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Improving Sexual and Reproductive Health of Female Adolescents in Bangladesh by Providing Information and Services

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Abstract

There are 14 million female adolescents in Bangladesh. Half of them aged 15-19 years are married. A large majority of adolescents are ignorant about sexuality, contraception, sexually transmitted infections (STIs) and HIV and AIDS. Attempts to address the needs of the adolescents through the existing health and education systems have so far been inadequate despite relevant policies have been in place. The country is facing the challenge of implementing the policies in an effective manner. This study was carried out to assess the feasibility of providing sexual and reproductive health (SRH) information and services, and to assess its impact on knowledge, attitude and service utilization. A quasi-experimental design with pre-post measurements was used. Interventions included training of teachers, facilitators, and service providers for providing SRH information and services to adolescents in schools, communities, and health facilities respectively. Interventions resulted in a significant increase in the level of SRH knowledge among adolescents compared to the control site. Adolescents who were exposed to the interventions showed more favorable attitudes towards use of health facility for contraceptives services and use of condom by unmarried sexually active adolescents than the non-exposed in the experimental sites. This was also translated into the increased use of health facilities for SRH services.

Keywords

Adolescent, sexual and reproductive health, adolescent-friendly services, education program

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Introduction

In Bangladesh, female adolescents represent approximately 22 percent of the total female population (63 million), and approximately 39 percent of the female population is below the age of 15 years (Bangladesh Bureau of Statistics, 2003). Alarmingly, about half of the female of 15-19 age group are married although the legal age at marriage is 18 years for females (Bangladesh Bureau of Statistics 2003; Amin et al 2002). Consequently, married female adolescents have little say about family planning, the timing and terms of sexual intercourse with their husbands and they are also under pressure to prove their fertility by having children as soon as possible (Rob and Piet-Pelon 2001). As a result, Bangladeshi women have a pattern of early childbearing. Adolescent fertility is 135 births per 1000 women below age 20 (NIPORT, Mitra and Associates, and ORC Macro 2004). The current use of any family planning methods is also as low as 29 percent among married female adolescents while the national level of contraceptive prevalence rate is 58 percent among women of reproductive age (NIPORT, Mitra and Associates and ORC Macro 2004). As such, adolescent fertility continues to contribute to the population momentum. Early marriage leads to severe consequences like maternal deaths for which adolescent pregnancy related mortality ratio for mothers aged 15-19 is 221 per 100,000 live births (NIPORT and ORC Macro 2002). About one-fifth of adolescent mothers do not have any knowledge about lifethreatening conditions during pregnancy, and 92 percent of mothers aged less than 20 years deliver at home (NIPORT, Mitra and Associates and ORC Macro 2004). Knowledge of at least two modern contraceptive methods of ever-married female adolescents is about 86 percent and the unmet need for contraception among female under age 15 is 23 percent (NIPORT, Mitra Associates and ORC Macro 2004). Female adolescents are also more likely than older women to have unsafe induced abortion, which at times life threatening (Kabir 1999).

Studies show that a large majority of female adolescents (both married and unmarried) do not have information on sexuality, contraception, or STIs, HIV and AIDS (Barkat et al. 2000; Nahar et al. 1999; Haider et al. 1997). The effects of globalization, rising age at marriage, rapid urbanization and greater opportunities for socialization in Bangladesh have heightened the risk of STIs including HIV and unwanted pregnancy among adolescents. Nevertheless, SRH education has not been a part of the education curriculum, and the existing service delivery system is not catering the broader needs of adolescents. Even though adolescents typically have unmet needs for SRH information and services, their SRH needs do not draw the attention of parents, schools or the existing health care systems.

In the recent past Government of Bangladesh has recognized the importance of SRH needs of adolescents and thus gradually taking positive steps to address the information and service needs of adolescents. In the *Population Policy 2004* importance has been given to the adolescents by emphasizing delaying age at marriage, postponing first birth, spacing between children, and access to SRH education for preventing STIs and HIV infection. In the *National Education Policy 2000*, adolescents aged 15-19 years got special attention. The *National Youth Policy 2004* specially refers to skill training, livelihood opportunities, and empowerment of youth. The *National HIV/AIDS and STD Policy 2000* emphasizes the incorporation of HIV and AIDS, and STD issues in the regular school curriculum and also in non-formal education. The *National SRH Strategy 1997*, which basically focused on providing and ensuring services with special emphasis to adolescent girls. In *National Strategy for Maternal Health 2001*, issue of 'early marriage and early pregnancy' is identified as one of the major causes of high maternal mortality/morbidity. Thus, all the policies and strategies are in place but the country is facing the challenges of translating these policies and strategies into action.

