Strategies to Improve Reproductive Health Services for Adolescents in Bangladesh: A Worksite Study

Nafisa Lira Huq
Fariha Haseen
M.A. Quaiyum
Quamrun Nahar
Charles P. Larson

ICDDR,B: Centre for Health and Population Research
Mohakhali, Dhaka 1212, Bangladesh

May 2005

ICDDR,B Working Paper No. 165

Edited by: M. Shamsul Islam Khan

Desktop Publishing: Jatindra Nath Sarker
Manash Kumar Barua

ISBN: 984-551-268-2

ICDDR,B Working Paper No. 165

Published by
ICDDR,B: Centre for Health and Population Research
Mohakhali, Dhaka 1212, Bangladesh
Telephone: (880-2) 8811751-60 (10 lines); Fax: 880-2-8811568
E-mail: msik@icddrb.org
URL: http://www.icddrb.org

Printed by: Sheba Printing Press, Dhaka

Acknowledgements

This publication was made possible through support provided by the U.S. Agency for International Development (USAID), Dhaka, Bangladesh Mission, under the terms of the Cooperative Agreement No. 388-A-00-97-00032-00 with ICDDR,B: Centre for Health and Population Research. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID. ICDDR,B acknowledges with gratitude the commitment of USAID to the Centre's research efforts.

Acronyms

AFS	Adolescent-friendly Services
AIDS	Acquired Immunodeficiency Syndrome
ARH	Adolescent Reproductive Health
BCC	Behaviour Change Communication
BCCP	Bangladesh Center for Communication Programs
BDHS	Bangladesh Demographic and Health Survey
BRAC	Bangladesh Rural Advancement Committee
CM	Community Mobilizer
CWFD	Concerned Women for Family Development
ESP	Essential Services Package
FAQ	Frequently-asked Questions
FHRP	Family Health Research Project
GoB	Government of Bangladesh
HIV	Human Immunodeficiency Virus
HSID	Health System and Infectious Diseases Division
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
MC	Modern Contraceptive
MOHFW	Ministry of Health and Family Welfare
NGO	Non-governmental Organization
NSDP	NGO Service Delivery Program
OCP	Oral Contraceptive Pill
RHE	Reproductive Health Education
RSDP	Rural Service Delivery Partnership
SMC	Social Marketing Company
ST	Skill-training
STI	Sexually Transmitted Infection
STD	Sexually Transmitted Disease
TT	Tetanus Toxoid
TV	Television

Contents

	Page
Summary	7
Introduction	9
Objective	11
Methods	11
Results	17
Discussion	23
Conclusions	26
References	27

Tables

Table 1.	Demographic characteristics of respondents	18
Table 2.	Status of modern contraceptive use among married respondents	19
Table 3.	Knowledge about fertility risks	19
Table 4.	Knowledge about name of contraceptive methods	20
Table 5.	Knowledge on sexually transmitted infections	20
Table 6.	Knowledge about transmission and prevention of HIV/AIDS	21
Table 7.	Knowledge scores relating to modern contraceptives and STI/HIV/AIDS	22

Summary

The adolescent population of Bangladesh has generally a poor understanding of sexual and reproductive health. This is associated with early marriage, adolescent pregnancy, and increasing occurrences of high-risk sexual practices. The 1995/96 Labour Force Survey reported that 2.3 and 2.4 million females, respectively, in the age groups of 10-14 years and 15-19 years were in the labour force in Bangladesh. The garment sector, one of the largest manufacturing industries of Bangladesh, employs about 1.2 million workers, of which 40% are young females. An ICDDR,B study found that 59% of adolescent boys from urban slums worked for money, and 36% living in non-slum areas were involved in earning. Twenty-seven percent of adolescent girls living in urban slums were employed; most of them were housemaids and garment workers. Considering this large number of adolescents in the labour force in Bangladesh, a worksite intervention was identified as a practical approach to reaching and educating working adolescents. Although very limited evidence was found about the effectiveness of a peer approach in the worksite, studies in other settings presented peer groups as an acceptable channel for information dissemination. The ICDDR,B, therefore, undertook a study of adolescents working in garment factories using the peer approach to address issues of early marriage, early fertility, and the emergence of the HIV/AIDS epidemic in Bangladesh.

The objective of the study was to test a peer-education strategy, supported by information materials, to improve knowledge about reproductive health issues and increase the use of reproductive health services by urban adolescents working in the garment sector.

It was a quasi-experimental in design, pre- and post-intervention cross-sectional survey planned to measure the effects of the intervention. Working adolescent females were assigned to one of three groups: Group A received 'education plus adolescent-friendly services', Group B received 'only education', and Group C served as controls. Peer educators were trained to disseminate information to adolescent workers. Three booklets that focused on (i) normal sexual maturation, (ii) marriage and family planning, and (iii) STIs/HIV/AIDS were distributed.

