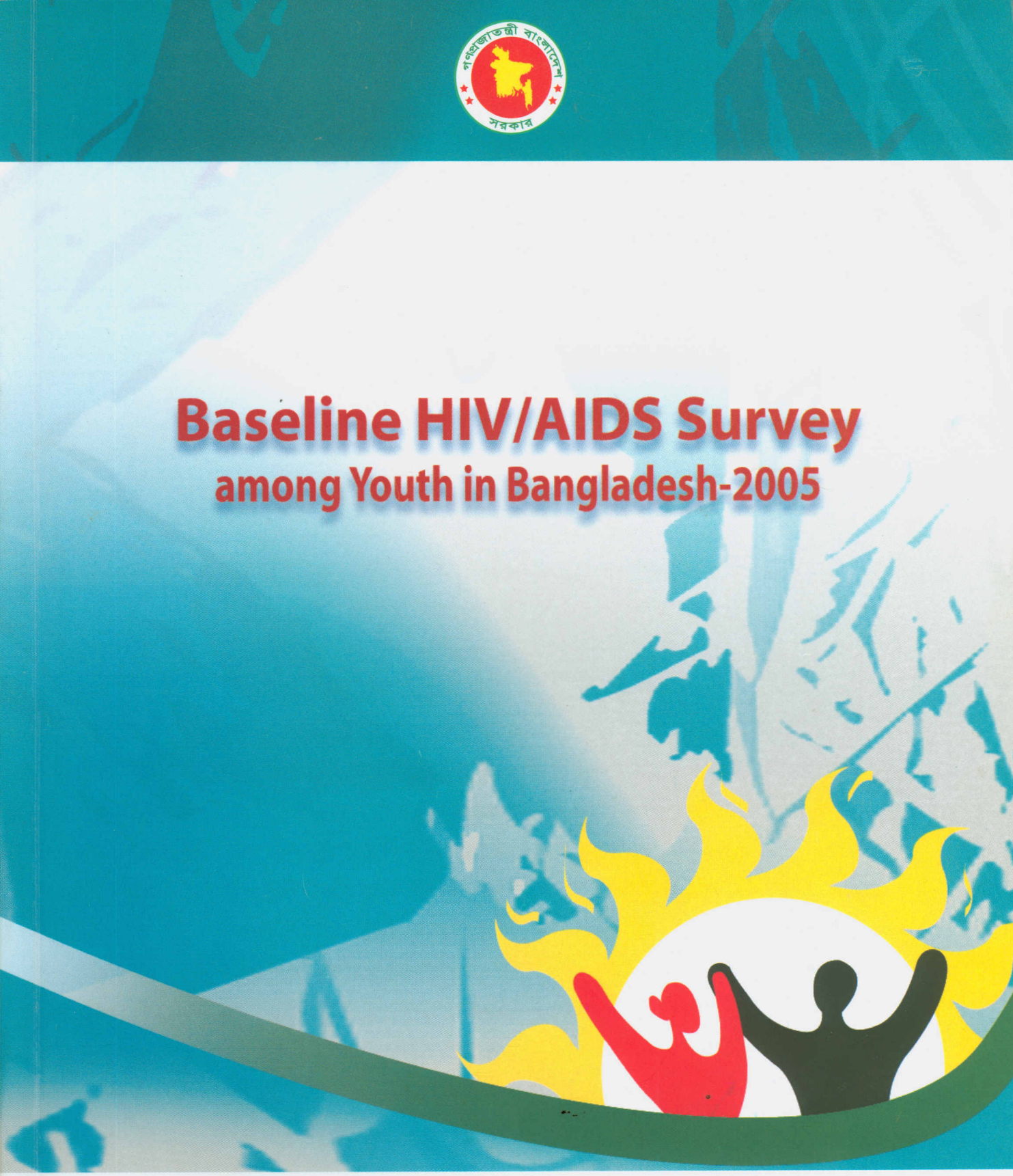
Baseline HIV/AIDS Survey among Youth in Bangladesh-2005



National AIDS/STD Programme
Directorate General of Health Services,
Ministry of Health and Family Welfare

Save the Children
USA

Baseline HIV/AIDS Survey among Youth in Bangladesh-2005

Project on 'Prevention of HIV/AIDS among Young People in Bangladesh'

Grant # BAN-202-G01-H-00

A Collaborative Project between National AIDS/STD Programme, Ministry of Health & Family Welfare and Save the Children-USA, Funded by GFATM

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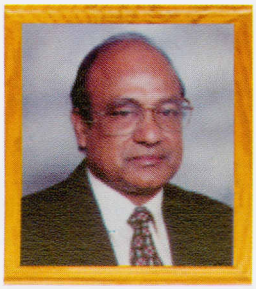


Minister
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh

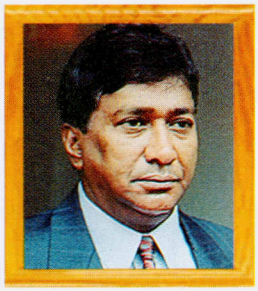
FOREWORD

Prevention and control of Acquired Immunodeficiency Syndrome (AIDS), and Sexually Transmitted Infections (STIs) is one of the major global challenges of twenty first century. Over 20 million people died since the first case of AIDS detected in 1981. Worldwide 33 million people are infected with HIV, and of them, one-third is aged 10-24. An estimated 6,000 young people aged 15-24 years become infected with HIV every day accounting for more than half of all new HIV infections. More than seven million people in Asia are living with AIDS. Neighboring countries of Bangladesh like India, Myanmar and Thailand have alarming prevalence of HIV/AIDS. We are concerned in anticipation of the imminent emergence of an HIV/AIDS epidemic in Bangladesh and considering the magnitude of this threat, a survey was planned exclusively with youth in Bangladesh, for the Project on "Prevention of HIV/AIDS among Young Pepole in Bangladesh" funded by the GFATM.

The Baseline HIV/AIDS Survey conducted during February-April 2005 among youth is a nationally representative survey and first of this type in the country. It has provided baseline information that includes young people's knowledge of HIV, STIs; access to information and services, misconception about HIV/AIDS, premarital sex and use of condom, risk behavior and prevalence of STIs. I believe the Baseline survey will fulfill the knowledge gap and would help in designing more culturally acceptable programme to prevent the HIV/AIDS epidemic among the youths in Bangladesh. Youth are greatly influenced and guided by their parents, teachers, religious and community leaders. Therefore information about attitude and beliefs of their parents, community leaders and service providers on HIV/AIDS and STI generated through this survey and STIs will be of immense importance for planning and designing HIV prevention strategies in the country.

I express my sincere thanks to all professionals of National AIDS/STD Programme and the Management Agency of the fund, Save the Children-USA who worked to make this survey a quality and successful one. I also express my thanks to the scientists of ICDDR,B, ACPR and Population Council for their sincere effort and successful completion of this valued survey.

Dr. Khandaker Mosharraf Hossain



State Minister
Ministry of Health and Family Welfare
Government of People's Republic of Bangladesh

FOREWORD

The prevalence of HIV is still low in Bangladesh. The results of the few behavioral studies, including national behavioral surveillance addressing risky sexual behavior, indicate that risky sexual behavior is common with low condom use. Information on sexual behavior and STI prevalence among youth in Bangladesh does exist, but it is limited and insufficient and does not match the interventions to be implemented under the Global Fund To Fight AIDS, Tuberculosis and Malaria (GFATM) funded HIV/AIDS youth prevention programme. A National Baseline HIV/AIDS Survey among youth was planned to address the knowledge gap. A consortium of ICDDR,B: Centre for Health and Population Research, Associates for Community and Population Research (ACPR), and The Population Council, Bangladesh was assigned by Save the Children USA, the management agency, under the technical guidance of National AIDS/STD Programme (NASP), Directorate General of Health Services, Ministry of Health and Family Welfare (MOHFW) of the Government of the People's Republic of Bangladesh to conduct the survey.

The study was designed to measure knowledge, prevalence of risky sexual behaviors among youth and prevalence of specific STIs, Syphilis and Herpes Simplex Virus 2 (HSV2) from a sub sample of youth. In addition to youth, surveys were conducted among parents/guardians, teachers, and community/religious leaders (Gatekeepers) about their beliefs and attitudes regarding HIV/AIDS, sexual and reproductive health (SRH) education and condoms. I believe, the Baseline survey will fulfill the knowledge gap (behavioral and biomedical) and would help in designing more culturally acceptable Programme to prevent the HIV/AIDS epidemic among the youth in Bangladesh.

I thank the team of researchers from ICDDR,B, ACPR and Population Council who completed this valuable study.

Md. Mizanur Rahman Sinha

Secretary
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh

FOREWORD

The Baseline HIV/AIDS Survey among youth in Bangladesh is a nationally representative survey held for the first time in Bangladesh. One-third of the population of Bangladesh are adolescents and youth aged 10-24 years. They are especially vulnerable to HIV & STIs because of their recent pubertal changes, low level knowledge regarding HIV and risky sexual behavior. Information on behavioral and biomedical markers for STIs among youth and adolescents from general population is scanty.