Considering the need for SRH education and services for adolescents, the Frontiers in Reproductive Health program of the Population Council, Dhaka implemented an operations research (OR) project in northwestern part of Bangladesh, in collaboration with Urban Family Health Partnership (UFHP) and its three non-governmental service delivery partners to investigate the feasibility and effectiveness of improving SRH of adolescents aged 13-19 years by providing SRH information and making health services more accessible to them. The study began in November 1999 and was completed in August 2003.

Objectives

The overall objective of this study was to foster a supportive environment to address the problem of adolescents aged 13-19 years by making existing health services more accessible to them and providing them with SRH information that will enable them to manage their sexual and reproductive health. The specific objectives of the operations research were to:

- Improve SRH of female adolescents by providing information and adolescent friendly services
- Improve SRH knowledge and attitudes, and increase utilization of SRH services for both married and unmarried female adolescents
- Assess the effect of an adolescent SRH education intervention on adolescent SRH knowledge, attitudes and SRH services utilization

Study Design

A quasi-experimental design, with pre-post measurements was used. Three sites were selected for the study: two for experiment and one for control. The experimental sites received interventions at three levels: community, school and health facility. In the community component out-of-school adolescents were addressed along with the gatekeepers (parents, teachers, religious leaders and community leaders) while in school component students of classes VIII and IX were targeted. In health facilities adolescent friendly services were made available. The control site received no interventions. The three project sites were selected from three urban areas with similar socio-cultural characteristics. The study was designed to measure the diffusion of SRH information among the adolescents in the whole community at large, thus the respondents of baseline and endline survey were selected randomly from the household rather than from those who received SRH interventions.

Data collection: First of all, a household enumeration survey was conducted to collect necessary information from the households to prepare the sampling frame for conducting baseline and endline surveys as well as for subsequent interventions. The enumeration survey identified 25,977 households which had at least one female adolescent of 10-19 years old. Baseline data were collected from gatekeepers (parents, teachers, religious leaders and community leaders) through 12 focus group discussions (FGDs), and from 2971 adolescents through one-to-one interviews. FGDs were conducted only in experimental sites for understanding the prevailing adolescent SRH issues in the local socio-economic and cultural context for designing appropriate interventions. During the intervention period, monthly service statistics were collected to assess the increase of service utilization. After 18 months of interventions, endline survey was conducted among 3102 adolescents. At the endline survey, as the sampling frame was two years old, an operational frame for the target group (13-19 years) was prepared by excluding those aged 18-19 years during baseline survey. Similarly, adolescents who were 11-12 years old during the baseline survey were included in the sample frame.

Data analysis: Quantitative and qualitative techniques were employed. Bivariate and multivariate analyses were carried out with quantitative data while theme based analysis was done with qualitative data. The bivariate analyses compare the characteristics of study participants by sites and survey period, and also compared baseline and endline levels of self-report of exposure to

intervention, knowledge, attitudes and practices on different SRH issues within sites, and between experimental and control sites. Multivariate analysis was carried out for comparing changes in outcomes over time in the experimental site with the changes in outcomes over time in the control site while controlling for the background variables such as number of years of schooling, age, marital status, and experience of working for pay. Multivariate analysis was also done for comparing the adjusted and unadjusted estimates of the odds of favorable attitudes to each of SRH issues among those who were exposed to the SRH intervention compared to those who were not exposed to the SRH intervention in experimental site.

Interventions

There were six types of interventions in experimental sites, such as a) sensitizing gatekeepers; b) training of teachers, facilitators, health ambassadors (peers), and service providers; c) imparting SRH information; d) providing adolescent-friendly services; e) promoting awareness through behavioral change communication (BCC); and f) linking schools, community, and health facilities.