Results of the baseline survey showed that 36% of female workers were married, 45% were married at the age between 13 and 15 years, and other half between 16 and 19 years. Nearly half of married workers were using modern contraception. Only 7.4% could identify the period of fertility in menstrual cycle, but they were knowledgeable about family-planning methods. Sexually transmitted infections-related knowledge was limited to AIDS only. Workload in the worksite and traditional concern for adolescent reproductive health among older employees were the greatest hindrances to implement the intervention at worksite. Peer educators were not acceptable to other peers; the reasons were low status and same educational level of peer educators. Follow-up of the same group for the planned 18 months was not feasible due to a high turnover of workers from one factory to another.

For the successful implementation of adolescent reproductive health programmes in a worksite, the challenges to be anticipated include attitudes and support of the garment factory management and the influence of older or non-participating employees. No evidence was found in support of a peer approach, and low rates of participation and interest in this approach put its feasibility in question. Shorter-term, less-disruptive strategies may prove to be more practical.

Introduction

In Bangladesh, adolescents represent over 20% of the total population. Early fertility and the emergence of the HIV/AIDS epidemic are two of the leading adolescent health concerns in Bangladesh. The age-specific fertility rate among this group is high, i.e. 144 births per 1,000 female population aged 15-19 years. Furthermore, 35% of women, aged 15-19 years, have begun childbearing (1). The social context of Bangladesh disregards sexual relationships outside marriage, which leaves the impression that premarital sexual relationships are unlikely among adolescents. A survey completed by the Population Council, Bangladesh shows that this assumption may be incorrect as over 40% and 20% of urban and rural males respectively are sexually active prior to marriage or before the age of 19 years (2). The prevalence of sexually transmitted diseases (STDs) is mainly determined by high-risk sexual behaviours. The information given in the above study is alarming and has direct relevance to the emergence of HIV/AIDS in Bangladesh. Also, the risk among youths for HIV/AIDS is reflected in data of the national HIV surveillance, which reports that 55% of patients with sexually transmitted infections (STIs) identified were aged less than 24 years (3).

The recent adolescent surveys, conducted by ICDDR,B and other organizations in Bangladesh, have consistently documented generally poor knowledge of sexual and reproductive health among adolescents. Furthermore, 'what is known' is often incorrect and derived through communication with friends who are equally unknowledgeable (2,4-6). An ICDDR,B study has documented that adolescents rarely discuss sexual and reproductive issues with their parents or teachers. The findings of this study showed that adolescents in Bangladesh live in a community which hold traditional beliefs and practices that still restrict the discussion and flow of accurate reproductive health information in the household, the community, and schools. Access to accurate information on key reproductive health issues, such as reproductive physiology, sexuality, family planning, and STDs, is severely restricted at all levels. Booklets and magazines though available in the market contain inadequate and misleading information on these topics.

Bangladesh has recently enacted a child-labour legislation specially applicable for the garment industry of Bangladesh. Nonetheless, children are entering the labour force both in informal and formal sectors during early and late adolescence. According to the Labour Force Survey of 1995/96, there were 2.3 and 2.4 million females, respectively, in the age groups of 10-14 years and 15-19 years in the labour force in Bangladesh (7). An ICDDR,B study found that 59% of urban slum adolescent boys worked for money, and 36% non-slum adolescent boys were involved in earning. Twenty-seven percent of urban slum adolescent girls were employed, but most of them as housemaids and garment workers (4). Nowadays, the garment sector, the largest manufacturing industry in the country, has created a new arena for employment of females. This sector employs about 1.2 million workers, of which 90% are females and typically young, single, and recent arrivals from poor rural areas (7).

In the worksite, adolescent girls have long-working hours that usually start at 8 am and end at 5 pm. Sometimes, the working hours are extended up to 10 pm due to work overload, which means that they remain much of their time away from their families and rarely find time to attend to their health and recreational needs. Despite these shortcomings, they are achieving some economic and social autonomy through employment. This gives them the opportunity to delay marriage and to make their own decisions about their future. One study conducted among garment workers of Bangladesh compared women in terms of their marital status. The study found that a higher proportion of workers were single compared to non-workers. In such a setting, adolescent girls experience a different kind of adolescence.

There is very limited evidence about premarital sexual activity among single female workers. Health providers, in a recent study, mentioned that garment workers might be pressurized to have sexual activity outside marriage. They dealt cases where single garment workers were concerned about pregnancy for irregular menstruation. For female garment workers, it is not unlikely to become exposed to the risk of sexual activity at workplace where they spend long hours without their guardians. Additionally, this long-working hour prevents them from availing of information on this issue (8).

