

# Knowledge and awareness regarding menstruation and HIV/AIDS among schoolgoing adolescent girls

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## ABSTRACT

**Introduction:** Menstruation in our country is associated with various myths and restrictions leading to lack of awareness among adolescent girls. Insufficient menstrual hygiene practices are the cause of stress associated with menstruation and reproductive tract infections. Sexually transmitted infections and HIV/AIDS are not openly discussed in our society making adolescents vulnerable to them. **Aim:** To assess the knowledge of school going adolescent girls regarding menstrual hygiene and HIV/AIDS. **Materials and Methods:** Girls studying in class 8<sup>th</sup>-12<sup>th</sup> standard and who have attained menarche were included in the study. A predesigned questionnaire, which consisted of questions related to menstrual awareness and knowledge about HIV/AIDS was used for data collection. Data was analysed using SPSS software and results were interpreted into percentages. **Results:** 282 girls took part in the study. Mean age of girls was 14.70 ± 1.5 years. Median age of girls was 15 years. Knowledge regarding menstrual hygiene and HIV/AIDS was found to be only satisfactory leaving a scope of improvement. Mother was the main source of information regarding both menstruation and HIV/AIDS. **Conclusion:** A comprehensive health education programme involving mothers is required to remove various misconceptions and taboos associated with menstruation and make it a pleasant experience for adolescent girls. Information, education and awareness programmes need to be strengthened to spread awareness regarding HIV/AIDS.

**Keywords:** Adolescents, HIV/AIDS, menstrual hygiene, sanitary pads

## Introduction

Adolescent period is very important for females as it is a transition phase characterized by rapid physical growth, psychological and behavioral changes.<sup>[1,2]</sup> Adolescence is defined by the World Health Organization as the age group between 10 and 19 years.<sup>[3]</sup> Menarche generally occurs between the ages of 11 and 15 years with a mean of around 13 years.<sup>[4]</sup> Menstruation is considered unclean or dirty in many societies.<sup>[5]</sup> Taboos, myths, and restrictions associated with menstruation leave a negative impact on adolescent girls.<sup>[6]</sup> A major determinant of morbidity in this age group is inadequate menstrual hygiene leading to increased vulnerability to reproductive tract infections.<sup>[5,7,8]</sup> Menstruation becomes an unpleasant experience for adolescent girls due to poor water, sanitation, and hygiene facilities and

inadequate menstrual hygiene management items (absorbents).<sup>[9]</sup> Previous studies have shown that many adolescent girls use cloth or no protection at all during menstruation which is highly unhygienic.<sup>[10]</sup> Because of the entire stigma associated with menstruation, adolescent girls do not often discuss this topic openly with their parents and therefore lack adequate knowledge regarding menstruation and puberty.<sup>[11]</sup> Thakre *et al.* have reported that good menstrual hygiene is a contributor toward achieving Millennium Development Goals.<sup>[6]</sup> Therefore, a public health awareness program should be developed to create awareness among adolescent girls regarding menstrual hygiene and also about sexual health so that they can manage these issues with confidence and dignity and improve their quality of life. With this background, the present study was conducted to assess the knowledge of schoolgoing adolescent girls regarding menstruation and AIDS.

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## Methodology

This was an observational, descriptive, community-based, cross-sectional study which was conducted in a randomly selected government school nearby our institution in the month of May 2016. Ethical clearance was taken from the Institute's Ethics Committee. Prior permission was also taken from the school authorities. The study population consisted of girls studying in classes 8<sup>th</sup> – 12<sup>th</sup> standards and who have attained menarche. A pre-designed questionnaire, which consisted of questions related to menstrual awareness and knowledge about HIV/AIDS, was used for data collection. The study purpose was explained to all the adolescent girls along with assurance of confidentiality. Before handling the questionnaire, a verbal consent was obtained from all the girls included in the study. They were explained every question in the questionnaire and their doubts were cleared. This was followed by a health education session regarding menstruation and sexually transmitted diseases. Data entry was done in Microsoft Excel. Data were analyzed using SPSS software version 22 (IBM Corporation, New York, USA) and results were interpreted into percentages.