Sensitization of gatekeepers: Formal and informal sensitization meetings were conducted among

gatekeepers (parents, teachers, religious leaders, community leaders and service providers) about SRH needs of adolescents and for fostering a supportive environment which would allow adolescents to receive SRH information and services. A total of 488 sensitization meetings were organized. FGD findings were used in sensitization meetings which demonstrated that

Box 1. FGD Findings: Gatekeepers recognize the need for SRH education

- Parents approved providing SRH information because it is difficult for them to discuss SRH issues with their children
- Parents opined SRH information must be included in school and *Madrasah* curricula
- Religious and community leaders believed that risk-taking behavior would decrease if adolescents had correct SRH information
- Almost all the gatekeepers believed that SRH information should be started in school from the eighth grade

almost all the gatekeepers recognized the necessity of SRH education (Box 1).

Training of teachers, facilitators, health ambassadors, and service providers: A SRH

curriculum was developed with the active participation of teachers, program managers and adolescents. The topics of the curriculum were identified on the basis of findings of the FGDs among gatekeepers and the baseline survey among adolescents. The topics were pubertal changes and hygiene, gender, family planning methods, reproductive tract infections (RTIs), STIs, HIV and AIDS, consequences of early marriage, pregnancy care, and child birth process. To reduce the sensitiveness of SRH issues, the curriculum incorporated poems, stories, riddles and quizzes. Every session began with a poem, which portrayed the theme of the whole session and the whole text was narrated in a story. Moreover, the curriculum was equipped with didactic and participatory learning techniques by introducing brainstorming, skits, questions-answers, conversation and using note-slips in every session to help teachers and facilitators make the sessions participatory and lively. Education experts, adolescents, program managers and health personnel reviewed the draft curriculum.

Nineteen willing and enthusiastic female teachers from eight secondary schools were trained for five days on newly developed SRH curriculum followed by refresher training on pedagogical techniques after six months to conduct SRH sessions among in-school adolescents of classes VIII and IX.

In the community, eight female youths were recruited as "facilitators" and trained on SRH curriculum for educating out-of-school adolescents of age 13-19 years on SRH issues. The community facilitators attended a five-day training course followed by a four-day refresher

training given after five months. During the refresher training, the facilitators shared their experiences and modified their work plan, originally developed at the beginning of the project to implement the activities. The community facilitators received supportive supervision from the health facility staff to improve their pedagogical facilitation skills.

In addition, 25 peer educators as health ambassadors were selected from eight schools approximately one peer educator for 50 students in each school. Similarly, 40 peers were selected from out-of-school adolescents. The peers received four days of training to learn about the problems faced by their peers and addressed those SRH issues through drama and cultural show. The training also included when a peer needs counseling and where to refer the peers for SRH problems.

At the health facility level, clinical service providers were trained on being welcoming, maintaining non-judgmental attitudes, and offering minimal waiting time, privacy, confidentiality and affordable services. At the same time non-clinical service providers of the clinics were oriented on adolescent SRH service needs and friendliness of services. A total of 45 service providers were trained by the project. All the teachers, facilitators and service providers were equipped with education aid such as flipchart.

Imparting SRH information: SRH curriculum had 17 sessions with each of 45 minutes duration. Sessions were conducted in schools once a week spread over the whole year considering school holidays, examinations, and teachers' strike. In the community, each facilitator conducted at least one session per day for one hour. They were also responsible for organizing the adolescents for SRH session, which was done by conducting sensitization meetings with parents and elders. The responsibilities of health ambassadors included providing SRH messages including counseling to their peers, informing adolescents about the adolescent friendly services offered by the clinics, and organizing quiz competitions, dramas, games, cultural show, discussion sessions on special days related to population and health. A total of 6002 out-of-school and 1500 in-school adolescents received SRH education course from facilitators and teachers respectively.

Providing adolescent friendly services: Adolescent friendly services were rendered during normal clinic hour. The range of services provided was the government essential service package (ESP) that included family planning services, RTI/STI (diagnosis and treatment), tetanus toxoid (TT) vaccination, antenatal and postnatal services and other SRH services related to pubertal events. These services were provided to adolescents from 30 health facilities. To make services affordable, adolescents who had attended sessions received a health scheme card from implementing agency for consulting doctors with free of charge for one year. A total of 4,443 visits made by adolescents including repeated visits for services at the health facilities.