The survey has obtained and provided baseline information on the basic indicators of HIV/AIDS, identify risk behavior among different walks of youth and adolescents aged 15-24 years of age. This survey will fulfill the behavioral and biomedical knowledge gap and would help in designing more culturally acceptable program to prevent the HIV epidemic among the youth in Bangladesh.

Further analysis of HIV/AIDS data is necessary. It is expected that academicians, researchers and program personnel will carry out such analysis and provide in-depth knowledge to guide the future direction and effective implementation of the HIV/AIDS intervention for adolescents and youth.

I express my sincere thanks to the professionals and scientists of ICDDR,B, ACPR and the Population Council for their sincere effort and timely completion of the survey. Save the Children, USA deserves special thanks for providing support as the Managing Agency in implementing GFATM funded HIV/AIDS project with high quality for impact.

AKM Zafar Ullah Khan

Director General and
Line Director, NASP
Directorate General of Health Services
Government of the People's Republic of Bangladesh

FOREWORD

Bangladesh having 140 million population and adolescent & youth (10-24 year) constitute one-third of the total population. This is the highest proportion found in South or South East Asia. Although there is some information on behavioral and biomedical markers for STIs & HIV among youth and adults with high-risk behavior, information on youth and adolescents is scanty. National baseline survey on HIV/AIDS among youth obtained detailed information on awareness, knowledge, misconceptions, use and knowledge about condom, media, prevalence of STIs and risky behavior. It is therefore important to identify risk behavior among youth to understand the dynamics and factors influencing the behavior changes.

Findings of this survey will be instrumental in designing of HIV/AIDS intervention program and in assessing the achievements. I also believe that government, NGOs and private health service delivery networks should utilize findings of the study.

I would like to thank Save the Children, USA as our Management Agency for effective collaboration and implementation of GFATM funded HIV/AIDS project through partners in Bangladesh. I would also like to record our sincere thanks to ICDDR,B, ACPR and the Population Council for conduction of this survey.

Shahadat

Professor Dr. Md. Shahadat Hossain

Chief HIV Advisor & Chairperson
Technical Committee, National AIDS Committee
Ministry of Health and Family Welfare
Government of People's Republic of Bangladesh

FOREWORD

This is my pleasure to know that Baseline HIV/AIDS Survey among Youth has been completed successfully, preliminary report as already published and a final report on its findings is going to be published. Although prevalence of HIV is low in Bangladesh, the risk of an emergence of HIV/AIDS epidemic can not be ignored. Countries facing HIV/AIDS surrounds Bangladesh and frequent travel to and from countries has made us vulnerable to this deadly disease. Adolescents/youth (10-24 year), who constitute one-third of the total population of Bangladesh, are especially vulnerable to HIV/AIDS because of their lack of knowledge and risky sexual behavior. The national policy on HIV/AIDS and STD related issues, therefore, stresses importance on protecting youth. It states that access to correct and relevant information on sexual health and safer sexual practices should be provided to adolescents.

This survey gives us a very clear picture of knowledge of HIV/AIDS among youth, and their sexual practices both in urban and rural areas. It also gives us an understanding of knowledge of parents, guardians', service providers and policy planners about HIV/AIDS, and their attitude towards effective preventive measures. This report will definitely guide us to plan effective intervention programmes for Bangladesh.

National AIDS/STD Programme worked closely with our Management Agency Save the Children USA for effective implementation of the project for young people in prevention of HIV/AIDS. I thank the team of Save the Children USA, researchers from ICDDR,B, ACPR and Population Council who completed this valuable study.

Major General Dr. ASM Matiur Rahman (Rtd.)

Programme Manager
National AIDS/STD Programme
Directorate General of Health Services
Ministry of Health and Family Welfare

FOREWORD

Bangladesh Government has been awarded GFATM funded HIV/AIDS prevention project for young people in 2003. In order to support the partnership strategy, Ministry of Health & Family Welfare has entered into an agreement with Save the Children USA as the Management Agency for effective implementation of the project, in collaboration with National AIDS/STD Programme. This is a key project in our national strategies response and implemented through partners all over the country. The prevalence of HIV is still low in Bangladesh but risky sexual behavior is common with low condom use.

A National Baseline HIV/AIDS Survey among youth was planned and conducted for assessing the knowledge, attitude and practices. Save the Children USA and their consortium of ICDDR,B: Centre for Health and Population Research, Associates for Community and Population Research (ACPR), and The Population Council has conducted the research with the technical assistance from National AIDS/STD Programme (NASP), Directorate General of Health Services, Ministry of Health and Family Welfare (MOHFW). The study was designed to measure knowledge, prevalence of risky sexual behaviors among youth and prevalence of specific STIs, Syphilis and Herpes Simplex Virus 2 (HSV2) from a sub sample of youth.

In addition to youth, surveys were conducted among parents/guardians, teachers, and community/religious leaders (Gatekeepers) about their beliefs and attitudes regarding HIV/AIDS, sexual and reproductive health (SRH) education and condoms. Health service providers' attitudes and practices regarding SRH services to youth were also assessed. Qualitative data about HIV prevention issues and programmatic views were obtained from policy planners working in relevant, key government ministries. This report will definitely guide us to plan effective intervention programmes for Bangladesh.

I thank our Management Agency Save the Children USA and the team of researchers from ICDDR,B, ACPR and Population Council who completed this valuable study.

Dr. Md. Abdus Salim

Country Director
Save the Children - USA
Bangladesh Country Office

FOREWORD

It is great pleasure that baseline HIV/AIDS survey among youth has successfully been completed and a report on the findings is going to be published. Bangladesh is a densely populated country with one third of its population at the age of 10-19. It is unfortunate that risk perception about getting infected with HIV/AIDS is very poor among youth. Only 2.2% male and 1% among female are aware of getting infected with HIV/AIDS. Poor knowledge level may turn to bring a disaster in the country unless awareness raising measure is taken. Condom use is also very low. Only 35% reported to have had used condom in the last sex act and only 25% parents, teachers and community leaders approve use of condom to unmarried youth. However, It is encouraging that 60% service providers approve sale of condom and the gatekeepers are in favor of HIV/AIDS prevention program. The service provider's commitment for supporting HIV/AIDS prevention program is very high.

I hope survey findings has enabled all of us to understand the current situation of HIV/AIDS among youth in Bangladesh better. I am confident that the findings of this study will stimulate Government and NGO healthcare organizations in designing appropriate interventions towards HIV/AIDS prevention for youth in this country.

I sincerely thank ICDDR,B, ACPR and The Population Council for accomplishment of this highly valuable task.

Above all, my heartfelt thanks goes to, National AIDS/STD Programme and Directorate General of Health Services for their continued support in completing the study.

Edward Olney

Contents

Acronyms

AIDS	Acquired Immuno Deficiency Syndrome
ACPR	Associates for Community and Population Research
BBS	Bangladesh Bureau of Statistics
BRAC	Bangladesh Rural Advancement Committee
CSW	Commercial Sex Worker
EPI	Expanded Programme on Immunization
EDTA	Ethylene Diamine Tetra Acetic Acid
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GoB	Government of Bangladesh
HIV	Human Immuno-Deficiency Virus
HSV2	Herpes Simplex Virus 2
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
IDUs	Injecting Drug Users
IMPS	Integrated Multi Purpose Sample
IgG	Immunoglobulin G
IgM	Immunoglobulin M
MOHFW	Ministry of Health and Family Welfare
MSM	Male having Sex with Male
MR	Menstruation Regulation
NASP	National AIDS/STD Programme
PSU	Primary Sampling Unit
RH	Reproductive Health
RPR	Rapid Plasma Reagin
SRH	Sexual and Reproductive Health
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
SES	Socio Economic Status
SW	Sex Worker
TPHA	Treponema Pallidum Heamaglutination Test
TV	Television
WHO	World Health Organization
YFHS	Youth Friendly Health Services

Executive Summary

The prevalence of HIV is still low in Bangladesh. The results of the few behavioral studies, including national behavioral surveillance addressing risky sexual behavior, indicate that risky sexual behavior is common with low condom use. Limited information on sexual behavior and STI prevalence among youth in Bangladesh does exist, but is insufficient and does not match the interventions to be implemented under the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) funded project on "Prevention of HIV/AIDS among young people in Bangladesh". A National Baseline HIV/AIDS Survey among youth was planned to address the knowledge gap. A consortium of ICDDR,B: Centre for Health and Population Research, Associates for community and Population Research (ACPR), and Population Council, Bangladesh was contracted by Save the Children USA, the Management agency, for GFATM in collaboration with Ministry of Health and Family Welfare (MOHFW) of Government of Bangladesh to conduct the survey.