A worksite intervention might be a practical approach to reach and educate working adolescents. Very limited evidence was found about the effectiveness of a peer approach in worksite. Studies in other settings presented peer groups as an acceptable channel for information dissemination. John Sciacca has defined peer health education as teaching or sharing of health information, values, and behaviours by members of similar age or status groups (9). Theories of social learning and social inoculation all support the use of peer educators (10-11). These stem from observations that friends seek advice from friends and are also influenced by expectations, attitudes, and behaviours of groups to which they belong (12). In a study done in a workplace in Botswana, a measurable positive impact on increasing knowledge of HIV/AIDS and practices relating to risky sexual behaviour was found (13). In other settings, a comparative investigation of peer-led and adult-led education found that peer leaders were more effective in establishing conservative norms and attitudes relating to sexual behaviour than adults (14). Evaluation of a peer educator-based programme of Nigeria and Ghana indicated that peer educator programme is effective in increasing knowledge and use of modern contraceptives (15). In a CARE project in Kenya, a survey found better knowledge, more positive attitudes, and signs of behavioural changes towards STD/HIV prevention after a peer-to-peer educational intervention (16).

As mentioned, workers in the garment industry of Bangladesh spend most of their time at workplace. In the workplace, they are likely to associate with their peers and, as expected, relative economic autonomy will allow them to participate, to a greater extent, in decisions affecting their lives. The ICDDR,B undertook this study to investigate the effectiveness of a peer-education approach at worksite in disseminating reproductive health information, improving decision-making, and decreasing high-risk practices.

Objective

The study was conducted to test a peer-education strategy, supported by information materials, to improve knowledge about reproductive health issues and increase the use of reproductive health services by urban adolescents working in the garment sector. It was planned to measure the effects in terms of changes in knowledge and practices.

The hypothesis of the study was that adolescent garment workers who receive peer group reproductive health education at their worksite, when compared to those who do not, will have significantly higher levels of reproductive health knowledge and use of health services.

Methods

Study design

The study, quasi-experimental in design, was begun in September 2000 and was completed in 2002. Pre- and post-intervention cross-sectional surveys were planned to measure the effects of the intervention. Working adolescent females were assigned to one of three groups: Group A received 'education and adolescent-friendly services'; Group B received 'only education'; and Group C served as controls.

Population

Source population

The source population was adolescent females, aged 13-19 years, working in the selected garment factories. The study was conducted in collaboration with the Concerned Women for Family Development (CWFD), a national NGO. The research was implemented in the garment factories where the CWFD had worksite programmes.

Study population

In urban Dhaka, the CWFD has two garment factories where they are implementing worksite programmes. These factories were purposefully assigned to the alternative interventions, i.e. reproductive health education (RHE), and adolescent-friendly services (AFS).

The intervention factories were contacted, and females aged 15-19 years were enrolled in the study. Listing and interviews were conducted simultaneously until 300 female adolescents were interviewed in each Group.

Sample size

The following formula was used for calculating the sample size:

$$\text{n/group} = \frac{[(Z_{\alpha} + Z_{\beta})^2 P(1-P)x2]x1.5}{d^2}$$

Here,

n = the desired sample size/group
Z_{α} = 1.645, one-tailed test
Z_{β} = 0.84
P = the proportion of adolescents having knowledge or a specific practice relating to reproductive health
d = the minimal detectable difference in knowledge or practices of adolescents relating to reproductive health between the intervention group and the control group

If P is 60% and d is 10%,

Considering the clustered sampling, a design-effect adjustment is required. This was set at 1.5. Further, as the sample included both female and male adolescents, the aim was to select 300 for each group.

Planned interventions

Activities

Meet Management Committee	List of adolescents	Orientation of adult workers	Training	Group session
Planned				
One meeting	Factory Registrar	No plan	On week days	Once a week
Conducted				
Several meetings	Listed during baseline survey	Several meetings	Only weekends	Not possible Once a week

Listing of adolescent workers

To identify the adolescent workers, a list was developed based on a list of workers provided by the garment authority. Due to inconsistency found between the observations of garment workers and age mentioned in the registers of the garments factory, the interviewers prepared an alternative list, and adolescent workers were identified after confirming their age.

Approval from garment factory management

Prior to beginning to work in the two garment factories, the project staff carried out several meetings with the garment management committee. The meetings were held by the CWFD's intervention team in the garment factory premises. In these meetings, the objective of the intervention was stated; adolescent issues were explained; the relevant intervention activities were described; and the booklets were shown to the authority.

Selection of peer-educators

Initially, 19 girls were selected as peer educators. The selection was done through rating their leadership capability, literacy, and educational status, i.e. completion of primary education. On the day of selection, an informal test was conducted among 30 female workers. Booklets were given to them, and they were asked to read selected parts to test their capability. Additionally, a topic was assigned to speak about, and their leadership competency was assessed from it.

Training of peer educators

The training was based on the booklets that were developed from the frequently-asked questions (FAQs) databank developed by the ICDDR,B. An adolescent working group revised the booklets. The training also focused on the peer-education guidelines. The length of training depended on the complexity of topics. Hard topics were divided into 2-3 sessions and delivered at different days of training, respecting the understandability level of peer educators. The training of peer educators had to be held on Fridays (weekends) at an interval of 2 weeks.