## Results

A total of 282 girls participated in the study. Table 1 depicts the demographic details of the study population. Mean age of the girls was  $14.70 \pm 1.5$  years. Median age of the girls was 15 years. Majority (67.55%) of the girls were from 14 to 16 years' age group. Mothers of 62 (21.98%) girls were illiterate while mothers of 82 (29.07%) girls were graduate or postgraduate.

Table 2 shows the awareness on menstruation of the study population. About 144 (51%) girls thought that menstruation is a normal process while 37 (13.1%) girls considered it to be a burden on them. About 222 girls (78.7%) used sanitary pads during menstruation while washed clothes were used by 53 girls (18.8%). Almost 7 girls used unwashed clothes. When inquired about mood changes and backache associated with periods, majority (46%) experienced no such changes. Such changes were always observed in 16.3% of girls while 37.6% of girls sometimes experienced such changes. It was observed that 135 girls (47.9%) had no restriction at home during menses while activity was very much restricted during menses in 44 girls (15.6%). Majority of the girls (84.4%) were of the opinion that bathing and personal hygiene are necessary during menses while 26 (9.2%) girls did not agree with it. Few girls (6.4%) did not know about bathing and personal hygiene being necessary during periods. Mean age of menarche in our study was observed to be  $13.41 \pm 0.8$  years. Mean duration of menstrual cycle was observed to be  $26.6 \pm 0.7$  days. Mean duration of menstruation was  $4.1 \pm 0.8$  days in our study.

Table 3 shows the awareness of the study population regarding HIV/AIDS. In our study, 145 girls (51.41%) knew the full form of AIDS while 137 girls (48.58%) did not know it. According to 163 girls (57.80%), virus is the causative agent for AIDS followed by bacteria (23.04%) and fungi (19.14%). When asked

**Table 1: Demographic profile of the study population**

Characteristics	Number of children (%)
Age (years)	
11-13	60 (21.27)
14-16	189 (67.02)
17-18	33 (11.70)
Education of mother	
Illiterate	62 (21.98)
Up to 5 <sup>th</sup> standard	29 (10.28)
6-10 <sup>th</sup> standard	28 (9.92)
12 <sup>th</sup> standard	12 (4.25)
Graduate/postgraduate	82 (29.07)
Do not know	69 (24.46)
Education of father	
Illiterate	53 (18.79)
Up to 5 <sup>th</sup> standard	28 (9.92)
6-10 <sup>th</sup> standard	66 (23.40)
12 <sup>th</sup> standard	15 (5.31)
Graduate/postgraduate	48 (17.02)
Do not know	72 (25.53)

**Table 2: Awareness on menstruation**

Questions	Response	n (%)
Opinion on menstruation	Natural	144 (51.06)
	Burden	37 (13.12)
	Necessary change	101 (35.81)
Use during menses	Unwashed clothes	7 (2.48)
	Washed clothes	53 (18.79)
	Sanitary pads	222 (78.72)
Changes in mood, backache, and other complaints	Always	46 (16.31)
	Sometimes	106 (37.58)
	No change	130 (46.09)
Restriction at home during menses	Much	44 (15.60)
	Some	103 (36.52)
	No	135 (47.87)
Bath and personal hygiene necessary	Yes	238 (84.39)
	No	26 (9.21)
	Do not know	18 (6.38)
Age of onset of menses (years)	10-11	17 (6.02)
	12-15	251 (89)
	16-18	14 (4.96)
Duration of cycle	22-25	77 (27.30)
	25-28	80 (28.36)
	28-30	125 (44.32)
Duration of menstruation (days)	2-3	62 (21.9)
	4-5	126 (44.68)
	>5	94 (33.33)

about whether AIDS can be prevented, 190 girls (67.37%) said yes while 92 girls (32.62%) did not agree with it. Majority of the girls (76.59%) knew that AIDS can be transmitted by infected syringes. Similarly, maximum girls (77.30%) knew that AIDS can have mother-to-child transmission.

