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Original Research Article

Assessment of knowledge, practice and perception of menstruation among adult women in the reproductive age group, in Mangalore, India

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ABSTRACT

Background: Women often lack knowledge regarding reproductive health including menstruation which can be due to socio-cultural barriers in which they grow up. The present study is aimed at assessing the level of knowledge regarding menstruation and hygienic practices and perceptions during menstruation.

Methods: It was a cross sectional study, conducted among 110 adult women to assess their knowledge regarding menstruation, practices followed during menstruation and their perception of menstruation. The collected data was analyzed using SPSS version 17.0. Chi square test was applied. $P < 0.05$ was considered to be significant.

Results: Only 52% of the study population has satisfactory knowledge regarding menstruation. Women between 15 to 20 years of age and those from the middle and higher socio-economic groups seem to possess maximum knowledge regarding menstruation. Women of the higher socio-economic group practice better sanitary measures during menstruation with 100% of them using pads, as compared to women of lower socio economic group who showed a trend of using cloth (87.5%). Women of the upper socio-economic class (42.78%) had better perception towards menstruation ($p < 0.05$).

Conclusions: It is very important that lower socio-economic group should be educated about the importance of maintaining hygiene during menstruation by proper health education and equip them with skills regarding safe and hygienic practices to prevent the risk for reproductive tract infections.

Keywords: Knowledge, Menstrual hygiene, Perception, Reproductive tract infections, Socio-economic class

INTRODUCTION

Menstruation is the visible manifestation of cyclic physiologic uterine bleeding due to shedding of the endometrium following invisible interplay of hormones mainly through hypothalamo-pituitary-ovarian axis.¹ Women often lack knowledge regarding reproductive health including menstruation which can be due to socio-cultural barriers in which they grow up. These differences create various problems for them. The need of the hour is

to have the information, education and an enabling environment to cope with menstrual issues.²

In India, women's perceptions of menstruation vary among different cultures and religions. There are many taboos that women have to face during their menses. There is limited knowledge and many misconceptions about menstruation among women in India before and after their menarche. This usually leads to undue fear, anxiety, and unsanitary practices. The knowledge and

practices related to menstruation are critically dependent on socio-economic conditions.³

Adolescent girls constitute a vulnerable group, particularly in India where female children are neglected. Menstruation is still unfortunately thought of as something that is unclean or dirty in some parts of the Indian society. The reaction to menstruation depends upon the general awareness and knowledge about the subject. Increasing the awareness regarding menstruation among adolescent girls will greatly influence their perception regarding the same. There are several misconceptions and practices regarding menstruation practiced in our society today which may sometimes result in adverse health outcomes. Hygiene-related practices of women have a significant impact on their overall health of women; especially with regard to reproductive tract infections (RTI). The strong association between socio-economic status, menstrual hygiene practices and RTI is a clear indicator that educating women on how to maintain adequate sanitation and hygiene is of at most importance. Women having better knowledge regarding menstrual hygiene and safe practices are more likely to practice adequate sanitation during their menstrual cycle and are therefore less vulnerable to RTI and its consequences. Therefore, increased knowledge about menstruation right from adolescence may help in mitigating the suffering of millions of women.⁴

Studies have shown that women, who lack knowledge about menstruation and the need to observe hygienic menstrual practices, are likely to suffer from RTIs such as pelvic inflammatory diseases and even infertility.⁵⁻⁷ Special health care needs and requirements of women during monthly cycle of menstruation are collectively given the term "Menstrual hygiene".⁸ Therefore this study was planned with the following objectives.

Objectives

- To assess the knowledge of women in the reproductive age group regarding menstruation.
- To study the practices of women in the reproductive age group towards maintaining menstrual hygiene.
- To determine the perception of women regarding menstruation.

METHODS

Study design

The present study was a cross sectional study, conducted among 110 adult women visiting Government Lady Goschen Hospital, Mangalore and KMC Hospital, Attavar, Mangalore, for a period of one month.

Study subjects

Adult women of reproductive age group residing in rural Mangalore.

Inclusion and exclusion criteria

Adult women irrespective of their socio-economic status and who gave their consent were included in the study. Adult women who did not give consent or did not want to participate were excluded from the study.

Sample size

With 95% confidence level and 80% power, assuming 50% knowledge, the sample size comes to be 96. By keeping 10% non-response error, the required sample size would be 110.

