary pads while in the study conducted by Mudey *et al* [14] majority of the girls used cloth (46.67%) and only 15.67% were using sanitary napkins. Dasgupta *et al*.[15] observed in his study that lack of privacy was an important problem since more than half of the respondents did not possess a covered toilet and only 57.5% girls properly disposed the used material whereas in the current study almost all the women had satisfactory practices regarding storage and disposal of absorbent material. In our study, 89.1% women washed their genitalia satisfactorily whereas, in the study conducted by Shanbhag *et al* [16] only 53.8% washed their genitalia after micturition all the time.

Statistically significant association was seen between knowledge and socio-economic status and literacy status of the study participants. These findings suggest that with increase in literacy level or socio-economic status knowledge increases. Statistically significant association was seen between attitude and participant's socio-economic status depicting that women belonging to a higher socio-economic status have a better attitude regarding menstruation compared to those belonging to lower socio-economic status. Significant association was also seen between practice and respondent's socio-economic status and literacy status. In a study done by Kansal *et al* [8] significant association was observed between menstrual hygiene practices and subject's marital status, literacy status, religion, socio-economic status and mother's literacy status.

The findings of our study can be generalized and applied to all the rural women of India with similar socioeconomic and cultural background. Women need to be educated about MHM and significance of menstruation and use of satisfactory absorbent material so as to enable them to lead a healthy reproductive life.

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