

# Effectiveness of Interventional Reproductive and Sexual Health Education among School Going Adolescent Girls in Rural Area

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## Abstract

**Background:** Most adolescents lack access to age- and sex-appropriate health information which is vital for young people to make informed decisions about their reproductive sexual health. **Objectives:** The study objective was to study the effectiveness of the interventional reproductive and sexual health education on knowledge, attitude, and menstrual practices of school-going adolescent girls. **Materials and Methods:** It was an interventional study consisting of a pretest, intervention session, and posttest conducted among 400 school-going adolescent girls in a rural area of Maharashtra. **Results:** There was a statistically significant increase in knowledge, attitude, and practice median scores following intervention ( $P < 0.05$ ). **Conclusions:** Age- and sex-appropriate health education programs can facilitate the development of healthy reproductive and sexual behavior patterns among adolescents through the enhancement of knowledge and development of right attitude.

**Keywords:** Adolescent girls, education, intervention, menstrual practices, reproductive health

## INTRODUCTION

Adolescence, defined as the phase of life from 10 to 19 years, is a critical period of physical, psychological, and social maturation from childhood to adulthood.<sup>[1]</sup> Today, 1.2 billion adolescents stand at the crossroads between childhood and the adult world.<sup>[2]</sup> India has the largest population of adolescents in the world, with adolescent girls forming 22% of the country's female population.<sup>[2,3]</sup>

Most young people lack access to age- and sex-appropriate health information, skills, and services.<sup>[4]</sup> Moreover, discussion on reproductive and sexual health matters within and between generations is shadowed by numerous cultural taboos. The ignorance and myths surrounding these issues makes adolescents vulnerable to the consequences of inappropriate sexual behaviors such as early pregnancy leading to early parenthood or abortion and sexually transmitted diseases (STDs).

As long as these problems are allowed to persist, much of the energy, creativity, and idealism of youth will be lost. However, age- and sex-appropriate education can assist young people to make informed decisions about their reproductive sexual health.<sup>[5]</sup> Worldwide, a variety of programs have tried to address the reproductive and sexual health needs of adolescents.

Today's adolescents will determine the social fabric, economic productivity, and reproductive health and well-being of nations in the coming decades. Developing, implementing, and evaluating interventions that facilitate the development of healthy reproductive and sexual behavior patterns among adolescents are, therefore, a priority. Considering this background, the present study was undertaken to assess the effect of a prestructured intervention program on knowledge, attitude, and practices regarding reproductive and sexual health of adolescent girls.

## Research question

What is the effectiveness of interventional reproductive and sexual health education on knowledge, attitude, and menstrual practices of adolescent girls attending school and junior college in rural area?

- Null hypothesis – The intervention does not have any effect on the knowledge, attitude, and menstrual practices of the participants

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- Alternate hypothesis – The intervention improves the knowledge, attitude, and menstrual practices of the participants.

## MATERIALS AND METHODS

The institutional ethical committee's approval was obtained before starting the study. It was an interventional study consisting of a pretest, intervention in the form of health education, and posttest conducted among school-going adolescent girls in a rural area of Maharashtra. This study was carried out over a period of 2 years, i.e., from September 2016 to August 2018.

The sample size for this study was calculated separately by considering the effect of an intervention on knowledge, attitude, and practice as evident in a previous study,<sup>[6]</sup> and the highest sample size was obtained for practice variable. In this study, the proportion of participants having correct menstrual practice increased from 96.38% to 99.40% following intervention. Considering the value of  $\alpha$  at 95% confidence interval as 1.96, value of  $\beta$  at 90%, power as 1.28, and using the formula,<sup>[7]</sup> a sample size of 387 was obtained which was rounded off to 400. A total of 100 participants each were enrolled from an English medium school, vernacular (Marathi) medium school, science junior college, and commerce and arts junior college. The schools and junior colleges were selected by purposive sampling method. Participants from 9<sup>th</sup> to 10<sup>th</sup> standard from the schools and 11<sup>th</sup> and 12<sup>th</sup> standard from junior colleges who had attained menarche were included in the study. The girls who met the inclusion criteria were asked to assemble in a common hall where they were explained the purpose and the method of the study. Those who were not willing to participate and not willing to attend all adolescent health education sessions were excluded from the study. A list was prepared of girls satisfying the inclusion and exclusion criteria, and 100 participants were selected by systemic random sampling. Similar procedure was followed at all the four institutes. These participants were subjected to a pretest.