The study was designed to measure knowledge, prevalence of risky sexual behaviors among youth and prevalence of specific STIs, Syphilis and Herpes Simplex Virus 2 (HSV2) from a sub sample of youth. In addition to youth, surveys were conducted among parents/guardians, teachers, and community/religious leaders (Gatekeepers) about their beliefs and attitudes regarding HIV/AIDS, sexual and reproductive health (SRH) education and condoms. Health service providers' attitudes and practices regarding SRH services to youth were also assessed. Qualitative data about HIV prevention issues and programmatic views were obtained from policy planners working in relevant, key government ministries.

The survey was ecologic, cross-sectional and descriptive in nature. The survey employed a nationally and divisional representative two-stage sample that was selected from Integrated Multi Purpose Sample (IMPS) maintained by Bangladesh Bureau of Statistics (BSS). The IMPS consist of 1,000 Primary Sampling Units (PSUs). The survey was conducted in 360 randomly selected PSUs from 6 divisions and from two statistical metropolitan areas of Bangladesh. Both in urban and rural settings a multi-item structured, sex matched interviewer-conducted questionnaire was applied. The population was stratified by urban vs. rural, and married vs. unmarried. Blood samples were collected from a sub sample of youth. Youth aged 15-24 years (unmarried and married) in urban and rural Bangladesh, parents/guardians, teachers and community/religious leaders, health services providers and policy planners relevant to key ministries were the source population of this study. Male youth aged 18 years and above, out of school and earning money were assessed separately, as a potential target group (Special Group).

A total of 12,729 youth, 727 parents/guardians, 722 teachers, and community/religious leaders, 875 health service providers and 10 policy planners were interviewed.

Youth interview results: The mean age of male and female youth was 20.4 and 18.6 years respectively. Around 18% of males and 12% of females had no formal education. The primary occupations of male youth were student, agriculture, trading, transport worker or laborer. Female youth were mainly housewives and students.

More than 85% of youth had heard of HIV/AIDS. However, knowledge regarding HIV/AIDS transmission and prevention was poor. Only 21.7% of youth had correct knowledge of at least two routes of HIV/AIDS transmission. Twenty two percent of youth had correct knowledge of at least two ways of prevention of HIV/AIDS. Many misconceptions related to transmission and prevention of HIV/AIDS was identified. More than half of the youth believe that coughing/sneezing can spread HIV. Fifty percent of the youth had believe that sharing food and water with an HIV infected person can transmit the disease. Fifty seven percent of youth interviewed believe that washing after sex and 73% of youth believe that using lubricant during sex can prevent transmission of HIV. More than half of the youth believe that antibiotic can protect them from HIV. Only 2.2% of males and 1.1% of females have perceived their risk for getting infected with HIV.

Survey results shows that risky sexual behavior is common among youth and condom use is low. Around 22% of unmarried males and 2% of unmarried females reported history of premarital sex. The most common sex partner for males was girlfriends (58%). However, in more than 25% of cases, the sex partners were sex workers. Fifty five percent of youth with history of premarital sex reported that they had never used condoms. Thirty five percent of males reported that they used condoms in the last sex act. Among married youth, 7% had history of extramarital sex and the most common sex partners were sex workers (57%).

Knowledge about STIs was poor among youth. More than half of the males and three fourths of females have never heard about STIs. Thirty Three percent males and 14% females had correct knowledge about two or more ways to prevent STIs. The prevalence of reported STI symptoms was high among youth. Over 20% of youth reported symptoms suggestive of STIs in the last year. STI symptoms were higher among youth with histories of premarital and extramarital sex. Approximately 63% of youth with STI symptoms in the last year visited some type of health service providers. However, only 10% visited hospitals or clinics for STI services.

A total of 1980 respondents from 107 randomly selected PSUs participated in the serological survey (blood sampling for evidence of infection). The overall

seroprevalence of syphilis was 0.6%. The prevalence of syphilis among married youth was 1.0%. The overall (current and past infection) seroprevalence for Herpes Simplex Virus2 (HSV2) among youth was 16.5% and 1.7% of youth had current HSV2 infection.

A Gatekeeper interview results: Around 80% of parents, 97% of community/religious leaders and 100% of teachers were aware of HIV/AIDS. Ninety six percent of them believe that HIV epidemic is likely to spread among youth in Bangladesh. However, only 8% of parents, 30% of teachers and 18% of religious/community leaders know that unprotected sex with a HIV/AIDS infected person is a leading cause of HIV/AIDS transmission. Parents, community/religious leaders and teachers were in favor of HIV intervention program. Ninety four percent of parents, community/religious leaders supported the participation of youth in HIV prevention program and 94% of teachers were in favor of providing such information to youth in school. Although more than 90% of gatekeepers agree that condoms should be used for prevention of HIV/AIDS and STIs only 25% of them supports condom sales to unmarried youth.

Health Service Provider interview results: All health service providers interviewed were willing to support and contribute in HIV/AIDS activities in the form of counseling on prevention of HIV/AIDS, and condom use. Almost all the health service providers are of the opinion that condoms should be used to prevent spread of STI (99%) and HIV/AIDS (98%). They approve condom sales to married youth. However, only 60% approve condom sale to unmarried youth.

Policy planner interview results: All policy planners agreed that youth in Bangladesh are most vulnerable for HIV/AIDS and concerted efforts from all concern are essential for prevention of HIV/AIDS in Bangladesh. The most important program activities identified by policy planners are 1) increasing awareness of HIV/AIDS, 2) introduction of HIV/AIDS education in school curriculum, 3) ensuring of Youth Friendly Health Services (YFHS), 4) involving community/religious leaders in HIV/AIDS prevention program and 5) more active involvement of policy planners in HIV/AIDS prevention program development.

The current survey shows that youth of Bangladesh have awareness about HIV/AIDS, but they have many misconceptions. These misconceptions lead them to risky sexual behavior and reduce their sense of vulnerability. The study shows that the information about HIV/AIDS is important but being "knowledgeable" is not enough. Television is a preferred source of information but all forms of public media reach important segments of the general youth population.

Risky sexual behavior is common among youth, and condom use is unacceptably low. Although availability of condoms is fairly high, social norms with stigma associated with purchasing condom are the major barriers to condom use by youth. The STI disease burden among youth is high. Youth have high prevalence of

STI symptoms and STIs, but diagnosis and care facilities for STI and HIV are limited.

Efforts should be continued to maintain awareness and knowledge. However, contents of the messages must deal with important misconceptions and lack of sense of vulnerability among youth. Strong barriers to the accessibility of condoms must be removed for successful intervention programmes. This will require strong public sector support.

Youth Friendly Health Services (YFHS) must be ensured for youth. Health service providers have inadequate training, continuing education in HIV/AIDS is essential. They must be directly involved in programme planning at all levels since they are respected, are highly aware of HIV/AIDS epidemics, recognize vulnerable populations who might be motivated to participate. HIV/AIDS prevention/counseling modules tailored to the varied backgrounds of providers are urgently needed. Evidence based practice guidelines to ensure uniformity and quality of care are required. STI/HIV diagnostic capacities must be upgraded. Service providers are very supportive of interventions and have high willingness to counsel, although they have little or no real life experience with HIV/AIDS and STI prevention or treatment.

Gatekeepers' awareness about HIV/AIDS is high but knowledge on HIV/AIDS transmission and prevention is low. They are aware and willing to act, although few adults actually take any action. These gatekeepers know very little about the existing HIV/AIDS prevention program in Bangladesh. General support for information about HIV/AIDS through schools exists. But the key barriers also exist regarding sex and condom education.

Back-up plans to deal with parent/community resistance are necessary. Policy planners are aware of the imminent threat of HIV/AIDS and must be directly involved in programme planning at all levels.

Background

The prevention of Acquired-Immuno Deficiency Syndrome (AIDS) is one of the major global challenges of the twenty-first century. Today some 33 million people are living with the Human Immunodeficiency Virus (HIV) infection. HIV infection caused approximately 2.9 million deaths in 2003 and 4.8 million new HIV infections occurred worldwide during 2003[1]. On average, 6000 young people aged 15-24 years are infected every day, accounting for more than half of all new HIV infections[1]. An estimated 7.4 million people in Asia have been infected with HIV. Among youth 0.3% - 0.4% of men were living with HIV in 2003 in Asia[1]. India, which neighbours Bangladesh, had an estimated 4.6 million people in 2002 living with AIDS[1].

Sexually Transmitted Infections (STIs) represent a major health burden in the HIV era due to its close association with HIV. It has been estimated that 340 million new cases of STIs have occurred among youth in 1999 worldwide, including 151 million in South and Southeast Asia. Ulcerative and non-ulcerative STIs increase the risk of transmission and acquisition of HIV by 3-10 times and 3-5 times respectively. It is well documented that people at risk for STI have higher prevalence of HIV and STI. Interventions, if implemented in early HIV epidemics, can reduce the incidence of HIV as much as 40%. STI interventions are considered a cornerstone for HIV intervention. STI service delivery is a key contact point with populations vulnerable to HIV.

Since the detection of the first case of HIV/AIDS in Bangladesh in 1989, a total of 465 cases of HIV/AIDS were confirmed and reported by December 2004. Of those, 87 developed AIDS and 44 died. The estimated total number of people living with HIV/AIDS in Bangladesh is around 7,500 as of December 2004[2].