Development of material

The booklets focused on (i) normal sexual maturation, (ii) marriage and family planning, and (iii) sexually transmitted diseases and HIV/AIDS. The FAQ study was a community-based, qualitative investigation of demographically heterogeneous adolescents. This group included school attending and non-attending, married and unmarried, poor, low- and middle-class adolescents. Questions were compiled from the ICDDR,B's needs assessment and Rural Service Delivery Partner (RSDP)/Pathfinder newlywed assessment databanks. The respondents in the ICDDR,B study were mainly unmarried adolescents, whereas the respondents in the RSDP study were married adolescent girls. The questions covered menstruation, wet dreams, RTIs, and

contraception. The FAQ study was undertaken to explore other topics of reproductive health and sexuality, thereby, to develop a larger database covering several topics.

Initially, 380 questions and responses were compiled. These were reduced to 165 unique questions for which answers were prepared, using clear and easy-to-understand language. Scientific jargon was kept to a minimum. The social, cultural and religious backgrounds of adolescents were considered during construction of the responses. To limit the chance for misunderstanding or inappropriate action, judgmental messages were avoided.

The questions and answers were then reviewed by a panel made up of academicians, a psychologist, a religious leader, social workers, programme managers from the GoB and NGO agencies, and researchers with experience in this field. They reviewed the accuracy and relevancy of answers. The databank was finalized after pre-testing the questions and answers among adolescents.

After finalization, the databank was submitted to an adolescent reproductive health (ARH) working group. The group included representatives from the ICDDR,B, USAID, Bangladesh Center for Communication Programs (BCCP), Behaviour Change Communications (BCC) unit of Directorate of Family Planning, NGO Service Delivery Program (NSDP), Bangladesh Rural Advancement Committee (BRAC), Population Council, UNFPA, Marie Stopes, Social Marketing Company (SMC), and UNICEF. At first, the members of the working group decided on the most important reproductive health questions for adolescents. They again reviewed the answers and revised them in a standard format. To assist the development of the booklets, they also added some text. The draft booklets were pre-tested among the parents of adolescents to know for the acceptability and adolescents to assess comprehension.

Peer education guidelines

The peer-education guidelines were produced in support of the booklets, which formed the basis for reproductive health information. These materials were produced to guide the peer educators on how to facilitate an education session, and it also helped the peer educators to link up the training methods with the contents of the booklets. The guidelines were divided into topics according to the subject matter of the booklets. For each topic, there was an introduction about the topic to facilitate the initiation of a session, and afterwards there was a set of questions. The questions were set for each topic in such a manner that the most important point of a topic can be covered in the session.

While developing the guidelines, careful attention was paid to wording and construction of sentences. Wording and construction of sentences were consistent with natural conversations.

Distribution of booklets

The booklets were distributed among female workers of both Group A and Group B. The booklets were the basis of education sessions for the workers of Group A. As per design, the female workers of Group B received the booklets for information only, but no education session was held at that site. Each time before distribution, the garment authority read each booklet in detail. The garment authority was extremely concerned about their production, and the booklets were distributed whenever the authority gave a time; as a result, the booklets could not be distributed in due time.

Peer education sessions

After the completion of the first day training, group formation was begun with the adolescent workers included in the baseline survey. Once the group formed, the peer educators started their assigned task of information dissemination. One peer educator was responsible for 10-15 adolescent females, and she usually sat with her group once a week for 30 minutes. The lunch period was the only free time for holding the education sessions. The workers agreed to sacrifice only half an hour from their one-hour lunch time.

Measurement

Baseline survey

Reproductive and sexual health knowledge and practices were assessed with a multi-item questionnaire from March to April 2001. All adolescents were interviewed at their worksite, followed by a verbal consent from them.

End-line survey

It was planned that the intervention effect would be measured through an end-line survey after the completion of the intervention. Adolescents included in the baseline survey were to be interviewed in the end-line survey. The questionnaire and procedures used during the baseline survey were to be followed in the end-line survey.

Conduct of the study

Sensitization of the garment management committee

At the outset, it was assumed that obtaining of approval from the garment factory authority would be easy to have access to the worksite. Obtaining approval from the garment authority was a difficult task. They perceived the intervention as a task against the garment authority and were concerned that sentiment against the working conditions might be expressed and that production would be slowed if their workers take time out for the session. Discussion with the management committee on different steps of the intervention were needed to be held several times; the committee wanted to know details of the intervention, read the booklets carefully, and visited the health facility.

Permission was finally granted on the condition that the peer educators will be trained during weekends in the presence of factory supervisors and that subsequent peer group-education sessions will be held during the lunch time.

Listing of garment females

For this component, both males and females aged 13-19 years were targeted. After reviewing the list of workers, enough adolescent male workers could not be found. Also, the age limit for this component, i.e. 13-19 years, was not possible to maintain because of the sanction enforced against child labour, and none were found to be aged less than 15 years. As a result, only females aged above 15 years were included.