Table 4 shows the source of information about menstruation and AIDS to the adolescent girls. Mothers are the main source of information to the adolescent girls both about

**Table 3: Awareness on HIV/AIDS**

Question	Response	n (%)
Full form of AIDS	Yes	145 (51.41)
	No	137 (48.58)
Causative organism of AIDS	Virus	163 (57.80)
	Bacteria	65 (23.04)
	Fungus	54 (19.14)
Can AIDS be prevented	Yes	190 (67.37)
	No	92 (32.62)
Can AIDS be transmitted by infected syringes	Yes	216 (76.59)
	No	66 (23.40)
Can AIDS have mother-to-child transmission	Yes	218 (77.30)
	No	64 (22.69)

**Table 4: Source of information**

Question	Response	n (%)
Source of information about menstruation	Mother	175 (62.05)
	Peer group (friends, siblings)	81 (28.72)
	Media (TV, radio, newspaper, books)	26 (9.21)
Source of information about HIV/AIDS	Mother	144 (51.06)
	Peer group (friends, siblings)	66 (23.40)
	Media (TV, radio, newspaper, books)	72 (25.53)

menstruation (62.05%) and HIV/AIDS (51.06%). In addition, information regarding menstruation was received from peer group (28.72%) and media (9.21%). Information about AIDS was received by 72 girls (25.53%) from media in the study.

## Discussion

The study population ranged from 11 to 18 years and the maximum number of girls were from 14 to 16 years' age group. In a similar study by Thakre *et al.*, the study population ranged from 12 to 17 years and the maximum number of girls were 13 to 14 years of age.<sup>[6]</sup> In another study from central India, 85% of girls were from 14 to 15 years' age group.<sup>[12]</sup> One study reported that the study population ranged from 12 to 17 years, and the maximum number of girls were between 13 and 15 years of age.<sup>[13]</sup> In a study by Haque *et al.*, 52.4% of girls were between 11 and 13 years of age.<sup>[5]</sup> In the present study, approximately 20% of the parents were illiterate, while in a previous study, 14% of fathers and 12% of mothers had no education.<sup>[5]</sup> The mean age of menarche in our study was around 13 years which was comparable with the study of Thakre *et al.*<sup>[6]</sup> Similar age of menarche was observed in few previous studies also.<sup>[2,14]</sup> However, Thakre *et al.* reported a difference in the age of menarche in urban and rural settings and reported that girls living in urban areas attain menarche earlier as compared to girls living in rural areas.<sup>[6]</sup> Menstruation was considered to be a normal process by 50% of the adolescent girls in the present study as seen previously in a meta-analysis, whereas in some other studies, approximately 85% of girls were of the same opinion.<sup>[7,9,12]</sup> However, in one study, this perception was present only among 18% of girls.<sup>[6]</sup> In a previous study, only

34% of girls were aware that menstruation is a normal process but this number increased to 80% after they were imparted health education.<sup>[2]</sup> This observation highlights the importance of health education programs in schools focusing mainly on menstrual hygiene and reproductive health among adolescent girls. It was heartening to experience that only 13% of girls in the present study considered menstruation to be a burden on them which is in contrast to previous studies.<sup>[7,15]</sup> In one of the studies, the percentage of the study population that did not agree with the belief that menstruation is a God's curse rose from 33% to 47% post health education.<sup>[2]</sup> All these findings further strengthen the belief that menstruation is still associated with many misconceptions in our society and they can only be removed by increasing the scope of adolescent reproductive health coverage system in the country.

