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A study among school-going adolescent girls in Rewa city, Madhya Pradesh, India: awareness and practices regarding menstruation

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ABSTRACT

Introduction

The World Health Organization defines adolescence as 10-19 years of age. In India, as per the most recent 2011 census, the adolescent population is 253 million, a quarter of the country's total population. Menarche is an important milestone in a girl's life and the beginning of her reproductive life. Menstruation is a challenge for many girls, as lack of sanitary products restricts their involvement in education and social activities. The aim of this study was to estimate menstrual awareness and hygiene practices among school-going adolescent girls.

Methods

A cross-sectional study was carried out among 200 adolescent girls of 9th to 12th standard classes in schools of Rewa, Madhya Pradesh, India. Informed consent was taken from their parents and school Principals.

Results

Mean age of the participants was 15.1 ± 1.54 years and mean age of menarche was 13.24±1.20 years. Most (68.5%) girls had heard about menstruation before menarche; 91.5% answered that menstruation is a normal phenomenon; 87% used single-use disposable sanitary pads and 6.5% used washable, reusable cloths.

Conclusion

The present study highlights the importance of adolescent girls receiving adequate knowledge about menstruation before menarche through menstrual hygiene management programmes in schools.

Keywords: Awareness, Menstruation, Menstrual hygiene practices, Adolescent girls

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INTRODUCTION

The word 'adolescent' is derived from the Latin word 'adolescere' which means to grow to maturity.[1] WHO defines adolescence as the age group 10-19 years.[2] Approximately 1.2 billion adolescents make up 16% of the world's population.[3] In India, as per the most recent 2011 census, the adolescent population is 253 million,[4] which accounts for a quarter of the country's total population. In Madhya Pradesh, adolescents make up 22% (16,011,290) of the State population.[5]

Menstruation is an important event in a girl's life and the beginning of her reproductive life. Menstruation starts in girls at an average age of 13 globally (first menstruation is called menarche) and usually stops at

around the age of 50, called menopause.[6] Most girls receive their gynaecological information from their mothers, religious books, older sisters and peers. However, in India, such information is often given after menarche rather than before. Girls who have better knowledge regarding menstrual hygiene and safe practices, such as washing genitalia regularly, using sanitary pads and proper disposal of sanitary pads, are less vulnerable to reproductive tract infections (RTIs) and their consequences.[7] Therefore, it is important that girls receive knowledge regarding menstruation prior to menarche. Many restrictions are imposed on menstruating girls and women in India, including participation in cooking, work activities, bathing, worshipping and eating certain foods, due to perceptions that menstruation is dirty and polluting. Educating men and women regarding menstruation can help to overcome these taboos.[8] Menstrual hygiene is a challenge, however; only 36% of Indian women use sanitary pads during their periods,[9] with significant differences between urban and rural populations. Most (72.1%) urban girls use sanitary pads but only 27.9% of rural girls do.[10]

Rewa in Madhya Pradesh, India, is an educational hub where children come to school from surrounding villages, meaning that the population of school-going girls is mixed rural and urban. This study was planned to assess the menstrual awareness and practices among adolescent school-going girls of Rewa city.

METHODS AND MATERIALS

A community based descriptive, cross-sectional study was carried out among the school-going adolescent girls of government and private schools in Rewa from March to May 2019. Multistage random sampling was used. Firstly, a list of all higher secondary schools was obtained from the Rewa City Department of School Education Office. Twelve Government-run higher secondary schools, 52 private higher secondary schools and one residential school were available. Two Government-run schools and two private schools were selected using a random number table and one residential school (the only one in Rewa) was also included. Girls enrolled in the 9th–12th standard class were selected by systematic random sampling, from their school attendance register. This enrolled 200 girls in the study. Inclusion criteria were adolescent schoolgirls studying in 9th–12th standard class who presented on the day of data collection; those who had attained menarche; and whose parents gave consent to participate. Confidentiality and anonymity were assured. The study received ethical approval from the authors' institutional ethics committee.