Bangladesh is one of the few countries in Southeast Asia that has 2nd generation HIV surveillance since 1998. Cumulative data from all rounds of surveillance indicates that the prevalence of HIV is below 1% in all high-risk groups except in Injection Drug Users (IDUs) in Central Bangladesh. The prevalence of HIV among IDUs in Central Bangladesh is on a constant rise from 1.4% and 1.7% in 2000 and 2001 up to 4% in 2002 and 2003/2004[2].

There are several factors, which make Bangladesh more vulnerable to HIV/AIDS epidemics. These include 1) geographical proximity with India, Myanmar and Nepal with migration of population to and from these countries, 2) high prevalence of risky sexual behaviors such as sex with sex workers (SWs), 3) high prevalence of STIs among sex workers and other populations at risk, 4) low condom use in commercial sex, 5) wide spread Male Sex with Male (MSM) activity and 6) substance abuse such as Injecting Drug. Furthermore, poor knowledge about HIV/AIDS, limited STI care facilities,

poverty, poor negotiation skills, migration, human trafficking, gender inequality and gaps in health care systems make the situation even worse [3].

Adolescents/youth are especially vulnerable to HIV and STIs because of their recent pubertal changes, low level of knowledge regarding HIV, poor self control, availability and accessibility to sex workers and risky sexual behavior[4]. Earlier studies in Bangladesh has shown that 88% and 38% of unmarried male and 35% and 6% of unmarried female in urban and rural areas respectively had engaged in sexual activity by the age of 18 years[5]. It has also been estimated that 55% of patients seen for STIs are below 24 years of age[6].

Studies conducted in ICDDR,B, Bangladesh Rural Advancement Committee (BRAC), Population Council, Save the Children-USA in Bangladesh among adolescents have consistently documented their generally poor knowledge of sexual and reproductive health (SRH)[7, 8-10]. Associated with this poor knowledge are rising trends in risk behaviors among adolescents, including engaging in sex with SWs[4,7, 11-12]. Youth are involved in sex trade[13], drugs[14] and migrating to other countries where they are exposed to risky sexual behavior[15]. The adolescents typically have unmet needs for Reproductive Health (RH) information and services but their RH needs do not draw attention of parents, schools or the existing health care systems[9].

Sharing information regarding sex and sexuality are not culturally accepted in Bangladesh. Additionally, parents, teachers and community leaders are not comfortable in openly discussing such topics among youth. Most elements of the community (parents, teachers, community and religious leaders) are highly suspicious of outside 'interference' and the dissemination of information on sexuality or STIs[6-8] is not socially accepted.

Prevalence of STIs among SWs, IDUs, truckers, male STI patients and MSM populations has been studied in Bangladesh. Cumulative data of these prevalence studies indicates that the prevalence of STI is high among male and female with high-risk behavior. The high prevalence of STIs makes them more vulnerable to acquisition and transmission of HIV and STIs[12,13, 16-20].

Youth aged 15-24 years account for one-fifth of the total population of Bangladesh and contribute significantly in shaping the future of the nation[7]. Information about knowledge about HIV/AIDS, risk behavior, condom use, HIV and STI disease prevalence, sexual behavioral and practices, among youth in Bangladesh is limited. There was no nationally representative data about youth.

The Ministry of Health and Family Welfare (MOHFW) of the Government of Bangladesh has launched a program, 'Prevention of HIV/AIDS among Young People in Bangladesh' with financial support of Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM) and Save the Children, USA is the Management Agency for

effective implementation and management of the project through partners organizations. The program aims at preventing HIV infection in young people by 1) providing HIV prevention information through mass and print media 2) offering life skills education through youth organizations and clubs, 3) making health services more youth friendly, 4) reviewing and updating social marketing strategies for accessibility of condoms targeted to young people, 5) integrating HIV prevention education and information into school curriculum, 6) designing advocacy and sensitization program targeting parents, religious and community leaders and policy planners and 7) generating evidence-based data to give strategic direction for interventions.

As a part of this programme a national baseline survey on HIV/AIDS was planned and a consortium of ICDDR,B: Centre for Health and Population Research, Bangladesh, Associates for Community and Population Research (ACPR) and Population Council, Bangladesh conducted the baseline survey.

The National Baseline Survey on HIV/AIDS has two parts: a behavioral survey and a serological survey (blood sampling) for selected STIs in a sub sample. The main objective of the behavioral survey was to assess young people's awareness, knowledge and misconceptions about HIV/AIDS and STIs. Questions were asked about patterns of risk behavior, access to information regarding HIV and STI, availability of STI services and condoms in order to understand the existing social norms which may influence young people's participation in HIV intervention program. The serological survey was designed to document the prevalence of syphilis and HSV2 among randomly selected sub sample of the youth.

The other objective of the National Baseline Survey on HIV/AIDS was to document current beliefs and attitudes of gatekeepers (parents, teachers, community/religious leaders), attitudes and opinions of health service providers regarding sexual and reproductive health (SRH) services for youth, and the programmatic views of policy planners within relevant key ministries. The baseline information is expected to be helpful in designing more culturally acceptable program to prevent the HIV epidemic among youth in Bangladesh.

Study Objective

To conduct a nationally representative baseline survey to assess young people's knowledge of HIV/AIDS and STIs; access to information, STI services and condoms; and attitudes of parents/guardians, teachers, community leaders and health service providers toward HIV/AIDS and STI intervention programs; and views of policy planners of relevant ministries.

Specific Objectives

1. To document baseline knowledge of HIV/AIDS and Sexual Transmitted Infections (STIs) among youth aged 15-24 years
2. To determine the current status of access to information, STI services, and condoms among youth
3. To estimate the existing pattern of sexual risk behaviors of youth
4. To determine the prevalence of selected STIs (Syphilis and Herpes Simplex Virus 2 (HSV2)) in a sub sample of youth
5. To assess the beliefs and attitudes of parents/guardians, teachers, community and religious leaders, and health services providers that will influence the dissemination of information on HIV/AIDS and STIs to youth.
6. To document views of policy planners of relevant ministries about HIV/AIDS activities in Bangladesh

Methods

The Baseline HIV/AIDS Survey-among youth in Bangladesh was ecologic, cross-sectional and descriptive in nature. The survey used a national and divisional representative two-stage sample that was selected from the Integrated Multi Purpose Sample (IMPS) maintained by the Bangladesh Bureau of Statistics (BBS) for the implementation of surveys. The IMPS consists of 1000 Primary Sampling Units (PSUs). The primary sampling units in the IMPS were selected with probability proportional to size from the 2001 census frame. A total of 360 PSUs (from 6 divisions and from 2 statistical metropolitan areas) were used in the survey. The population was stratified by urban vs. rural, and married vs. unmarried. Each PSU comprised of approximately 150 households.

A structured, interviewer-conducted questionnaire was designed for the survey. Three separate questionnaires were used for youth, gatekeepers and health service providers. Information from policy planners was obtained through in-depth interviews.

The primary objective of the survey was to obtain baseline estimates of indicators from which intervention programme impacts can be monitored during the intervention period and evaluated at the end of the programme. The sample size should be sufficiently large for each strata to detect the expected changes in the key indicators such as 1) knowledge to prevent transmission of HIV, 2) youth access to condoms and, 3) youth's access to STI services with the desired level of precision, confidence and power.

A sample size of 208 youth per domain (Bangladesh is divided into 14 domains; 6 division x 2 rural vs. urban=12 and 2 metropolitan areas) was considered enough to estimate the key indicators with desired power 0.90 and with 95% confidence. The sample size for youth, married and unmarried, special group male, parents/guardians, secondary school teachers, community and religious leaders, health service providers are shown in the table 1.

Table 1: Estimated sample size by category of respondents

Respondents	Total respondents
Young unmarried male aged 15-24 (1 in 3 Household (HH)	208 x14= 2912
Young unmarried female aged 15-24 (1 in 5 HH)	208 x14= 2912
Young married male aged 15-24 (1 in 6 HH)	208 x14= 2912
Young married female aged 15-24 (1 in 3 HH)	208 x14= 2912
Special group (young unmarried male aged 18-24 years)	880
Parents/ guardians	720
Secondary school teachers/community and religious leaders	720
Health Services Providers	720
Total:	**14,688**

The serological survey was conducted in randomly selected PSUs. The sample size was calculated based on the available prevalence data (1-3% for Syphilis and 10-12% for HSV2). In order to enroll the desired number of respondents 107 randomly selected PSUs were selected. All respondents of the selected PSUs were approached. Blood sample were collected on site after the interview and collection of informed consent.