A predesigned and pretested questionnaire was used for data collection. This questionnaire was translated into vernacular language (Marathi), and the participants were free to choose between the two questionnaires. The questionnaire consisted of four parts: the first part consisted of sociodemographic data, menstrual history, and general information. The second and third parts assessed the knowledge and attitude of participants, consisting of 12 questions and 6 questions, respectively. The fourth part had ten questions checking the participants' menstrual practices.

The pretest was followed by adolescent health education program which was divided into six sessions conducted over 6 weeks. The content of this program was based on the guidelines for sexuality education by the United Nations Educational, Scientific and Cultural Organization,<sup>[8]</sup> syllabus for adolescent health education,<sup>[9]</sup> guidance booklet on menstrual hygiene management by the Government of India,

the United Nations Children's Fund (UNICEF),<sup>[10]</sup> and "On the horizon of adulthood" by the UNICEF.<sup>[11]</sup> The communication method used was didactic type using PowerPoint presentations and video shows. The content was shown to the principals of respective institutes and approved by them before conducting the program. Uniformity of the intervention was maintained across all the institutes by keeping the number of sessions, presentations used to deliver the intervention, and the person conducting these sessions same at all the institutes to avoid proficiency bias. These sessions broadly covered the following:

1. In this session, the participants were told about mental and social changes taking place during adolescence. They were guided about the right sources of information on adolescent health issues. They were also free to submit anonymous questions in the question box
2. This session consisted of adolescent issues such as changing relationships, peer pressure, values and attitudes, decision-making, and proper communication
3. In the third session, the participants were introduced to the concept of body image and development of a positive body image. They were also explained the reproductive anatomy and physiology in both males and females and changes occurring during puberty
4. This session covered the physiology of menstruation, ways to maintain menstrual hygiene, common menstrual disorders, and seeking medical help. In addition, myths and misconceptions surrounding the topic were clarified
5. In this session, human reproduction was explained. The topics of contraception, legal age of marriage, and STDs including HIV-AIDS were also covered
6. In the last session, queries of the participants, common problems they faced, as well as their anonymous questions from the previous sessions were collectively answered.

A posttest was conducted 6 months later to assess the effectiveness of the intervention program. Data were entered in MS-Excel and analyzed using SPSS version 21 software (IBM). Qualitative data were analyzed using proportion and Chi-square test, whereas quantitative analysis was done using mean, standard deviation, median, and Wilcoxon test for comparing pretest and posttest median scores as the data were not normally distributed (Kolmogorov-Smirnov test,  $P < 0.001$ ). The knowledge, attitude, and menstrual practice scores before and after the intervention were depicted graphically using box plot. Significance level  $< 0.05$  was considered statistically significant.

## RESULTS

A total of 400 girls participated in the study. There were 100 participants each from the 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> academic standards from both English and vernacular (Marathi) medium. The mean age of the participants was 15.44 ( $\pm 1.33$ ) years; the minimum was 13 years, whereas the maximum was 18 years.

There was a significant improvement in knowledge and attitude regarding reproductive and sexual health as well as

menstrual practices [Chart 1]. Table 1 shows the median scores before and after the intervention and difference between the two. Tables 2-4 show the change in correct response to the knowledge, attitude, and practice questions before and after the intervention.