A semi-structured questionnaire was used to collect data after obtaining permission from the school Principals and informed consent from parents. The objectives, methods and implications of the study were explained to participants. The questionnaire was administered by researchers and information was collected to assess awareness of menstruation and menstrual hygiene practices. After data collection, information regarding menstrual health was given to girls and any queries they raised were answered. Definitions for the study were given as follows: '*menarche* – first menstrual cycle in female humans' and '*menstruation* – a biological process in a woman where each month blood and other material is discharged with the lining of the uterus. Menstruation occurs from the onset of puberty until the menopause, except during pregnancy'.[11] Data were collected, compiled and analyzed using MS Excel. Percentages for qualitative variables, mean and standard deviation (SD) were obtained for quantitative variables.

RESULTS

Of the 200 study participants, 36 (18%) studied in the 9th standard class, 80 (40%) in 10th standard, 51 (25.5%), in 11th standard and 33 (16.5%) in 12th standard. Most (153, 76.5%) were between 15 and 17 years of age with mean age 15.82±1.34 years. The mean age of menarche amongst the study population was 13.24±1.20 years. Most were Hindu (175, 87.5%), with 18 (9%) Muslim and 7 (3.5%) other religions. Mothers of the study populations were mostly literate (153, 76.5%) of whom 126 out of 153 were educated to higher secondary level and above. Most mothers were housewives (172, 71%). Socioeconomic status was 50 (25%) belonging to the upper class; 65 (32.5%) upper middle class; 44 (22%) middle class; 30 (15%) lower middle class; and 11 (5.5%) to the lower class (Table 1).

Table 1 Sociodemographic characteristics of study participants

	Number	Percent
Age/standard class		
9th standard class	36	18%
10th standard class	80	40%
11th standard class	51	25.5%
12th standard class	33	16.5%
Religion/ethnic group		
Hindu	175	87.5%
Muslim	18	9%
Others	7	3.5%
Education level of mother		
Literate	153	76.5%
Illiterate	47	23.5%
Graduate and above	78	39%
Up to higher secondary	48	24%
Up to primary school only	27	13.5%
Mother's occupation		
Housewife	142	71%
Professional	16	8%
Service (govt/private)	23	11.5%
Business	13	6.5%
Other occupation	6	3%
Socioeconomic status		
Upper class	50	25%
Upper middle class	65	32.5%
Middle class	44	22%
Lower middle class	30	15%
Lower class	11	5.5%

Table 2 Knowledge of study participants regarding menstruation

	Knowledge of menstruation	Yes (number %)	No (number %)
1	Had you heard about menstruation before menarche?	137 (68.5%)	63 (31.5%)
2	Is menstruation a disease?	17 (8.5%)	183 (91.5%)
3	Do pregnant women menstruate?	36 (18%)	164 (82%)
4	Does menstruation stop at a particular age?	183 (91.5%)	17 (8.5%)
5	From where does menstrual blood originate?		
	Uterus	110 (55%)	
	Other (vagina, urethra etc.)	38 (19%)	
	Not known	52 (26%)	
6	Have you heard about any of these products?		
	Sanitary pad*	188 (94%)	
	Cloth (Homemade reusable pads)*	69 (34.5%)	
	(Other) Tampon, Menstrual Cup*	54 (27%)	

Multiple responses possible

Table 3 Distribution of study participants according to menstruation profile

	Any symptoms you feel during menses?	Number (%)
1	Abdominal Pain (Dysmenorrhea)	92 (46%)
2	Abdomen pain + backache	9 (4.5%)
3	Abdomen pain + lethargy	5 (2.5%)
4	Abdominal Pain + backache + lethargy	19 (9.5%)
5	Backache	50 (25%)
6	Lethargy	15 (7.5%)
7	No	10 (5%)
Is your menses regular?		
1.	No	48 (18%)
2.	Yes	152 (82%)
If irregular, have you taken medical advice?		
1.	No	32 (16%)
2.	Yes	16 (8%)
Usual duration of flow		
1	<2 days	0 (0)
2.	3-5days	152 (76%)
3.	>5 days	48 (24%)
Usual length of cycle (days)		
1.	<28 days	56 (28%)
2.	28-32 days	122(61%)
3.	>32 days	22 (11%)