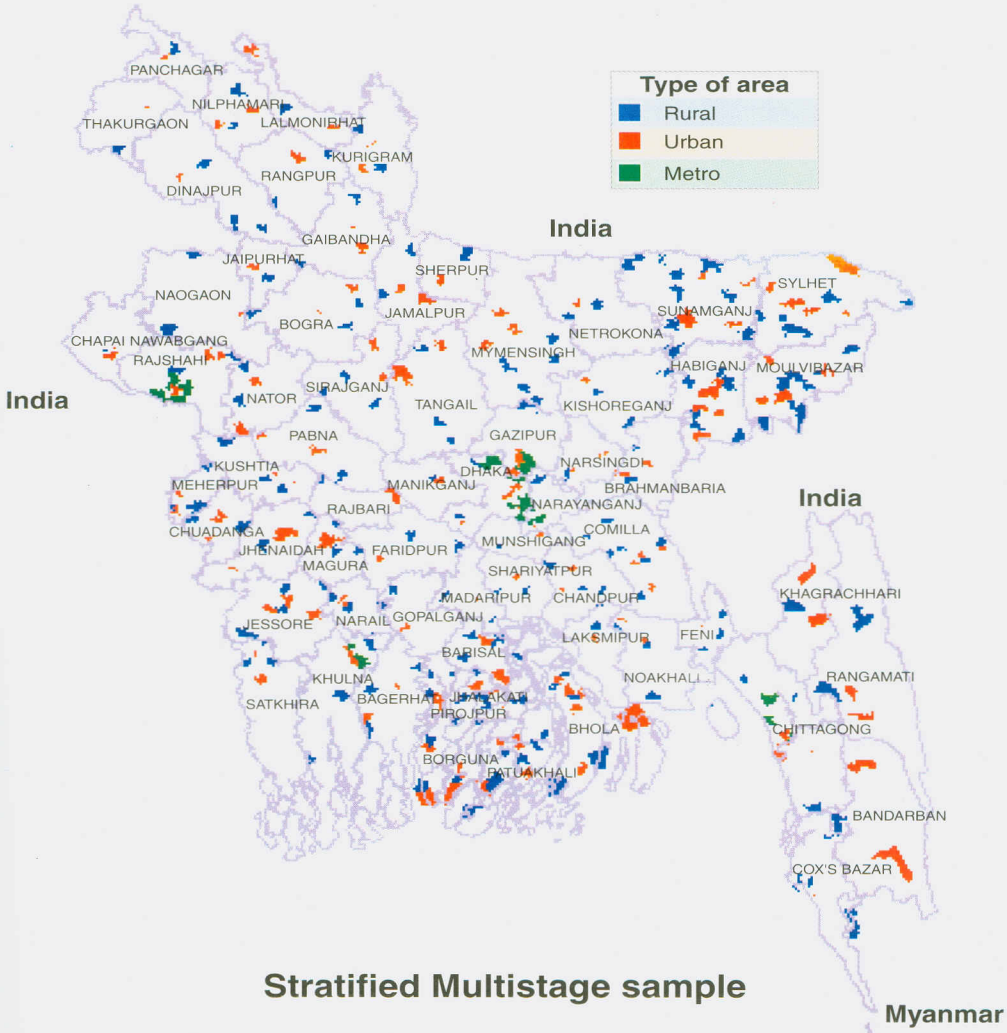


Fig 1. Distribution of randomly selected 360 PSUs of Baseline HIV/AIDS Survey Among Youth in Bangladesh

Data Collection Instruments: The interviews were conducted among 1) youth, 2) parents/teachers/community and religious leaders, and 3) health service providers using separate questionnaire, and 4) policy planners using in depth interview guidelines. The questionnaires were pre-tested in urban and rural Bangladesh. The questionnaires were approved by the Ministry of Health and Family Welfare, NASP, Save the Children-USA, and the Ethical Review Committee of ICDDR,B.

Household listing, data collection and monitoring and supervision: A household listing of all PSUs was done before the survey to identify married-unmarried and male-female youth aged 15-24 years for preparation of the sample frame. The survey was conducted by 20 interview teams from February to April 2005 in two phases. A five-tier monitoring and supervision of data collection was done. This includes 1) supervisors in every team, 2) quality control officers of the survey, 3) officials from NASP, GoB, 4) representatives from the management agency and 5) consortium members.

Specimen collection: For the serological survey, venous blood was collected from youth of selected PSUs. Five cc of venous blood was collected from each respondent in the field. All blood samples were aliquotted and stored at 4 C to 8 C prior to laboratory analyses.

Data Management: The data processing operations consisted of data editing, double data entry, data matching and editing inconsistencies by computer program. The data was analyzed by SPSS software.

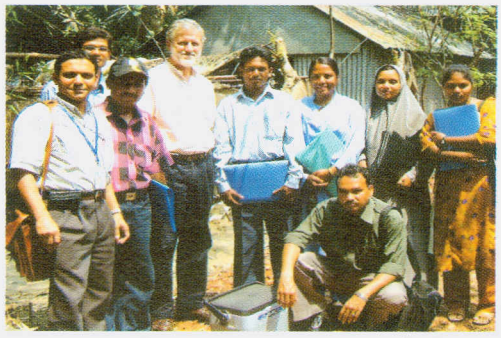
Response Rates interview: A total of 16,892 youth and 1,187 special group male youth were randomly selected from 360 PSUs. Among them 11,989 youth and 740 special group male youth were successfully interviewed. The overall response rates for youth is 70.4%, and that for the special group youth is 62.3% (Table 2). The main reasons for the shortfall were non-availability of youth (because of work, studies, etc.), misclassification of age (eligibility criteria) during listing and sickness. The response rates for gatekeeper and health service provider are also shown in Table 2.

Table 2: Response rate for youth, gatekeepers and health service providers interview

Respondents	Randomly Selected	Interviewed	Response rate (%)
Youth			
Unmarried male	4441	3,035	68.3
Unmarried female	4127	3,067	74.3
Married male	4069	2,759	67.8
Married female	4254	3,128	73.5
Special Group(SG) male	1188	740	62.3
Total Youth	18,079	12,729	70.4
Gate Keeper			
Parents/guardians	720	717	99.6
Teachers/Community Leader/ Religious Leader	723	722	99.9
Health Service Provider	875	875	100.0
Total Sample	**19,674**	**15,043**	**76.5**

Response rate of serological survey: A total of 3,817 youth were approached for serological survey and among them 1980 consented and provided blood for the serological survey. The main reason for refusal was fear of vein puncture or refusal from parents. The overall response rate was 51.8%.

Fig 2. Monitoring and supervision of the survey by officials from NASP, Save the Children, USA and ICDDR, B consortium



Youth survey findings

Profile of youth

The mean age for male and female respondents was 20.2 and 18.4 years respectively. Around 16% of urban and 20% of rural youth had no formal education. Approximately 54% of urban male and 46% of rural male respondents had secondary or higher level of education. The primary occupations of male youth were mainly student, agriculture, trading, and laborer. Female youth were mainly housewives and students. Married males were mainly skilled laborer or in service and agriculture. Seventy two percent of both urban and rural male youth were employed full-time with employment rates higher among the married males. The median monthly income was 2500 Taka for urban males and 2000 Taka for rural males. Five percent of urban and 2% of rural female were employed full time. The median monthly income was 500 Taka for urban and 300 Taka for rural females. The mean age at marriage was 15.5 years for rural and 15.8 years for urban females and 19.5 years for rural and 19.6 years for urban males. The actual age at marriage for both male and female youth was significantly lower than the legal age at marriage for males (21 years) and females (18 years).

Wealth index: An index of economic status was calculated from two asset indexes (urban and rural) constructed using a principal component analysis. Youth were ranked according to the total assets of the household. Youth were then divided into quintiles, from one (lowest) to five (highest).

Exposure to media: Sixty percent of urban and 46% of rural male and 42% urban and 27% of rural females reported exposure to newspapers. Only 5% and 1% of urban and rural females respectively read newspaper everyday. About 75% of urban and 85% of rural males, and 59% of urban and 68% of rural females ever listen to radio. The reported ever exposure to television (TV) was 97% among urban and 92% among rural males. The corresponding estimates for females were 92% and 73% respectively. About 60% of urban and 38% of rural males, and 61% of urban and 28% of rural females view TV everyday.

Awareness and knowledge of HIV/AIDS

Awareness of HIV/AIDS: Ninety three percent of males and 85% of females were aware of HIV/AIDS with awareness being higher among urban youth. The main sources of awareness of HIV/AIDS were TV (78%), followed by radio (44%), peer/youth (24%), and print media (20%). Only 9% of the respondents reported that they have learned about HIV/AIDS from billboards/signboards.

Knowledge of HIV/AIDS transmission: The most common routes of transmission of HIV/AIDS, as cited by male and female youth, irrespective of residence, is the use of non-sterile needles/syringes (38% of males and 46% of females), followed by receiving HIV/AIDS infected blood (26% of males and 32% of females). Only 10% males and 12% of females mentioned that unprotected sex with HIV infected person could transmit HIV/AIDS.

Correct knowledge regarding 6 ways of HIV/AIDS transmission was scored (each correct knowledge was assigned 1 point). The mean number of accurate knowledge among male respondents was 0.9 and among female respondents was 1.2. Only 22% of youth (21% of male and 23% of female) had correct knowledge of at least two routes of HIV/AIDS transmission (Fig 3).