Orientation of co-workers

At the beginning of the intervention, little attention was paid to creating a supportive environment. It soon became apparent that we would need to meet older co-workers because of their hostility to education sessions and contents of the booklets. Older female workers, often illiterate, made unfavourable comments to the peer educators and considered the materials to be offensive and to promote promiscuity. The booklet on 'STI/HIV/AIDS' created vigorous reaction among the old female workers who were particularly offended by a sketch of a physical relationship in the STI/HIV/AIDS booklet. Reservations were found among the co-workers in delivering family-planning messages to unmarried workers. The male co-workers teased the girls, and the male supervisors sometimes did not allow them to join an education session. Several steps were taken to orient the co-workers. Meetings were held with the supervisors at different times in the presence of the factory management committee. We tried to mobilize the elder female workers but with minimal effect. After holding several meetings with the elder female workers, we were able to run all the activities as planned.

In Group B garments factory, at the time of distribution of booklet on 'STI/HIV/AIDS', requests came from garment authority for maintaining privacy, and they wanted that the booklets are to be wrapped in an envelope.

Education session

The education session faced additional problems, particularly due to the seasonal workload. Generally, the garment industry maintains a very strict and inflexible working schedule, but sometimes the working hours extend beyond the usual time. In these periods, the workers have to work day and night and, consequently, the education sessions needed to be withheld for several weeks. Non-cooperation of group members also caused additional problems in organizing group sessions. The peers were selected based on some leadership capability rather than their status in the garment factory, but being a peer educator affected their acceptability. It was found that females were reluctant to receive information from a peer who has a lower position in the factory. They were also not willing to receive information from a peer of similar age, education,

and socioeconomic status. Occasionally, the negative relationships among the workers affected the education sessions. In many cases, the intervention personnel were needed to be involved in organizing group session and individual motivation. Individual motivation was the only way for resolution of problems in holding the education sessions.

A garment factory is a workplace where the turnover rate is very high. Every month, new workers are enrolled to replace the vacant positions of old workers. As a result, the girls interviewed in the baseline survey could not always be included in the peer groups and because of the turnover, new girls had to be added. This problem limited access of the new girls in receiving complete information about the intervention.

Results

Due to the high turnover of employees in the factories, it was not possible to follow the female workers to the end of the intervention; as a result, testing the impact of the intervention could not be done. A comparison of the intervention would be highly vulnerable to selection bias. The results presented are based on data collected at baseline entry into the study.

Table 1 summarizes the number of adolescent female workers initially enrolled by age groups, i.e. 13-15 years and 16-19 years. The majority of adolescents fall in the age group of 16-19 years. Around 38% of females had not completed the primary level, 19% completed the primary level, and 31% did not complete the secondary level. Thirty-six percent of females were married, and 45% were married at the age between of 13 and 15 years, and an equal proportion was married at the age between 16 and 19 years.

Nearly half of married workers were using some form of modern contraception (Table 2). Oral contraceptive pills were the method of choice, followed by condoms. 'Desire for a baby' (43.8%), 'pregnancy' (24.3%), and 'in postpartum period' (4.9%) were the reasons for not using any method.

A very low level of knowledge was demonstrated about the timing of fertility (Table 3). For example, only 7.4% of working females could identify the period during the menstrual cycle when a female is most likely to become pregnant. But these working adolescent females seemed to be more knowledgeable about other reproductive health issues. Around half of the females were aware that pregnancy is possible having sexual intercourse once only, 65% agreed that, for maximum effectiveness, pill should be taken everyday, and 57% did not believe that pill can cause infertility.

The results in Table 4 indicate that adolescent female workers are familiar with oral contraceptive pills. Around 45% were aware of condoms, and 31% mentioned injectables. A few adolescents could also mention other modern contraceptive methods.

When the workers were asked to recall the names of various types of STIs, their knowledge was mostly limited to AIDS (Table 5). A few adolescents could mention

names of other STIs, and 42% could not mention the name of any STIs. Less than one-fifth could mention 'use of condom', 15% mentioned 'using new syringe', and 'testing blood before transfusion' as ways of preventing STIs. One-third was aware that 'avoid free mixing' could prevent STIs.

The majority (81%) of adolescents had heard about AIDS. Regarding its transmission, near about one-fourth stated that AIDS can be transmitted through 'used needles/scissors/blades' and 'receiving infected blood' (Table 6). Only 12% could mention 'having sex with an infected person' is a way of transmitting AIDS. Around 10% of females mentioned 'having sex with an infected person without condom' and transmission from mother to the foetus. Twenty-one percent, 19%, and 16%, respectively, mentioned that 'use of condom for every sexual act', 'avoid sharing needles', and 'avoid contaminated blood' as ways of preventing AIDS. Half of the female workers were aware that AIDS could not be cured.

Knowledge about modern contraception and STIs/HIV/AIDS was reduced to grouped categories (Table 7). The highest proportion of adolescents could state 1-2 modern method(s), and 43% and 52% could not recall any STIs and ways for preventing STIs respectively. More than 50% of female workers could recall 1-2 way(s) of transmission and prevention of AIDS.