Table 4: Distribution according to practices of study participants during menstruation

	What do you normally use during your period?			Number (%)
1.	Sanitary pad (single use, disposable pad)			174 (87%)
2.	Cloth (homemade, reusable pads)			13 (6.5%)
3.	Other, including tampon and menstrual cup			3 (1.0%)
Do you reuse it? (Cloth or menstrual cup)				
1	Yes	10 (5%)	No	190 (85%)
How many times you change absorbents?				
1.	>3 times /day			23 (11.5%)
2.	2 times /day			110 (55%)
3.	Once			67 (33.5%)
How do you dispose of it (if disposable)?				
1.	Burn			59 (29.5%)
2.	Dustbin			139 (69.5%)
3.	Flush down toilet			2 (1%)
What do you use to wash genitalia?				
1.	Plain water			42 (21%)
2.	Soap			158 (79%)
How many times you wash genitalia?				
1.	Once a day			20 (10%)
2.	2 times a day			45 (22.5%)
3.	≥3* a day			13 (67.5%)
Do you take bath daily during period?				
1.	Yes	178 (89%)	No	22 (11%)

Table 5: Distribution of study participants according to reasons for not using sanitary pads

Pad users	Number (%)
Sanitary pad users	174 (87%)
Reasons for not using sanitary pad	26 (13%)
Not comfortable	8 (30.8%)
Not available nearby	4 (15.4%)
Too costly	12 (46.2%)
Other reason (not specified)	2 (7.7%)

Table 2 shows that 137 (68.5%) study participants had heard about menstruation before menarche. Most study participants (91.5%) answered that menstruation is a normal phenomenon, 55% knew that the uterus is the source of menstrual blood but 52 (26%) did not know the origin of blood or answered incorrectly. Most study participants (94%) had heard about sanitary pads but only 27% had heard about menstrual cups and tampons. Nearly half (46%) experienced dysmenorrhea (abdominal pain) as their sole menstrual symptom and 16.5% had abdominal pain with backache or lethargy. Loss of appetite and acne were also reported (Table 3). Most girls (76%) usually had 3-5 days duration of menstrual flow and three in four reported regular intervals in their menstrual cycle. Table 5 shows most study participants use sanitary pads but 13% do not. The reasons given for this included the cost (reported by 12 respondents, and 46% of those who do not), while 30 (77%) said they are not comfortable using pads; 2% used a menstrual cup or tampons instead.

DISCUSSION

In the present study, the mean age of menarche in adolescent school-going girls was 13.24±1.20 years, with 80% of girls attaining menarche between 12 and 14 years of age (minimum age was 10 years old and maximum was 17 years). Most (82%) of the girls had regular menstrual cycles. These findings are similar to those made by Omidvar et al[12] in South India, who recorded a mean age at menarche of 13.4±1.2 years in a group ranging from 10-17 years of age; in a study conducted in the Union Territories of India by Mathiyalagen et al[13] which found the mean age for menarche to be 12.99 ± 0.9 years; and in a study of Central India by Dixit et al[14] in which age of menarche ranged from 11-15 years, with a mean of 12 years overall (12 years and 13 years in private and government schools respectively). Our findings are similar to those by Kanchan et al[15] for some factors (in that study, 58.5% of the participants were aware of menstruation before menarche) but different for others (only 8.3% knew that the source of menstrual blood is the uterus and only 68% considered it a natural phenomenon). The sanitary pad was mentioned as the ideal absorbent by 95.5% of the study population in the study by Mathiyalagen et al,[13] and a similar result was found in study by Gupta et al.[16]