Majority (78%) of the girls use sanitary pads during periods as observed in our study which is consistent with some previous studies.<sup>[12]</sup> However, in some previous surveys and studies, the practice of using sanitary pads during menstruation was found to be very dismal.<sup>[2,7,16,17]</sup> It was observed in a previous study and a meta-analysis also revealed the same fact that sanitary pad use was more common in urban areas.<sup>[6,9]</sup> This difference in the usage of sanitary pads and clothes in rural and urban settings may be due to the easy availability of menstrual hygiene products in urban settings and also the media which make adolescent girls in urban areas more aware about these products. It has also been observed that the use of sanitary pads in adolescent girls increases after health education program which again stresses on a proper health education program for adolescents in our country.<sup>[5]</sup> Approximately 20% of the girls were also using washed clothes in the present study. In contrast, in a study in Rajasthan, 75% of girls were using clothes for protection during periods.<sup>[8]</sup> In a recent study from Karnataka, 40% of girls were using only clothes and 33% were using either clothes or sanitary pads during periods.<sup>[2]</sup> It was very surprising to find that 2% of girls in our study were using unwashed clothes during periods but it is still very much better as was observed in a previous study where approximately 46% of girls were using old clothes.<sup>[6]</sup> This is a matter of concern as unwashed or used clothes can be a source of infection. In the present study, 54% of the girls ever experienced mood changes, backache, and other problems associated with menstruation, whereas in a previous study, majority of the girls experienced abdominal pain, backache, and headache during periods.<sup>[18]</sup> This can be attributed to inadequate knowledge regarding menstrual problems as observed in a previous study where abdominal pain, headache, etc., decreased after health education.<sup>[5]</sup> Health education regarding menstrual problems is very essential in relieving stress associated with periods as it has been seen that stress increases cortisol secretion leading to irregular bleeding.<sup>[19]</sup> In our study, approximately 50% of the girls had some kind of restriction imposed on them during periods which was similar to a previous study where almost 70% of girls were restricted to do household work or attend temples or schools during periods.<sup>[6]</sup> Various studies have reported similar observations regarding restrictions during

periods in our country.<sup>[7,12,20]</sup> All these studies show the various myths and taboos associated with menstruation in our society which can only be removed by health education and empowering the female child as these practices may have religious sentiments too.<sup>[9,12,21]</sup> Majority of the girls were of the view that bath and personal hygiene are necessary during menstruation which was consistent with some previous studies.<sup>[2,9,15]</sup> Few studies have also shown that regular bathing is not practiced by many girls during menstruation which may be due to water scarcity, lack of knowledge, and lack of privacy.<sup>[22]</sup> It has also been observed that menstrual hygiene practices improved significantly in previous studies post health education.<sup>[2,5]</sup> Menstrual hygiene is very important for adolescent girls as it can prevent them from various reproductive tract infections.

Regarding awareness on HIV/AIDS, only 50% of the girls knew the full form of HIV/AIDS which was comparable to some previous studies.<sup>[23-25]</sup> Approximately 60% of the girls knew the etiology of AIDS which was similar to a previous study.<sup>[25]</sup> Majority of the girls were aware that AIDS is preventable as seen in few earlier studies too.<sup>[23,26]</sup> This may be due to various multimedia campaigns involved in increasing AIDS awareness. Maximum girls knew that the modes of AIDS transmission were through infected syringes and mother-to-child transmission as seen in a previous study.<sup>[23]</sup> However, few studies have also shown low level of awareness of modes of transmission of AIDS not only in our country but also in other countries.<sup>[25,27,28]</sup> This is very glaring as adolescent age is a very vulnerable group and knowledge of correct modes of transmission will protect adolescents from this deadly disease. In a study from Punjab, knowledge of modes of transmission of AIDS significantly increased after imparting health education to the study population.<sup>[29]</sup> Regarding the source of information about menstruation, mother was the main informant followed by peer group and media, which is consistent with other studies.<sup>[2,6,9,12,30]</sup> This signifies the importance of mothers as an important medium for health education regarding menstruation and menstrual hygiene, and openly discussing this topic with their daughters as a well-informed adolescent can further transfer her knowledge to her children when she becomes a mother. Multimedia also forms an important channel for dissemination of health education, as in some communities, this topic may not be openly discussed in the family. Mother was again the main source of information for HIV/AIDS in the present study, but this was in striking contrast with earlier studies where media were the main source of information.<sup>[24,25]</sup> Mothers coming out openly to discuss about HIV/AIDS with their children, especially adolescent daughters, is a very satisfying observation from our study.