Promoting awareness through BCC: To foster a supportive environment and enhance the access to SRH information and services, different approaches were used which included development of brochures, organizing dramas, skits and cultural show. Four brochures entitled "Parents' responsibility towards adolescents'; A few words on menstruation'; 'A few words on RTI/STI', and 'Availability of adolescent friendly services' were distributed among adolescents, parents, teachers, service providers, clinic attendees, peer educators, and facilitators. A total of 17,973 copies of brochures were distributed. Peer educators from the community and schools organized a cultural show where both in-school and out-of-school adolescents performed dramas and presented songs and poems on issues covered in the SRH curriculum. They also observed AIDS Day and Population Day, and organized drama groups and performed six open stage or street drama in community and schools.

Linking schools, community, and health facilities: A linkage was established between health facilities, school and community after implementing the SRH program. Facilitators and teachers

informed the adolescents about the availability of the health facility based services during their SRH sessions. They also referred out-of-school and in-school adolescents from community and schools to the health facility when they needed. The health facility staff of non-governmental service delivery partners visited community and schools for monitoring SRH sessions and also informed adolescents about availability of health facility based services. In addition, health ambassadors from community and school referred adolescents to the health facility. Moreover, these health ambassadors worked together to organize out door activities. All these activities helped establish the linkages between community, schools and health facility. As a result of the SRH program and linkages, adolescents received support from school, community and health facilities, which ultimately resulted in creating an overall enabling environment for adolescents for seeking SRH services at the health facilities.

Findings

Background characteristics: The female adolescents had similar age distribution in the baseline and endline surveys for both experimental and control sites with almost the same mean age of about 16 years. There was no marked variation in current schooling status between baseline and endline surveys across the sites. The mean number of years in schooling was around eight across experimental and control sites and both in baseline and endline surveys. Regarding marital status, only 11-17 percent girls were married across sites in two time points and endline survey included more married girls than the baseline survey but the differences were not significant. Over 12 percent of girls were engaged in income earning activities across the sites. In experimental site, endline survey found significantly more working females compared to baseline survey. Bangladesh is predominately a Muslim country, and more than 91 percent of the respondents in the study sites reported their religion to be Islam (Table 1).

	Experimental		Control	
	Baseline Percent/mean	Endline Percent/mean	Baseline Percent/mean	Endline Percent/mean
13-14 years	31.5	30.2	34.0	29.7
15-16 years	31.6	29.7	29.3	31.8
17-19 years	37.0	40.1	36.7	38.5
Mean age in years	15.7	15.8	15.6	15.8
Currently attending school	69.2	70.7	77.3	73.3
Mean number of years in school	7.6	7.6	7.7	7.8
Married	15.5	17.2	10.8	14.6
Working	13.5	19.1**	12.4	14.5
Islam religion	93.3	94.5	91.4	91.7
Ν	944	1003	491	509

Table 1 Background characteristics of female adolescents by sites and time of interviews

Significant at ** p<0.01

Exposure to SRH education intervention: Only 23 percent of female adolescents reported that they received SRH education either from teacher or facilitator or peer. Thus, the results are to be

interpreted with caution as they are based on a random sample of adolescents from households rather than from the schools providing SRH education or the community where facilitators conducting SRH sessions, and also peer educators in school and community which were introduced in the later part of the project for complementing the teachers and facilitators' work.

SRH knowledge: Knowledge on different SRH issues significantly increased among the endline female adolescents compared to their baseline counterparts within site except the knowledge of fertile period among female adolescents of control site. Regarding the level of knowledge of at least three modes of transmission of HIV over the period, significant changes observed across experimental and control sites from baseline to endline survey. The transmission routes cited by the respondents were 'transmission through sexual act', 'mother to child', 'unscreened blood transfusion', and 'use of unsteriled needles.' Comparing the changes between experimental and control sites, it was observed that significantly (p<0.01) higher change was experienced in experimental site than control. For assessing knowledge of fertile period, the respondents were asked 'when during the month a woman is most likely to get pregnant if she has sexual intercourse', and the correct answer was recorded as 'middle of two menstrual cycles'. The knowledge of contraceptive methods increased significantly from baseline to endline survey, but the control site experienced greater changes than experimental site. Regarding potential health risks of teen pregnancy, the knowledge was measured by two variables: awareness of any potential health risks of teen pregnancy; and adolescents' ability to cite at least three potential health risks related to teen pregnancy. During the endline survey 90-99 percent of female adolescents at experimental and control sites were aware of potential health risks of teen pregnancy compared to 67-94 percent in baseline survey (not shown). The risk factors cited by female adolescents were 'labor could be obstructed', 'mother's life is under risk', 'risk to baby's life', 'mother could give premature birth', 'risk to miscarriage', 'eclampsia of mother', 'give birth under weight baby', 'mother could become anemic', and 'the delivery labor could be prolonged'. It was found that any three of the above risks cited by the respondents were significantly (p<0.01) higher in endline survey than the baseline both in experimental and control sites. Comparing changes between the experimental and control sites over the period, contrary to our expectation it was observed that the level of knowledge of at least three potential health risks of teen pregnancy among female adolescents was higher in control than the experimental site (Table 2).