Priya et al[17] recorded 89.2% of participants using sanitary pads and the rest using cloths. Kanchan et al[15] recorded 91.2% girls used sanitary pads. Mathiyalagen et al,[13] recorded 78% girls using sanitary pads, with 22% girls using either cloths or mixed cloth/pads during menstruation. Possible reasons for the difference in findings across the studies include difference in socioeconomic status of participants, and potential lack of awareness and/or access. In the present study, just over half (55%) of girls changed absorbents twice in a day, and only 11.5% changed three times a day or more. Similar findings were recorded in a study by Sultana et al[10] in Bangladesh which recorded that just over half (56.2%) of urban girls changed absorbents twice or three times daily. Mathiyalagen et al[13] found the majority of girls (85.5%) changed the absorbent 2–4 times a day during menstruation. A comparatively low number of girls change the cloth/pad multiple times. This may be due to lack of awareness among the study population about the potential ill-effects of not changing pads, or lack of privacy to do so. Availability of absorbents might also be an issue. It was beyond the scope of this study to determine the exact reasons. Most of the girls (69.5%) threw absorbents into the dustbin after use

and 29.5% burned them. Similarly, Kanchan et al,[15] recorded the most commonly practiced methods of disposal to be the house dustbin (74.1%) and Paria et al[18] recorded that 73.45% girls in West Bengal threw pads into routine waste; the rest flushed pads down the toilet or burned them. In contrast, Mathiyalagen et al.[13] found that 64.5% of girls disposed of the absorbent by burning it, followed by public dustbin (19.4%). The contrasting findings may be due to lack of knowledge about how to best dispose of sanitary pads or a reflection of the disposal methods available.

Soap and water were used to wash genitalia by the majority of girls (79%) in the present study with the rest (21%) using plain water. This is higher than the 51.3% recorded as using soap and water and 47.6% using plain water only in study by Sultana et al[10] conducted in Bangladesh and the 27% using soap and water and 72.9% using plain water to wash genitalia in a study in India by Sharma et al.[19] Findings of the above studies may differ from our study because of sociodemographic structures of the girls participating in these studies. The number of study participants following recommended menstrual hygiene practices (cleaning of genitalia ≥3times/day) is only 67.5% in the present study. This can be improved by imparting health education to adolescent girls in the community but it should be noted that this result is better than in a study conducted in West Bengal[18] in which cleaning of external genitalia was satisfactory in only 48% of urban girls. Another study, of Union Territory,[13] recorded frequency of washing external genitalia of <2/day, which is unsatisfactory, and a study by Thakre et al[20] recorded appropriate cleaning by only 12% girls in total (58% of urban girls). These studies may record lower frequency of washing genitalia due to lack of knowledge about correct practices, lack of privacy or unavailability of toilets.

We acknowledge two limitations to this study. First, it was conducted amongst adolescent girls studying in 9^{th}–12^{th} standards, and so might have missed younger girls in lower classes who have just started their menarche. Further studies could be done without excluding younger girls. Second, since the study was conducted in selected schools of Rewa with a small sample size, the results may not be generalized to India, or even to Rewa as a whole. Further study is required to validate these findings at scale.

CONCLUSION

This study recommends that menstrual hygiene, health and sex education programmes be conducted at schools and also at primary care level, delivered by trained healthcare professionals. This would inform adolescent girls in Rewa of hygienic practices including products available for use, recommended frequency of changing absorbants and washing genitalia, and disposal of used absorbants. In many societies, parents hesitate from discussing reproductive health issues with their children as such subjects are considered taboo. Safe reproductive system health can be delivered by incorporating family education, which focuses on hygienic living, family and social relationships and personal development, into the school curriculum.

Government and NGOs need to focus on activities related to the dissemination of Government of India schemes for low-cost sanitary pads to adolescent girls, along with encouraging better utilization of schemes such as SABLA, aimed at girls aged 10-14, and other Integrated Child Development Scheme (ICDS) services such as Adolescent and Reproductive Sexual Health (ARSH) clinics. Most girls have poor information about menstruation and menstrual hygiene practices, suggesting that there is a need to impart more information including on how to maintain proper hygiene during menstruation. A continuous school education programme should be introduced including workshops and seminars focused on Adolescent Reproductive and Sexual Health (ARSH). Health camps in schools need to be encouraged, to treat any girls found to be suffering from reproductive tract morbidities. This study reinforces the need to empower young girls and to bring them out of traditional beliefs, taboos, misconceptions and restrictions to further improve the overall picture of menstrual health. Males and females in the community should be educated.

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