Table 1. Demographic characteristics of respondents

Characteristics	Female workers	
	No.	%
Age (years)		
13-15	146	15.1
16-19	823	84.9
Highest grade of schooling		
No schooling	110	11.4
Primary incomplete	369	38.1
Primary complete	185	19.1
Secondary incomplete	299	30.9
Secondary complete and above	6	0.6
Marital status		
Unmarried	618	63.8
Married	351	36.2
Age (years) at marriage		
≤12	26	7.4
13-15	159	45.3
16-19	160	45.6
Could not remember	6	1.7

Table 2. Status of modern contraceptive use among married respondents		
Contraceptive use	Female workers	
	No.	%
Currently using methods		
Yes	124	46.3
No	144	53.7
Type of method used		
Pill	88	68.5
Condom	20	16.1
Injectables	11	8.9
Azol	2	1.6
Safe period	6	4.8
Reasons for not using any method		
Want baby	63	43.8
Pregnant	35	24.3
Physical problem	17	11.8
Side-effects	11	7.6
Postpartum period	7	4.9
Others	11	7.6

Table 3. Knowledge about fertility risks		
Question (correct answer)	Correct answers	
	No.	%
When in the menstrual cycle is the greatest chance of becoming pregnant?	72	7.4
Can one become pregnant after having sex one time only?	502	51.8
A woman must use pill every day (Yes)	632	65.2
Pill can cause infertility (No)	549	56.7

Table 4. Knowledge about name of contraceptive methods

Contraceptive methods recalled*	Correct answers	
	No.	%
Pill	826	85.2
Condom	431	44.8
Injectables	298	30.8
Norplant	13	2.2
IUD	21	2.1
Male sterilization	5	0.5
Female sterilization	3	0.3

*Multiple responses were accepted
IUD=Intrauterine device

Table 5. Knowledge on sexually transmitted infections

Awareness of STIs	Correct answers	
	No.	%
Name of STIs recalled*		
AIDS	557	57.5
Gonorrhoea	2	0.2
Syphilis	2	0.2
Hepatitis	-	0
Don't know	403	41.6
Knowledge about STI prevention*		
Use of condom	183	18.9
Using new syringes	60	14.8
Testing blood before transfusion	149	15.4
Avoid sex	142	6.1
Avoid free mixing	313	32.3

*Multiple responses were accepted
AIDS=Acquired Immunodeficiency Syndrome
STI=Sexually Transmitted Infection

Table 6. Knowledge about transmission and prevention of HIV/AIDS

Awareness of HIV/AIDS	Correct answers	
	No.	%
Aware about AIDS	783	80.8
Knowledge on transmission of HIV/AIDS*		
Having sex with infected person	113	11.7
Having sex with infected person without condom	93	9.6
Receiving infected blood	220	22.6
Used needle/scissor/blade	230	23.7
Mother-to-newborn during pregnancy/delivery	98	10.1
Prevention of HIV/AIDS*		
Abstinence	85	8.5
Faithful to partner	4	0.4
Avoid contaminated blood	159	16.4
Use of condom for every sexual act	207	21.4
Avoid sharing needle	186	19.2
Avoid commercial sex worker	24	2.5
Avoid illegal sex	445	45.9
AIDS is curable in some cases (No)	459	49.9

*Multiple responses were accepted
AIDS=Acquired Immunodeficiency Syndrome
HIV=Human Immunodeficiency Virus

Table 7. Knowledge scores relating to modern contraceptives and STI/HIV/AIDS

Knowledge scores	Correct answers	
	No.	%
No. of modern contraceptive methods recalled		
0	117	14.0
1-2	533	63.6
3-5	188	22.3
No. of STIs recalled		
0	241	42.6
1-2	324	57.2
3	1	0.2
Correct ways of STI prevention behaviour recalled		
0	255	51.7
1-2	179	36.3
3-4	59	12.0
Correct ways of HIV/AIDS transmission recalled		
0	175	22.3
1-2	427	54.5
3-5	181	23.1
Correct ways of HIV/AIDS-prevention behaviour recalled		
0	242	34.8
1-2	356	51.1
3-5	98	14.1

*Multiple responses were accepted
AIDS=Acquired Immunodeficiency Syndrome
HIV=Human Immunodeficiency Virus
STI=Sexually Transmitted Infection

Discussion

The rationale for offering the peer approach was based on the research evidence that showed that peer-education projects are inexpensive and young people frequently turn to their peers for information and advice. Most studies are confined to school-centred educational initiatives, and their results indicate that peer approaches play an effective role in positive development of youths (7). However, this study never had a chance to receive support to test the effectiveness of the peer-education approach. The major problem of this study was lack of methodologically sound outcome evaluation resulted from a significant missing number of female workers during the process of the intervention. The design of this study was based on specific logical assumptions but a feasibility study prior to a large-scale implementation would be helpful to anticipate the problems specific for garment factories. Failure to measure the outcome, the approach put forward the questions whether the strategy of this intervention matched the needs of females at the worksite or this specific strategy at the worksite could be generalized. However, the process evaluation could provide a greater understanding about the unsuccessfulness of the peer approach in a particular context. The characteristics of peer educators, the way of information dissemination, the working condition in a garment factory, and the particular socio-cultural context of Bangladesh were the constraints that the study faced. Although many studies indicate the effectiveness of the peer approach, there is a scarcity of information on the peer approach in a worksite, especially in a garment factory. Reviewing the process and assessing the context of the garment factory could suggest what is needed for future work in a garment factory targeting adolescent workers.