Attitude towards SRH issues: During endline survey, respondents were asked whether they thought they would be treated in a respectful manner if they sought contraceptives services from a health facility or pharmacy. The overall perception about receiving respectful contraceptive services did not exceed nine percent for any site. This may indicate very conservative attitudes about obtaining these services, or possibly, a realistic assessment and an awareness of the strong cultural taboos against unmarried young women seeking contraceptive services. When asked whether unmarried sexually active adolescents should use the condom to prevent pregnancy or infection, interestingly over three-fourth female adolescents agreed on use of condom by unmarried sexually active adolescents across experimental and control sites (Table 3).

	Experimenta Baseline	al Endline	Control Baseline	Endline
Knowledge of at least three routes of transmission of HIV	12.2	45.8**	13.5	39.3**
Knowledge of fertile period	7.7	14.5**	8.0	7.0
Knowledge of at least two modern contraceptive methods	53.2	71.4**	37.1	59.5**
Knowledge of at least three potential health risks of teen pregnancy	20.2	25.6**	22.2	33.0**
Ν	944	1001	491	509

Table 2 Percentage of female adolescents with knowledge of HIV, fertile period, contraceptive methods, and health risks of teen pregnancy by sites and time of interviews

Significant at ** p<0.01

Table 3. Percentage of female adolescents in the endline survey by their opinion on use	of
nealth facilities and use of condom by sites	

Issues	Experimental	Control
Use of health facility and pharmacy for contraceptive serve	ices	
Favorable attitude toward contraceptive services from a health facility	8.5	9.0
Favorable attitude toward contraceptive services from a pharmacy	6.6	7.9
Use of condom by unmarried sexually active adolescents		
Agreed on use of condom by unmarried sexually active adolescents for preventing pregnancy	80.4	82.3
Agreed on use of condom by unmarried sexually active adolescents for preventing infections	78.5	79.6
Ν	1003	509

Service utilization: Service statistics were collected six month prior to the introduction of the interventions and throughout the intervention period at the participating health facilities. Before intervention comparatively more adolescents visited the control site than the experimental. During intervention period, number of female adolescents increased substantially in experimental site, which is 3.7 times higher than the control site (Figure 1). Half of the female adolescents in the experimental site who received SRH services were unmarried and about one-third were in school. Female adolescents sought mainly tetanus toxoid vaccines (52 percent). Other



services received included antenatal and postnatal care (22 percent), family planning (14 percent), RTI/STI services (15 percent), and menstruation related problems (not shown).

Findings from the endline survey suggests that significantly (p<0.05; p<0.01) higher proportion of female adolescents of experimental site who visited the health facility reported affirmatively regarding discussion on all their discomforts, maintenance of auditory and visual privacy during consultation and also the maintenance of confidentiality of the information provided to the service provider than their respective control site counterparts. Lower proportion of female adolescents of experimental site who visited the health facility mentioned that they did not have to wait long before getting any services than their respective control site attendees (Table 4).

Issues related to adolescent friendly services	Experimental	Control
Comfortable enough to clarify all the discomforts	91.2*	84.7
Enough auditory privacy during consultation	85.4**	48.9
Enough visual privacy during consultation	85.7**	44.4
Felt confident about disclosure of services received	84.7**	59.8
Had to wait long before getting any services	27.6**	54.2
Ν	294	154

Table 4.	Percentage	of female a	dolescents in	the endline	survey b	y their	opinion a	about
the servi	ces provided	at the hea	lth facility					

Significant at * p<0.05; ** p<0.01.