Knowledge of HIV/AIDS prevention: Use of condoms during sex (52% of male, 27% of female), use of sterile syringes/needles (29% of male, 35% of female), avoiding unscreened or HIV/AIDS infected blood during transfusions (27% of male, 38% of female) and limiting sex within marriage (14% of male, 25% of female) were the most cited ways of preventing HIV/AIDS infection. The mean number of knowledge (0-6) about HIV/AIDS prevention was 1.2 for male and 1.3 for female respondents. Only 22.5% of youth (23% of male, 22% of female) had correct knowledge of at least two ways of preventing HIV/AIDS (Fig 4).

Fig 3. Knowledge on ways of HIV/AIDS transmission among male and female youth

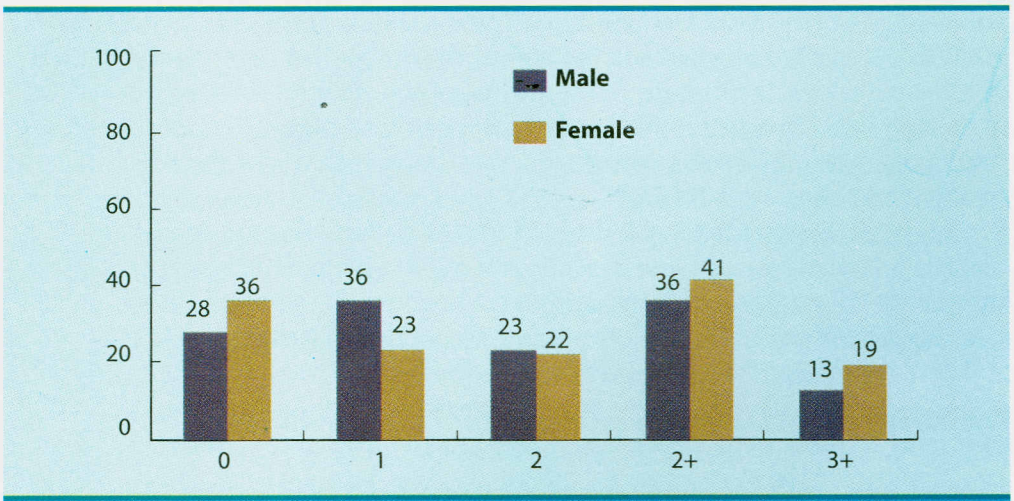


Fig 4. Knowledge on ways of HIV/AIDS prevention among male and female youth

Accurate knowledge of two or more ways of transmission and prevention of HIV/AIDS was higher among the older age groups, among those having secondary or higher education, and to higher assets quintile. Variation in knowledge exists among youth from different divisions and is significantly higher among youth of Dhaka division compared to Sylhet division.

Sexual transmission accounts for more than 90% of HIV transmission globally but less than 15% of youth in Bangladesh knew about such transmission. More than one third of youth do not know about transmission of HIV/AIDS and do not know how to prevent HIV/AIDS.
Campaigns on HIV intervention should specifically focus on sexual transmission of HIV. This heightened awareness may help in increasing condom use.

Better understanding of HIV/AIDS knowledge

Conventional questions are often not enough for overall understanding of knowledge and awareness of HIV/AIDS in a population. To measure important misconceptions related to HIV/AIDS and its transmission and prevention, a composite questionnaire was used in the survey. The composite questionnaire consisted of 21 questions (including 8 questions to assess the general knowledge about HIV/AIDS, 4 questions to assess misconceptions regarding transmission of HIV/AIDS, 5 questions to assess misconceptions regarding prevention of HIV and 4 questions to assess general misconceptions on diagnosis of HIV) with 'true' and 'false' options being used.

Correct knowledge about preventing HIV/AIDS: For most general knowledge items regarding HIV/AIDS transmission, more than 70% of the youth knew the correct answers. Unfortunately, fewer than one third of the youth had correct responses in two important questions addressing anal and oral sex as risk factors for transmission of HIV (Fig 5).

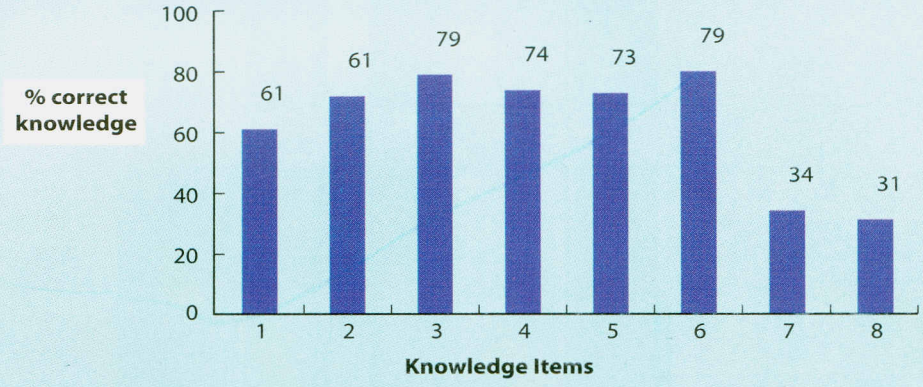


Fig 5. Percentage of youth knew correct answers regarding general knowledge items on HIV/AIDS (knowledge item includes
1= Healthy person may be HIV positive,
2= IDU is a risk factor for HIV/AIDS,
3= One can acquire HIV from blood,
4= Condoms can reduce risk,
5= Limiting sex with one partner reduces risk,
6= Multiple partners can increase risk,
7= Female can have HIV/AIDS by anal sex with male,
8= One can be infected by oral sex)

Misconceptions about transmission and prevention of HIV/AIDS

Existence of high-level of misconceptions was observed among youth. More than half believed that HIV/AIDS can be spread by coughing or sneezing and 50% believed that HIV can be spread through sharing food or water with HIV infected person. Such misconceptions can lead to discrimination against HIV infected persons in the society (Fig 6).

Misconceptions regarding prevention of HIV were even higher. Fifty seven percent, and 73% of the youth believed that washing his/her genitals after sex and using lubricants could prevent transmission of HIV respectively. About 54% of the youth believed that antibiotics could protect them against HIV/AIDS. Such misconceptions may lead to a decreased sense of vulnerability and a greater likelihood of risky sexual behaviors (Fig 7).

Although knowledge regarding HIV is high among youth, misconceptions regarding HIV/AIDS transmission and prevention might reduce their sense of vulnerability, risk perception and may lead to discrimination of HIV positive individuals in the community. Only knowledge is not enough. A majority of youth continues to have important misconceptions and practices that will place them at greater risk for infection and lead to discrimination against HIV positive individuals.

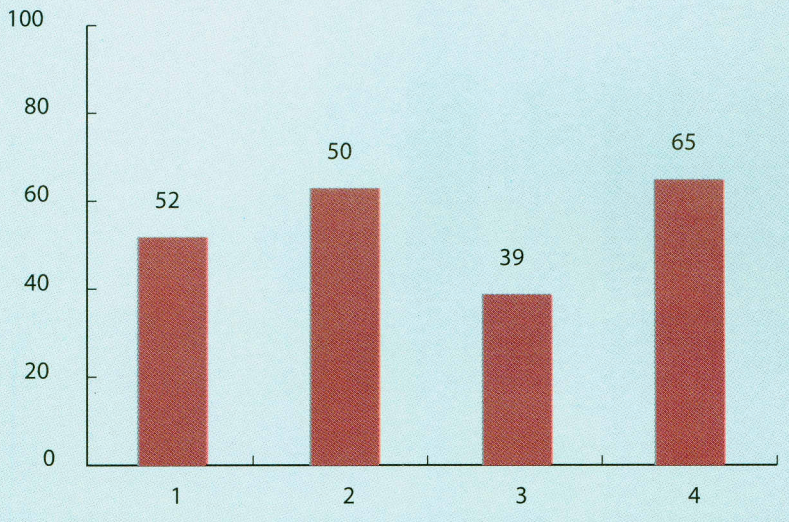


Fig 6. Percentage of youth having misconceptions regarding HIV/AIDS transmission (as measured by composite questions on HIV/AIDS transmission):
1= Cough/sneeze transmits HIV/AIDS,
2= Sharing food/water transmits HIV/AIDS,
3= Sharing bath/pond transmits HIV/AIDS,
4= Deep kissing transmits HIV/AIDS