## DISCUSSION

Studies conducted in various parts of India have shown that carefully structured adolescent health education programs can cause significant improvement in the knowledge and attitude of adolescent girls regarding reproductive and sexual health.<sup>[12-14]</sup>

In this study, the knowledge of participants about pubertal changes, reproductive anatomy and physiology, and human reproduction was found to be poor in the pretest. In addition, very few participants knew of family planning methods and their easy availability. This paucity of knowledge was despite these topics being in their syllabus, clearly indicating social and cultural barriers to teaching these topics in school.<sup>[15,16]</sup> However, studies have shown that age- and sex-appropriate adolescent health education programs help fill the gaps in the knowledge of adolescents about their own bodies, reproduction, and contraception.<sup>[17,18]</sup> Most of the participants knew the modes of transmission of HIV-AIDS before intervention, which may be attributed to the wide awareness

created through mass media. However, their knowledge about testing and treatment of HIV and other STDs can be filled through health education programs.<sup>[13]</sup>

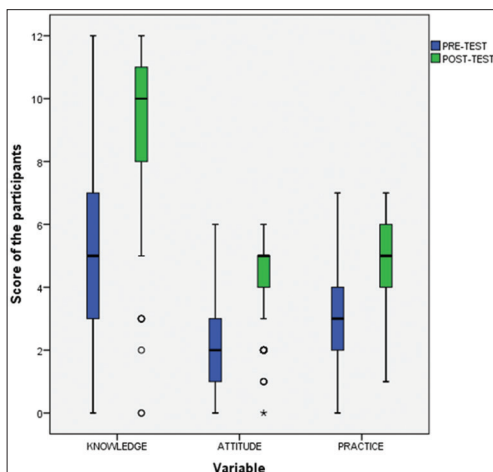
Apart from creating awareness, this study helped change the attitude of adolescent girls. There was increase in the number of participants who agreed that they should turn to reliable sources such as parents or teachers for advice on the matters of reproductive and sexual health. Moreover, after the intervention, majority of the participants said that they should talk openly about menstruation. This shows that participants were no longer looking at these topics as a social and cultural taboo. Overcoming this barrier is essential for them to seek appropriate help in times of need. Similar to another study, the number of participants who did not approve of premarital sexual relations increased significantly in our study, showing their ability to judge the consequences.<sup>[19]</sup> Our intervention also changed the attitude of the participants to adopting friendly behavior toward HIV-infected people instead of stigmatizing.<sup>[19]</sup>

Many studies have shown improvement in menstrual practices following intervention.<sup>[6,14,17]</sup>

In our study, significant improvement was seen in practices followed to maintain genital hygiene. The number of participants seeking medical care in case of menstrual disorders increased after the intervention. Similar improvement was observed in a study conducted in Belgaum.<sup>[17]</sup>

In this study, sanitary pad users increased significantly, whereas those using cloth as menstrual absorbents decreased after intervention. Majority of the participants stated high cost of sanitary napkins (54.28%) as the reason for not using them in the pretest followed by unavailability (22.85%) and social norms (22.85%). Despite these reasons, there was a significant rise in sanitary pad users. This may be because the girls must have understood the importance of menstrual hygiene, thus preferring sanitary napkins despite their high cost. Furthermore, the number of participants disposing off the used sanitary pads increased significantly following intervention. However, among those using cloth as menstrual absorbent, the correct practice of washing and sun drying the cloths was adopted by the participants after intervention. Similar results have been reported by other studies.<sup>[6,17]</sup>

The practice of social restriction and isolation during menstruation could not be altered much, indicating the deep-rooted social beliefs about menstruation which may take longer time to change. There was a small decrease among those following menstrual isolation as also seen in a similar study.<sup>[6]</sup> There were a few limitations of this study. As the study involved filling questionnaires themselves, the participants may have answered some questions in a manner they felt to be socially appropriate or ideal. Furthermore, considering the social and cultural sensitivity of the topic, the intervention and discussions were limited in accordance with the acceptability of the school/college authorities.



**Chart 1:** Effect of intervention on knowledge, attitude, and menstrual practice scores of the participants ( $n = 400$ )

**Table 1: Effect of intervention on knowledge, attitude, and practice median scores of the participants ( $n=400$ )**

Variable	Median score	IQR	Wilcoxon signed-rank test statistic (Z)	P
Pretest knowledge	5	3-7	-15.816	<0.0001
Posttest knowledge	10	8-11		
Pretest attitude	2	1-3	-15.347	<0.0001
Posttest attitude	5	4-5		
Pretest practices	3	2-4	-14.898	<0.0001
Posttest practices	5	4-6		