Multivariate results: To measure the net effect of interventions, the changes in knowledge outcomes over time in the experimental site compared with the changes in knowledge outcomes over time in the control site, and the difference of improvements were significantly greater in the experimental site than in the control site except for the change in knowledge of modern contraceptive methods and potential health risks of teen pregnancy. It was also found that in the experimental site, the unadjusted and adjusted estimates of effects of time on each of the two

Table 5. Adjusted and unadjusted odds ratios for selected variables associated with the interaction term of time and experimental groups regarding respondents' knowledge of SRH issues

Variable	Adjusted Odds Ratios	Unadjusted Odds Ratios
Knowledge of at least three mo	des of transmission of HIV	
Experimental sites at endline survey	1.57**	1.47*
Knowledge of fertile period		
Experimental sites at endline survey	2.47***	2.26***
Knowledge of at least two mod	ern contraceptive methods	
Experimental sites at endline survey	0.91	0.88
Knowledge of at least three po	tential health risks of early pr	egnancy
Experimental sites at endline survey	0.80	0.79

*Significant at p<0.10; ** p<0.05; *** p<0.01.

Table 6. Adjustee	and unadjusted odds ratios associated with SRH intervention exposure	
and attitude of r	spondents on different SRH issues in experimental site at endline survey	

Variables	Experimental group	
	Adjusted Odds Ratios	Unadjusted Odds Ratios
Favorable attitude to	wards health facility for contraceptives	
SRH intervention exp	oosure	
No (r)		
Yes	2.54***	2.30***
Favorable attitude to	wards pharmacy for contraceptives	
SRH intervention exp	oosure	
No (r)		
Yes	1.54	1.49
Agreed with use of co	ondom to prevent pregnancy by unmarr	ied sexually active adolescents
SRH intervention exp	oosure	
No (r)		
Yes	1.67**	1.50**
Agreed with use of co	ondom to prevent infections by unmarri	ed sexually active adolescents
SRH intervention exp	oosure	
No (r)		
Yes	1.85***	1.63**

Significant at * p<0.10; ** p<0.05; *** p<0.01. (r)= Reference category.

outcome knowledge had odd ratios greater than 1, with the adjusted estimates larger than the unadjusted estimates (Table 5). Thus, in experimental site for each of the two outcomes (fertile period and transmission of HIV), respondents at endline had higher level of knowledge than respondents at baseline.

Table 6 shows the adjusted and unadjusted estimates of the odds of favorable attitudes to each of SRH issues among those who were exposed to the SRH intervention compared to those who were not exposed to the SRH intervention in experimental site. Respondents at the endline who were exposed to the intervention were more likely than those not exposed to report favorable attitude towards: a) health facilities as a source of contraceptives; b) pharmacies as a source of contraceptives; c) use of condoms by unmarried sexually active adolescents to prevent pregnancy; and b) use of condoms by unmarried sexually active adolescents to prevent STIs.

Conclusions

The study findings show that teachers and facilitators were effective in providing SRH information to adolescents contrary to the common belief that teachers and elders are not the right persons for providing SRH information to adolescents. The authentic sources of SRH information such as teachers and elders influenced in creating positive attitudes among adolescents toward health facility based services as a source of contraceptive supplies as well as utilization of health facilities for SRH services. 'Privacy' and 'less waiting time' are the determinants of SRH service utilization by adolescents. The study findings also provide strong evidence for the need of targeted SRH education among adolescents, as the fewer adolescents are aware of SRH issues. Female adolescents were also found to be progressive user of condoms by unmarried sexually active adolescents for safe sex practices. The Bangladesh government should take steps to use its huge education and health infrastructures for imparting SRH information and services by equipping provider of services to effectively impart SRH information and services to adolescents. The government is also implementing safe motherhood program through health and family planning infrastructure. Findings suggest that a small proportion of adolescents were aware about risk associated with teen pregnancy. So the government should take necessary steps to include these female adolescents (who will be the mother in future) in its safe motherhood program. Similarly, opportunity also exists in terms of promoting and distributing condoms for HIVand STD, and family planning programs since nearly three-fourths of the adolescents had favorable attitudes towards condom use for preventing pregnancy as well as infections.

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