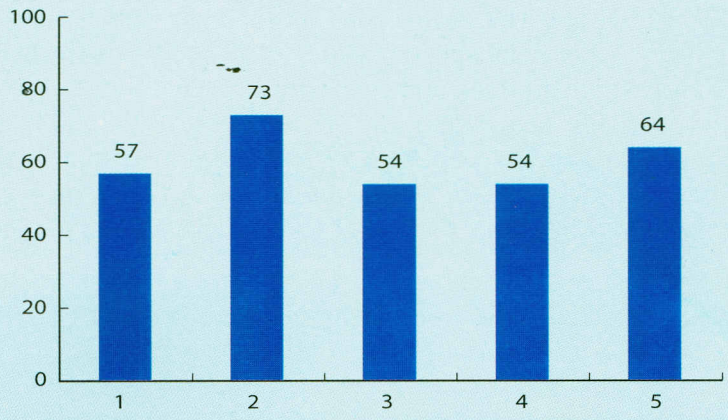


Fig 7. Percentage of youth having misconceptions regarding HIV/AIDS prevention (as measured by composite questions on HIV/AIDS transmission):
1= Washing after sex prevents HIV/AIDS,
2= Using lubricant prevents HIV/AIDS,
3=Taking antibiotic prevents HIV/AIDS,
4= Taking vaccine prevents HIV/AIDS,
5= Sex during menstruation prevents HIV/AIDS

Knowledge of STIs

Knowledge about STI transmission: STIs play an important role in acquisition and transmission of HIV. STI service delivery is considered to be important point of contact for implementation of HIV intervention programmes with populations at risk of HIV. More than half of the males and one third of females in the survey were aware of STIs. Less than half of the males and only 14% of females could name the most common STI, syphilis. Over 60% of youth had no knowledge about STI symptoms. Only a quarter of youth knew that an ulcer in the genital area is a symptom of STIs. One sixth of males and females knew that burning sensations during urination and increased vaginal discharge are symptoms of STI in males and females respectively. Such ignorance may make them more susceptible to infections and result in the spread of disease to others.

Knowledge about STI prevention: Knowledge on STI prevention was poor among all youth. Only 33% of males, and 14% of females had correct knowledge about at least two ways of preventing STIs. Avoiding sex with sex workers, use of condom during sex, and limiting sex within marriage were the most cited ways to prevent STIs. About one-third of males were of the opinion that avoiding commercial sex workers would prevent STIs.

The knowledge of transmission and prevention of STIs were compared with perceived risk for STI and HIV. Fewer than 5% of male and female youth fully understand risks for STI and HIV infection (Fig 8). Male and female respondents with history of pre and extramarital sex, and even with symptoms of STI did not perceive themselves at risk for acquisition of STI and HIV. This might be due to misconceptions regarding HIV transmission and prevention that provided them with a false sense of security. Lack of precaution through ignorance is potentially dangerous since it may influence their risky sexual behavior and reduced condom use.

Knowledge about STI symptoms influences care seeking behavior. Delayed care-seeking increases the risk for acquisition of HIV. As STIs increase the vulnerability to HIV/AIDS, knowledge about STI symptoms will improve care-seeking behavior.
Knowledge on STI among youth is low. Youth at risk do not perceive their risk for HIV. Appropriate interventions to increase the perceptions of risk are essential.

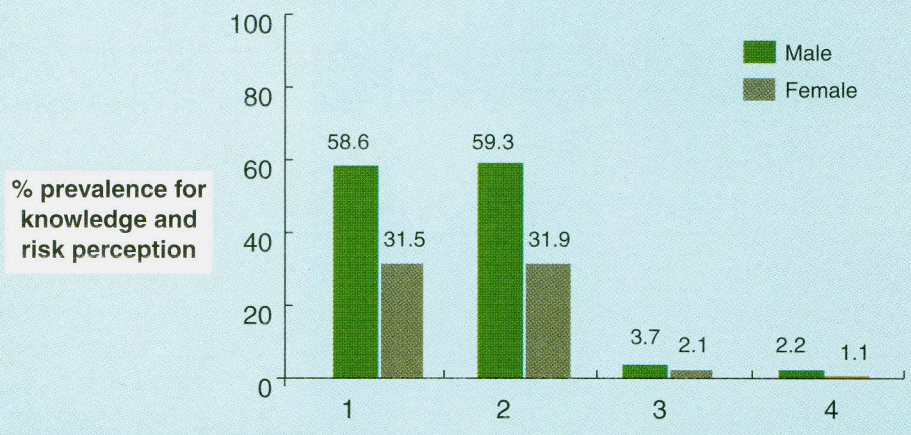


Fig 8. Comparison of knowledge on STI transmission and prevention and STI and HIV risk perception among male and female youth;
1= Any STI transmission knowledge,
2= Any STI prevention knowledge,
3 = Perceived risk for STIs and
4= Perceived risk for HIV

Knowledge about safe sex:

Condom use during sex is one of the safe sex practices. More than two third youth interviewed were aware of safe sex. Among them, about 73% of urban and 61% of rural males knew that condom use during sex is safe sex. The corresponding knowledge among urban and rural females was 42% and 31% respectively. It is interesting to note that around 60% of female respondents considered 'sex with husband' is safe sex. Knowledge about safe sex is positively associated with age, education and asset quintile. Knowledge about condom use as a means of safe sex is relatively higher among youth of Dhaka and Khulna divisions, and it is low among those of Sylhet division.

A large number of youth are not aware of safe sex and most females believe that 'sex with husband' is safe sex. A clear understanding about safe sex and promotion of safe sex practice are essential for HIV/AIDS intervention.

Knowledge about Condoms

Condom use is one of the single most important components of HIV intervention programmes and safe sex practices. The current survey was designed to understand the awareness, knowledge, source and uses of condoms.

More than 90% youth reported to have heard about condoms. The main sources of awareness were TV, peer group/youth and radio. Awareness was higher among married youth. The commonly known sources of condom supply for males were shops and pharmacies. However, females reported hospital/clinic/family planning centers as the most common source of condoms. Approximately 89% of youth reported that they have knowledge regarding availability of condoms as well as access to condoms.

Knowledge of condom as a method of contraception was high. Around 80% of youth recognized condoms as a method of contraception. But only 29% of rural married males and 14% of rural married females knew that condom use can prevent HIV/AIDS.

Condoms are the only contraceptive method that can protect against STI and HIV as well as pregnancy and thus is vital in controlling STIs and HIV/AIDS. Only 35% male and 18% female youth knew about this dual role of condoms. Although STI symptoms are common among males and females only 13% and 3% of males and females respectively knew that condom use can prevent STIs.

Condoms have been introduced in Bangladesh as a contraceptive method and are mainly used in pregnancy prevention in non-commercial sex. Role of condoms in prevention of HIV and STIs needs to be emphasized to increase the condom use in commercial sex. Campaigns for condom promotion should address both STI and HIV prevention.

Sexual practice and condom use

Premarital sex: Sex practices and acts prior to marriage are considered premarital sex. 22% of male and 2% of female youth reported history of premarital sex. The prevalence of premarital sex was slightly higher among rural youth compared to urban. Prevalence of premarital sex among young unmarried male was positively associated with age; 35% of unmarried male aged 21-24 years reported to have premarital sex compared to 11% in the age range 15-17 years. There was no significant difference in the overall prevalence of premarital sex among urban and rural males. Among male who were engaged in premarital sex, 48% of rural and 45% of urban male had their first sex experience at the age of 15-17 years, 38% of rural and 31% of urban male had the first experience at the age of 18-20 years, and about 14.5% have had sex before the age of 15 years (Fig 9).

The most common reported partner in premarital sex was girl friend (58%), followed by commercial sex worker (26%), and relatives (20%). Although the reported prevalence of premarital sex among females was low (2%), the reported data on premarital sex partner of males are suggestive of higher prevalence of premarital sex among females. About 34% of premarital sex was paid sex. Urban youth have relatively higher exposure to commercial sex worker compared to rural youth (31.6% versus 21.6%). Premarital sex was higher among youth with disposable income. About 96% of those who were involved in premarital sex had some money at their disposal for their own use.

Condom use in premarital sex: More than half of the premarital sex was not protected by a condom. Of the 22% of unmarried male having premarital sex, 55% had never used condoms and 26% reported that they have always used condom during sex. However, only 35% reported condom use in last premarital sex.

Extramarital sex practices: The prevalence of extramarital sex was about 7% (8% urban and 7% rural) among married males and 0.3% among married females. The most commonly reported sex partner in extramarital sex was sex workers (57%) followed by girlfriends (32%) and relatives (15%).

The association between premarital and extramarital sex behavior among males was examined and the estimated Incidences of premarital sex are likely to be 3.9 times higher among those who have history of extramarital sex. Between rural and urban males there was very little difference in age at first premarital sex.