The limitation of our study is that there might have been some overreporting as these observations are based on self-reported outcomes. The participants in the study might have answered some questions differently to satisfy the interviewer. In addition, the sample size taken was very small, considering the scope of the problem.

## Conclusion and Recommendations

The study was undertaken to understand the awareness level regarding menstruation and menstrual hygiene and HIV/AIDS among adolescent girls, and it was observed that still there are lots of issues to be addressed at various levels. It revealed that menstrual hygiene awareness is only satisfactory among adolescent girls and emphasizes the need for school adolescent health or sex education programs. A comprehensive awareness program has to be started among all levels of the society to remove misconceptions and taboos related to menstruation and to make it pleasant instead of stressful experience for girls. It will also help in empowering the girl child. Information, education, and communication campaigns have to be strengthened to increase awareness on menstrual hygiene practices and sexually transmitted diseases among adolescent girls as these are a vulnerable group. Health education programs need active participation of mothers so that they can break all barriers and discuss this topic openly with their adolescent daughters and make them confident in dealing this transition phase. Furthermore, teachers need to be adequately trained for imparting well-directed, continuous reproductive health education knowledge in schools to adolescent girls which increases their awareness on menstrual practices, sexuality, and puberty-related concerns and removes traditional beliefs and myths associated with menstruation.

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## Conflicts of interest

There are no conflicts of interest.

## References

1. World Health Organization. Adolescent friendly health services. An agenda for change. Geneva: World Health Organization; 2002.
2. Nagaraj C, Konapur KS. Effect of health education on awareness and practices related to menstruation among rural adolescent school girls in Bengaluru, Karnataka. *Int J Prev Public Health Sci* 2016;2:18-21.
3. WHO. Young people today. The health of young people: A challenge and promise. Geneva: WHO; 1993. p. 1-14.
4. Aniebue UU, Aniebue PN, Nwankwo TO. The impact of pre-menarcheal training on menstrual practices and hygiene of Nigerian school girls. *Pan Afr Med J* 2009;2:9.
5. Haque SE, Rahman M, Itsuko K, Mutahara M, Sakisaka K. The effect of a school-based educational intervention on menstrual health: An intervention study among adolescent girls in Bangladesh. *BMJ Open* 2014;4:e004607.
6. Thakre SB, Thakre SS, Reddy M, Rathi N, Phathak K, Ughade S. Menstrual hygiene: Knowledge, and practices among adolescent school girls of Saoner, Nagpur district. *J Clin Diagn Res* 2011;5:1027-33.
7. Dasgupta A, Sarkar M. Menstrual hygiene: How hygienic is the adolescent girl? *Indian J Community Med* 2008;33:77-80.
8. Khanna A, Goyal RS, Bhawsar R. Menstrual practices and