IQR: Interquartile range

**Table 2: Change in correct response to questions testing knowledge before and after intervention (n=400)**

Question number	Questions	Pretest (%)	Posttest (%)	P
1	Rate of pubertal changes varies between individuals	114 (28.5)	294 (73.5)	<0.0001
2	Pubertal changes result from change in hormones	157 (39.3)	311 (77.8)	<0.0001
3	Female reproductive tract consists of ovaries, uterus, and vagina	141 (35.3)	323 (80.8)	<0.0001
4	Uterus is the source of menstrual blood	103 (25.8)	310 (77.5)	<0.0001
5	Fertilization is the union of sperm and ovum to form zygote	167 (41.8)	344 (86.0)	<0.0001
6	Onset of menstrual cycles and sexual intercourse are both necessary for pregnancy	222 (55.5)	340 (85.0)	<0.0001
7	Condoms, Copper-T, and birth control pills are used as contraceptives for family planning	128 (32.0)	271 (67.8)	<0.0001
8	Doctor's prescription is not necessary for obtaining contraceptives	68 (17.0)	180 (45.0)	<0.0001
9	HIV-AIDS is spread by sexual contact and blood transfusion	295 (73.8)	316 (79.0)	0.08
10	A person with HIV cannot be identified by physical appearance	169 (42.3)	381 (95.3)	<0.0001
11	HIV-AIDS cannot be cured	243 (60.8)	378 (94.5)	<0.0001
12	Legal age for marriage for girls in India is 18 years	352 (88.0)	362 (91.8)	0.07

**Table 3: Change in correct response to attitude questions before and after intervention (n=400)**

Question number	Questions	Pretest (%)	Posttest (%)	P
1	Parents or teachers should be consulted on the matters of reproductive and sexual health	137 (34.3)	217 (54.3)	<0.0001
2	Girls should talk openly about menstruation	97 (24.3)	298 (74.5)	<0.0001
3	Having sexual relations is not the correct way of expressing love before marriage	122 (30.5)	355 (88.8)	<0.0001
4	Girls should have knowledge about sex	150 (37.5)	171 (42.8)	0.130
5	Family planning is an important aspect of life	208 (52.0)	325 (81.3)	<0.0001
6	A person who gets HIV should not be removed from school/office	213 (53.3)	388 (97.0)	<0.0001

**Table 4: Change in correct response to questions on menstrual practices before and after intervention (n=400)**

Question number	Questions	Pretest (%)	Posttest (%)	P
1	Private parts are cleaned every time after using toilet	119 (29.8)	294 (73.5)	<0.0001
2	Only water is used for cleaning private parts	86 (21.5)	241 (60.3)	<0.0001
3	Hair in private parts are cut regularly	160 (40.0)	289 (72.3)	<0.0001
4	A doctor is consulted in case of any menstrual abnormality	162 (40.5)	201 (50.3)	0.006
5	Number of sanitary pad users	260 (65.0)	365 (91.3)	<0.0001
6	Disposal of sanitary pads into dustbin	153 (58.8)	348 (95.3)	<0.0001
7	Number of cloth users	140 (35.0)	35 (8.7)	<0.0001
8	Menstrual cloths dried in sunlight	29 (20.7)	30 (85.7)	<0.0001
9	Sanitary pads/cloths changed at school	116 (29.0)	257 (64.3)	<0.0001
10	Do not follow isolation during menstruation	324 (81.0)	333 (83.3)	0.406

## CONCLUSIONS

The pretest knowledge and attitude of the participants regarding reproductive and sexual health and menstrual practices were poor for majority of the participants, and the intervention program resulted in substantial improvement in the same. Adolescent health education should be an inevitable part of the school/college curriculum and be taken up by trained teachers, counselors, or health-care personnel. Age-appropriate scientific material on adolescent health, books, and videos that are preferably in regional languages should be made available in the library so that they are not misguided by any unreliable sources of information. Age- and sex-appropriate health education programs can facilitate the development of healthy reproductive and sexual behavior patterns among adolescents through enhancement of knowledge and development of right attitude.

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## Conflicts of interest

There are no conflicts of interest.

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