Analysis of the baseline dataset does allow for an updated description of the current levels of reproductive and sexual health knowledge and practices among adolescent females who are working in garment factories. These are discussed below.

Marriage: The baseline survey showed that the majority of females were aged 16-19 years, and more than one-third were married. Regarding the age of marriage, it was equally distributed between age groups of 13-15 and 16-19 years. The age distribution among the females revealed that marriage of some girls might take place before their joining the industry, and some might get married after their joining. This suggests that girls are getting married at a young age despite their economic empowerment.

The Bangladesh Demographic and Health Survey 1999-2000 showed that 35% of married adolescent females have already begun their childbearing. Also, in this study, half of the married girls were not using any family-planning methods, and reasons for this were ‘pregnant’, ‘want child’, and ‘at postnatal period’. The early childbearing situation of Bangladesh is universal for all Bangladeshi adolescent females, and considering the adverse health consequences of early childbearing, the proportion of female workers who were not using any family-planning methods and the reasons stated for this are important points to consider.

Fertility, family planning, HIV/AIDS, and STIs: Although many female workers were aware of different fertility issues, for example, pregnancy happens after one sexual act, effective use of pill, misconception of pill, relatively few workers were knowledgeable about when the highest chance of being pregnant during the menstrual cycle. This low-level knowledge and the fact of curious nature during the adolescence period are exposing them to the risk of unwanted pregnancy and its consequences. On the contrary, more than half of female workers were aware of 1-2 modern method(s), STIs, transmission, and prevention of AIDS. Interactions with co-workers and mobility outside home might be the sources of health-related information for working females.

Environment of a garment factory

In the recent years, the garment sector in Bangladesh has opened the door of new horizon for young women; through working in this formal sector, the stigma has broken regarding women's mobility, which has a contribution to achieving social and economic autonomy of women. But addressing adolescent female workers for health education in a setting, like garment factory, is particularly challenging where production is the uppermost priority. In a garment factory, there are circumstances where workers are occupied with work for a longer period that prevents them from looking forward to any other activities. Despite this harsh working condition, the positive attitude developed among the garment authority towards a message-orientated intervention is hopeful and helpful for considering further programmes for adolescents working in the sector.

Sensitization of older employees

In this intervention, relatively modest attention was paid to other workers surrounding the adolescent workers. The role of parents is generally recognized as a powerful influence on adolescent's life, and it was assumed that as the workers other than the adolescent females in the garment factory were not related to adolescent females, they would not be reactive to sensitive reproductive health information. One study, in Bangladesh, documented that parents and community leaders recognize the necessity of sexual education but are not agreeable to extensive or intensive education (17). Another study found that it is nearly always to difficult to gather adolescents because parents are skeptical about allowing their children to take part in peer-education programmes. They think that teaching reproductive health, early marriage, early pregnancy, and sexual-oriented information will corrupt the minds of their children at a young age (18). Parents need to be prepared to be open to such a dialogue with their children. This may improve difficult family situations and reduce involvement in other risk-taking behaviours that adolescent themselves stated are associated with family conflicts (19).

Soon after the initiation of education session, it was realized that motivation of older workers was one of the necessary steps to make the intervention functional. The reactions and resistance emerged from adult employees against the booklets and education session suggest for a parallel orientation for older employees with the garment authority. It again suggested that traditional concerns of adults regarding

reproductive health of adolescents are the greatest barriers for any kind of adolescent intervention, and little can be done without their support.

Attrition

The turnover of workers from one factory to another was an enormous problem for measuring the impact of this study, which suggests that, before designing any strategy, the possible constraints of different settings should be taken into account. The length of the intervention is important; an intervention continuing for over a year might be a constraint for following up garment workers for evaluation. At the worksite, programmes should be aimed at providing a quick course with correct information where chances of missing individuals between interventions are high.