- reproductive problems: A study of adolescent girls in Rajasthan. *J Health Manag* 2005;7:91-7.
9. van Eijk AM, Sivakami M, Thakkar MB, Bauman A, Laserson KF, Coates S, *et al.* Menstrual hygiene management among adolescent girls in India: A systematic review and meta-analysis. *BMJ Open* 2016;6:e010290.
  10. Drakshayani Devi K, Venkata Ramaiah P. A study on menstrual hygiene among rural adolescent girls. *Indian J Med Sci* 1994;48:139-43.
  11. Kabir B, Barua MK, Ahmed M. Improving Menstrual Hygiene Facilities in Secondary Schools: Initiatives from BRAC-WASH Program. Dhaka, Bangladesh, 31 January-02 February, 2012.
  12. Dixit S, Raghunath D, Rokade R, Nawaz SA, Nagdeve T, Goyal I. Awareness about menstruation and menstrual hygiene practices among adolescent girls in central India. *Natl J Community Med* 2016;7:468-73.
  13. Ghattargi CH, Deo DS. Preparation and practices regarding menstruation: A comparative study in rural and urban adolescent girls. *Indian J Community Med* 2005;30:10-4.
  14. Singh A, Kiran D, Singh H, Nel B, Singh P, Tiwari P. Prevalence and severity of dysmenorrhea: A problem related to menstruation, among first and second year female medical students. *Indian J Physiol Pharmacol* 2008;52:389-97.
  15. Shanbhag D, Shilpa R, D'Souza N, Josephine P, Singh J, Goud BR. Perceptions regarding menstruation and practices during menstrual cycles among high school going adolescent girls in resource limited settings around Bangalore city, Karnataka, India. *Int J Collab Res Intern Med Public Health* 2012;4:1354-62.
  16. Anand E, Singh J, Unisa S. Menstrual hygiene practices and its association with reproductive tract infections and abnormal vaginal discharge among women in India. *Sex Reprod Healthc* 2015;6:249-54.
  17. Nielsen A.C., Plan India. Sanitary protection: Every woman's health right. New Delhi, India: Nielsen A.C., Plan India; 2010.
  18. Nagar S, Aimol KH. Knowledge of adolescent girls regarding menstruation in tribal areas of Meghalaya. *Stud Tribes Tribals* 2010;8:27-30.
  19. Markovic N, Markovic O. What Every Woman Should Know about Cervical Cancer. Dordrecht: Springer; 2008.
  20. Paria B, Bhattacharyya A, Das S. A comparative study on menstrual hygiene among urban and rural adolescent girls of West Bengal. *J Family Med Prim Care* 2014;3:413-7.
  21. Garg S, Anand T. Menstruation related myths in India: Strategies for combating it. *J Family Med Prim Care* 2015;4:184-6.
  22. Ade A, Patil R. Menstrual hygiene and practices of rural adolescent girls of Raichur. *Int J Biol Med Res* 2013;4:3014-7.
  23. Singh A, Jain S. Awareness of HIV/AIDS among school adolescents in Banaskantha district of Gujarat. *Health Popul Perspect Issues* 2009;32:59-65.
  24. Lal P, Nath A, Badhan S, Ingle GK. A study of awareness about HIV/AIDS among senior secondary school children of Delhi. *Indian J Community Med* 2008;33:190-2.
  25. Nirankar S, Shailendra K, Sujit K, Ashish Y, Pawan G, Singh JV. A study of HIV awareness in school adolescents in a rural area of Punjab. *JARBS* 2011;3:142-6.
  26. Dhondiyal M, Venkatesh R. Knowledge regarding human sexuality among adolescent girls. *Indian J Paediatr* 2006;8:743.
  27. Chatterjee C, Baur B, Ram R, Dhar G, Sandhukhan S, Dan A. A study on awareness of AIDS among school students and teachers of higher secondary schools in north Calcutta. *Indian J Public Health* 2001;45:27-30.
  28. Wagbatsoma VA, Okojie OH. Knowledge of HIV/AIDS and sexual practices among adolescents in Benin City, Nigeria. *Afr J Reprod Health* 2006;10:76-83.
  29. Kaur S, Padda AS, Singh T, Deepti SS. Awareness of STDs and HIV/AIDS among the adolescent girls of classes IX-XII in Amritsar, Punjab: An interventional study. *Indian J Dermatol Venereol Leprol* 2009;75:519-20.
  30. Nemade D, Anjenaya S, Gujar R. Impact of health education on knowledge and practices about menstruation among adolescent school girls of Kalamboli, Navi Mumbai. *Health Popul Perspect Issues* 2009;32:167-75.