Sample size was determined based on the following calculations:

Formula used was,

$$N = (Z\alpha^2 PQ)/E^2$$

Z α was taken at 95% confidence level

E = 20% relative precision (80% Power)

Study tool

A survey with semi-structured and pre-tested questionnaire was conducted to collect the information on educational status, socioeconomic status, knowledge on menstruation, practices for menstrual hygiene and perception of menstruation.

Questionnaire was divided into 3 parts: A, B and C:

A. Knowledge on menstruation

This section consists of 10 questions, equal weightage given to each question, with only one correct answer. Participants were awarded one mark for each correct answer and zero for each incorrect answer.

- If total score is >6, participant had satisfactory knowledge regarding menstruation.
- If total score is 5-6, participant had average knowledge regarding menstruation.
- If total score is <5, participant had below average or poor knowledge regarding menstruation.

B. Practice of menstrual hygiene

The percentage of the study sample that maintains hygienic practices during menstruation was assessed based on the response to each of the 10 queries.

C. Perception of menstruation

The various perceptions on menstruation among the study samples were assessed based on the response to each of the 10 queries. The participant was awarded 5 points for

the most ideal answer and 1 point for the least ideal answer. Hence, the maximum score in this section would come up to be 50, whereas the minimum would be 10.

Statistical analysis

The collected data was analyzed using SPSS version 17.0. For qualitative data statistical test Chi-square was used and $p < 0.05$ was taken as statistically significant.

Ethical clearance

Institutional ethics committee clearance was obtained prior to the commencement of the study. Permission was then obtained from the Medical Superintendent of Govt. Lady Goshen Hospital, and KMC Hospital, Attavar to carry out the study among female patients of reproductive age group.

Data collection methodology

The questionnaire was given to all those women in the reproductive age group (between menarche and menopause) who were willing to participate. The willing participants were required to fill a participant information sheet and consent form stating their consent to participate in the same. The information provided by all the participants was kept confidential and only used for research purposes.

RESULTS

Our study was conducted in a study population of 110 women, in Govt. Lady Goschen Hospital and KMCH, Attavar, Mangalore. Out of our total study population of 110 women, it was found that 29.1% (32 women) belonged to the lower socio-economic group, 62.7% (69 women) were from the middle socio-economic group, and 8.2% (9 women) from the higher socio-economic group (Table 1). Majority of the women (44.5%) were between 20 to 25 years of age and only 13.6% (15) of the women were above 30 years of age (Table 1).

Table 1: Distribution of age and socio-economic status among the study population (N=110).

Variables	Frequency	%
Age in years		
15-20	30	27.3
20-25	49	44.5
25-30	16	14.6
>30	15	13.6
Socio-economic status		
Lower	32	29.1
Middle	69	62.7
Higher	9	8.2

In the present study, it was observed that 52% (57 women) of the study population possess satisfactory

knowledge regarding menstruation (Table 2). Women between 15 to 20 years of age seem to possess maximum knowledge regarding menstruation with a mean score of 7.6 out of 10. However, women between 25 to 30 years of age seem to possess minimum knowledge regarding menstruation with a mean score of 5.6 out of 10. As is obvious from Table 2, women from the lower socio-economic group possess least amount of knowledge regarding menstruation with their mean score being 5.8 out of 10 which is quite low compared to women from the middle and higher socio-economic groups.

Table 2: Assessment of menstrual knowledge (N=110).

Variables	Frequency	%
Menstrual knowledge		
Satisfactory	57	52
Average	29	26
Poor	24	22
Variable Mean score (out of 10)		
Mean knowledge based on age groups		
15 to 20 years	7.6	
20 to 35 years	7.0	
25 to 30 years	5.6	
>30 years	7.0	
Mean knowledge based on socio economic status		
Lower	5.8	
Middle	7.5	
Higher	7.1	

Table 3: Assessment of hygienic practices during menstruation among the study population.