Peer approach

Results of several studies showed that the peer approach is one of the acceptable ways to reach adolescents (12-14). The acceptability of a peer educator in worksite was different for this study than that of other studies. In this study, the peer approach suffered from organizing group sessions due to strict timing of the garment factory and non-cooperation of adolescent workers despite the enthusiasms of the peer educators. Although the outcomes of the peer approach in this study were not possible to evaluate, the process led to an understanding that the peer educators of this study were not fully accepted by their peers. Perry *et al* (1986) pointed out that the peer educator/receiver relationship, based on a 'give and take' friendship and not on authoritarian teacher-pupil-model, this is stated as a major reason for acceptance of the peer-education process (20). This study faced various problems with this approach, which suggest that instituting a peer approach in a formal structure, like garment factory, needs the creation of a new process. The value of a peer educator laid in his/her position, reputation in the factory, and skills for providing information. Furthermore, the trend of not-to-be trained from a person of a similar category and demeaning their intelligence were found as a common notion among the female workers.

Conclusion

Knowledge and practice

The baseline survey indicated that working female adolescents were poorly informed about many, if not most, reproductive health issues. Despite their employment, working females are getting married and pregnant during their adolescent period.

Community sensitization

Resistance of older employees at a worksite regarding adolescent reproductive health contributed to the greater understanding that it is extremely difficult to work with adolescents without the support of adults.

Feasibility

a. The strategy of education session using peer educators from the adolescent female workers at worksite remains questionable. The working condition and value system of peer educators at worksite should be taken into consideration.

b. Attrition of the workers proved that following adolescent workers for more than a year was an unrealistic expectation. Intervention of shorter duration and phasing-out groups will, in turn, possibly be a potential approach for effective evaluation.

c. Furthermore, other alternative strategies need to be tested at worksites to identify the appropriate strategy to provide reproductive health education to garment adolescent workers.

References

1. Mitra SN, Al-Sabir A, Saha T, Kumar S. Bangladesh demographic and health survey 1999-2000. Dhaka: National Institute of Population Research and Training, 2001.

2. Population Council. Study of adolescents: dynamics of perception, attitude, knowledge and use of reproductive health care. Dhaka: Population Council, 1997.

3. Bangladesh. Directorate General of Health Services. HIV in Bangladesh: where is it going? Dhaka: AIDS and STD Control Programme, Directorate General of Health Services, Ministry of Health and Family Welfare, Government of Bangladesh, 2001.

4. Nahar Q, Tunon C, Houvras I, Rukhsana G, Reza M, Huq NL, Barkat-e-Khuda. Reproductive health needs of adolescents in Bangladesh: a study report. Dhaka: International Centre for Diarrhoaeal Disease Research, Bangladesh, 1999. (ICDDR,B working paper no. 130).

5. Ali A, Mahmud SN, Karim F, Chowdhury A. Knowledge and practice of NFPE-AG graduates regarding menstruation. Dhaka: Bangladesh Rural Advancement Committee, 1996.

6. Ahmed S. Behavioral aspects of reproductive health among poor adolescent female in Dhaka, Bangladesh. London: London School of Hygiene & Tropical Medicine, 1991. (MSc thesis)

7. Kabir R. Adolescent girls in Bangladesh. Dhaka: United Nations Children's Fund, 1999.

8. Amin S, Diamond I, Naved RT, Newby M. Transition to adulthood of female garment-factory workers in Bangladesh. *Stud Fam Plan* 1998;29(2):185-200.

9. Sciacca JP. Student peer health education: a powerful yet inexpensive helping strategy. *Peer Facilitator Q* 1987;5:4-6.

10. Bandua A. Social foundations of thought and actions: a social cognitive theory. Englewood Cliffs, NJ: Prentic-Hall, 1986.

11. McGuine WJ. Enducing resistance to persuasion: some contemporary approaches. *Adv Experimen Soc Psychol* 1964;1:191.

12. Milburn K. A critical review of peer education with young people with special reference to sexual health. *Health Educ Res* 1995;10:407-20.

13. Ronald Hope KS. Promoting behavior change in Botswana: an assessment of the peer education HIV/AIDS prevention program at the workplace. *J Health Commun* 2003;9:267-81.

14. Mellanby AR, Newcombe RG, Rees J, Tripp JH. A comparative study of peer-led and adult-led school sex education. *Health Educ Res* 2001;16:481-92.

15. Brieger WR, Delano GE, Lane CG, *et al*. West African youth initiative: outcome of a reproductive health education program. *J Adol Health* 2001;29:436-46.

16. Evaluation of CARE International's "Community resources for under 19's on STDs & HIV" program in Kenya. *Network* 1997;17:3.

17. Barket A, Khan SH, Mazid M, Sabina N. Adolescent sexual and reproductive health in Bangladesh: a needs assessment. Dhaka: Family Planning Association of Bangladesh, 2000.

18. United Nations Population Fund, Bangladesh. Adolescent peer education and assessment of existing approaches to FLE and sexuality related education for young people. Dhaka: United Nations Population Fund, Bangladesh, 2002.

19. Report on assessment of reproductive and sexual health needs of adolescents in Nasirnagar, Brahmanbaria, Bangladesh. Dhaka: Save the Children, USA, July 2003.

20. Perry CL, Klepp KI, Halper A, Hawkins KG, Murray DM. Process evaluation study of peer leaders in health education. *J School Health* 1986;56:62-7.