Variables	Frequency (N)	%
Type of Absorbent used (N= 110)		
Sanitary pads	64	58
Cloth	46	42
Time of disposal of used cloth (N=46)		
After 3 months	27	58
After 4 months	13	29
After 1 year	5	11
After 2 years	1	2
Method of disposal of used pad or cloth (N=110)		
Flushing in toilet	19	17
Throw in dustbin	88	80
Bury in landfills	2	2
Throw on Roads	1	1
Cleaning genitalia (N=110)		
Always	16	14
Occasionally	39	36
Not at all	55	50

Table 3 depicting the hygienic practices during menstruation shows that 64 (58%) women used sanitary pads during menstruation while 46 (42%) used cloth. It is seen that 83% of women between 15 to 20 years of age used pads as absorbents during menstruation whereas

women above 30 years of age (80%) seem to show a trend of using cloth (Table 4) and the association was found to be statistically significant.

While assessing the hygienic practices during menstruation, the economic status of women cannot be ignored, and in the present study, it was observed that women from the upper socio-economic group seem to practice better sanitary measures with 100% of the women from this group using pads as absorbents during menstruation compared to 87% of women from lower socio-economic group who mainly use cloth and the association was also significant (Table 4). From the Table

3, it was noted that a greater percentage of women (58%) who use cloth as an absorbent during their menses, dispose of the used cloth after 3 months (Table 3). Regarding the method of disposal of the used material, 80% women properly disposed the cloth or sanitary pads used; they wrap the cloth or sanitary pad in paper or a plastic cover.

This is a good sign, indicating that maximum number of women (80%) dispose of their used absorbent in a hygienic and sanitary manner (Table 3). Cleanliness of external genitalia was satisfactory in case of 50% women. (Table 3).

Table 4: Association of hygienic practices during menstruation and respondent's age and socio-economic status.

Variables	Hygienic practices		P value
	Maintained (pads) N=64 (%)	Not maintained (cloth) N=46 (%)	
Age in years			
15-20	25 (83)	5 (17)	<0.001
20-25	27 (55)	22 (45)	
25-30	9 (56)	7 (44)	
>30	3 (20)	12 (80)	
Socio-economic status			
Lower	4 (13)	28 (87)	<0.001
Middle	51 (74)	18 (26)	
Higher	9 (100)	0 (0)	

* Chi-square

Table 5: Association of perception regarding menstruation and age and socio-economic status of study population (N=110).

Variables	N	Mean	S.D	P value
Age in years				
15-20	30	40.9	5.06	<0.001
20-25	49	37.47	5.88	
25-30	16	34.50	5.65	
>30	15	33.93	7.19	
Socio-economic status				
Lower	32	33.34	5.74	<0.001
Middle	69	38.73	5.60	
Higher	9	42.78	5.31	

* ANOVA (Fishers F test)

Restrictions during menstruations are common as seen in Table 6. The most frequent were restrictions in visiting holy places (28.2%) and attending social functions (12.7%). 16 (14.6%) women faced restrictions in household activities. As is evident from the Table 5,

women from the higher socio-economic group possess a better perception towards menstruation, with their mean score being 42.78 out of 50. In contrast to this, women from the lower socio-economic group seem to have a significantly lower mean score of 33.34 out of 50 (Table 5).

Table 6: Perception of menstruation (N=110).

Attribute	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
Menstruation is a curse	57 (51.8)	25 (22.7)	16 (14.5)	4 (3.6)	8 (7.3)
Women should be isolated during menstruation	63 (57.3)	32 (28.2)	7 (6.4)	5 (4.5)	4 (3.6)
It's okay to do household activities during menstruation	9 (8.2)	7 (6.4)	17 (15.5)	50 (45.5)	27 (24.5)
It's okay to do visit holy places during menstruation	21 (19.1)	10 (9.1)	30 (27.3)	29 (26.4)	20 (18.2)
Women should be restricted from attending social functions during menstruation	52 (47.3)	33 (30)	11 (10)	2 (1.8)	12 (10.9)
More nutritious diet should be consumed during menstruation	10 (9.1)	8 (7.3)	20 (18.2)	49 (44.5)	23 (20.9)
Talking about menstrual health is embarrassing	35 (31.8)	35 (31.8)	17 (15.5)	12 (10.9)	11 (10)
I feel comfortable to confide to a relative/friend regarding my menstrual problems	23 (20.9)	46 (41.8)	12 (10.9)	16 (14.5)	13 (11.8)
I hide my menstrual period from male members of my family	21 (19.1)	26 (23.6)	33 (30)	17 (15.5)	13 (11.8)
Education regarding menstruation is important for women	5 (4)	7 (6)	6 (5)	26 (23)	66 (60)

DISCUSSION

Menstrual hygiene is crucial in reproductive life of every woman. It is remarkable that poor menstrual hygiene contribute to reproductive and urinary tract infections. Therefore, adolescent girls should have sound knowledge regarding menstrual hygiene and improve their menstrual hygiene practice. Assessing the knowledge and imparting the knowledge on menstrual hygiene to adolescent girls is one of the essential steps to create the awareness among them. It was observed in this study, that only 89% of women believed menstruation to be physiological process, whereas in a similar study, 88.3% believed it to be a physiological process.¹⁰

Assessment of knowledge regarding menstruation disclosed that 52% women had satisfactory knowledge regarding menstruation while 26% women had average knowledge. These observations are found to be more favorable as compared to the study conducted by Anusree et al who had reported 46.7% of adolescent girls with good knowledge.¹¹ Analysis of the association between the level of knowledge regarding menstruation among adult women in reproductive age group and their selected demographic variables (age and socio-economic status) reveals that there was significant association between the level of knowledge and age group ($p < 0.05$). It was also evident from the study that there was no significant association between the level of knowledge related to menstruation and socio-economic status ($p > 0.05$).

A study conducted by Anusree et al reported that there was no association between the knowledge level and age and socio-economic status.¹¹

Studies which were reported from India and other developing countries have highlighted the common practices which have prevailed among the adolescent females.^{4,12} The type of absorbent material which is used is of primary concern, since reuse of the material could be a cause for infection if it is improperly cleaned and poorly stored.¹² This study revealed that most of the low income group women (87%) used old clothes as menstrual pads and they reused the clothes after washing them with soap and water. They discarded the clothes by throwing them with the routine waste after using it for a few months.

Very few women from the lower income group used sanitary pads (12.5%) which were available in the market; possibly due to their low socioeconomic status, lesser availability of the pads at the rural areas and lack of awareness. Other researchers, in their studies, also reported that more than three fourth of the girls used cotton clothes and reused them after washing them.^{6,11,13,14}

A study from India indicated the use of old cloth material as a frequently used absorbent among (82.5%) rural and (72.2%) urban girls. In our study, 42% women used cloth material as menstrual absorbents, through the practice of cleaning or sanitizing. Our findings are in accordance to those of other studies which were reported from India.^{11,15} Based on his study, Narayana et al suggested that urban girls had better awareness about menstrual hygienic practices than their rural counterparts.¹⁶ While other studies, that is, Prateek et al, Yerpude and Dasgupta and Sarkar reported higher use of sanitary pads.^{4,17,18}

Cleanliness of the external genitalia was satisfactory (the frequency of cleaning the external genitalia was more

than 2 times per day) in case of 50% women. A study which was conducted by another author revealed that only 34.33% of the girls cleaned their genitalia.^{6,19} Soap and water were the commonest materials which were used.

In the present study, the commonly practiced methods of disposal of the used absorbent were, wrapping it in paper and either disposing it in a place which was used for solid waste disposal or burning it. The same findings were reported by other studies.^{6,11,17,19}

Different restrictions were practiced by most of the girls in the present study, possibly due to the different rituals in their communities; the same were practiced by their mothers or other elderly female in the family, due to their ignorance and false perceptions about menstruation. These findings were consistent with those of other studies.^{6,11,15,16}

CONCLUSION

Menstrual hygiene is an issue that needs to be addressed at all levels. A variety of factors are known to affect menstrual behaviors, the most influential ones being economic status and residential status (urban and rural). Awareness regarding the need for information on healthy menstrual practices is very important. It is essential to design a mechanism to address unsanitary menstrual practices.

The present study reveals that knowledge and practices about menstrual hygiene were good among women in the reproductive age group. Only a few women especially in the lower socioeconomic group had poor knowledge regarding menstruation and did not practice adequate sanitation. So it is important to educate this age group about the importance of maintaining hygiene during menstruation by proper health education to equip them with skills regarding safe and hygienic practices so as to enable them to lead a healthy reproductive life and prevent the risk for reproductive tract infections.

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Ethical approval: The study was approved by the Institutional ethics committee from the Medical Superintendent of Govt. Lady Goshen Hospital, and KMC Hospital, Attavar

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