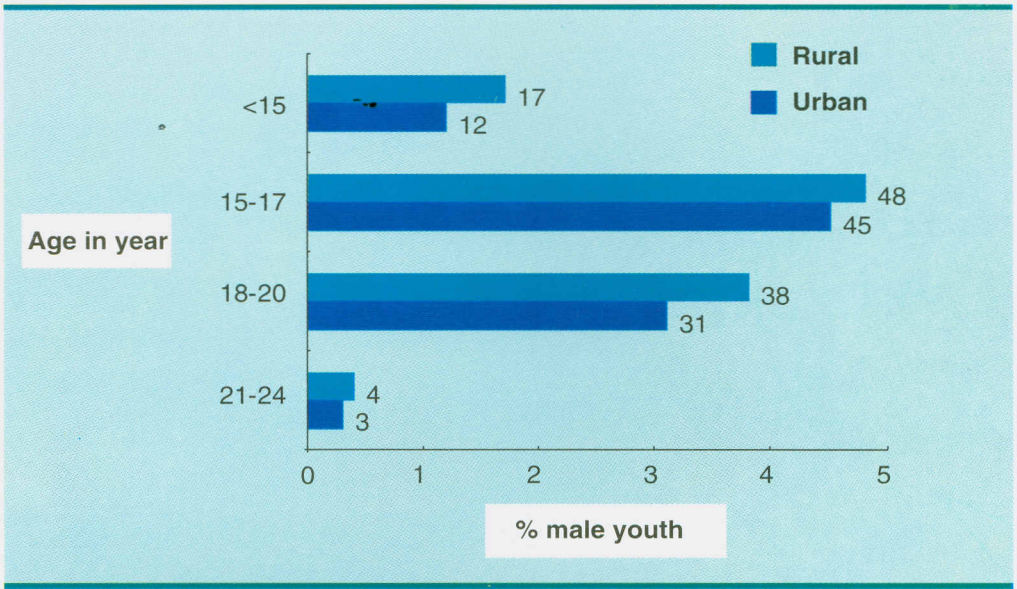


Fig 9. Age at first premarital sex among rural and urban males.Reported

STI Symptoms, care seeking behaviour and barrier to STI services

STI symptoms among youth: Information regarding symptoms suggestive of STIs (urethral discharge, genital ulcer, scrotal pain and burning sensation during urination for males and vaginal discharge, genital ulcer and dysparonea in females) experienced in the last one year among youth was collected. 25% of males and 21% of females had experienced one or more symptoms suggestive of STIs in the last year. Respondents with symptoms of STI were further analyzed according to sexual practice. There was no significant difference in prevalence of STI symptoms between married and unmarried male (25.7% versus 23.3%). However, the unmarried males who had a history of sexual activity also had a higher prevalence of STI symptoms in the last year (38.8%, 312/805) compared to those who did not have a history of exposure (21.5%, 611/2845). Similarly, married males who had a history of sexual exposure before marriage (n=1039) and a history of extramarital sex (n=117) had higher prevalence of STI symptoms, 14% and 28% respectively (Fig 10). Similarly the prevalence of STI symptoms were higher in married women 28.1% (879/3128) compared to 12.4% (379/3067) in unmarried women (Fig 11).

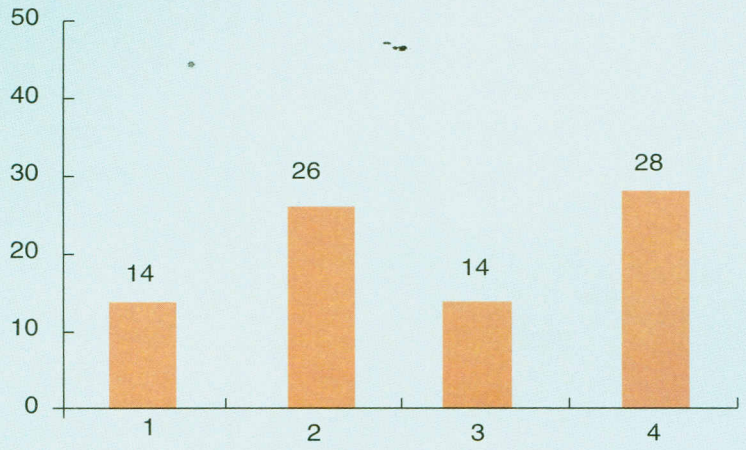


Fig 10. Reported STI symptoms in male youth
1= Unmarried male,
2= Unmarried male with sex exposure,
3= Married male,
4= Married male with extramarital sex

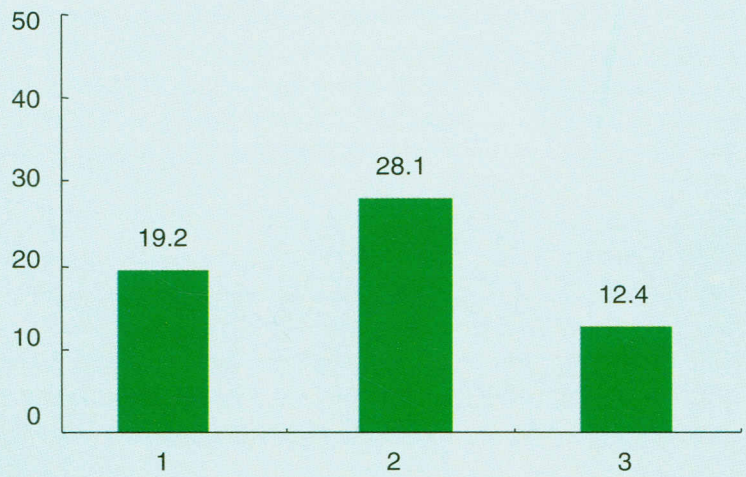


Fig 11. Reported STI symptoms in female youth;
1= All female,
2= Married female,
3= Unmarried female

STI care seeking behavior

Information on STI care seeking behavior of youth with STI symptoms in the last year was collected. Approximately 63% of youth with STI symptoms in the last year visited some types of service provider. However, only 10% (7.3% males and 11.9% females) visited hospitals or clinics for STI services. 33.8% of men and 42.9% women did not seek any care for such symptoms. Alternative care givers rather than medical facilities were preferred by many respondents. 15% of male youth with STI symptoms visited pharmacies for STI management and nearly 20% of all youth with STI symptoms visited traditional or village doctors for STI management (Fig 12).

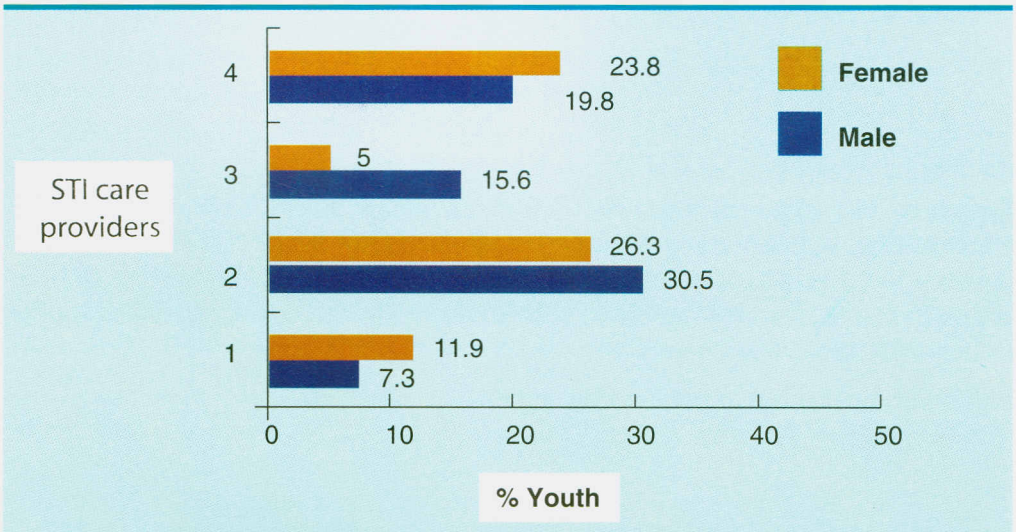


Fig 12. STI care seeking behavior among youth with STI symptoms in the last year. 1= Hospital, 2= Doctor, 3= Pharmacy, 4= Traditional or village doctor

Barriers to STI services: Youth were asked about barriers to STI services including availability of care provider, service hours, willingness of providers, confidentiality, and cost of services. Between 65% to 70% of youth reported that STI services are available. However more than 75% of the youth reported that cost for STI services is a major barrier to STI care seeking behavior. Unmarried female youth (urban 63% and rural 55.3%) were less comfortable in discussing STIs with service providers.

Approximately 25% of youth have symptoms related to STIs. Youth Friendly Health Services must be made available to youth.
Health care facilities should be improved to accommodate the sexual and reproductive health care need of adolescents and adults. Youth Friendly Health Services should introduce STI services.

Substance Abuse: About 8% of male and 0.4% of female youth reported to have consumed illegal substances in life (alcohol, addictive drugs, inhalants, injecting stimulants). Substance abuse was higher among the urban males (10%) compared to rural males (6%). The correlation between substance use and risky sexual behaviors was analyzed. Among unmarried males with a history of substance use, 56% had premarital sexual exposure. Similarly 21% married males with history of substance use reported having extramarital sex. Condom use was also low among males with histories of substance use. About 11% of substance users used condoms in extramarital sex.

In examining the extent of this relationship between premarital sex and drug use, it was observed that the prevalence of substance abuse was about five and half times higher among those who were engaged in premarital sex than those who were not. Substance abuse was the highest among male youth of Dhaka division and lowest in Barisal and Sylhet divisions. Substance abuse was almost equally prevalent in all the asset quintiles.

Exposure to pornography: Information on recent and lifetime exposure to pornography was collected. 75% of the male and 20% of the female youth were exposed to pornographic movies. Of these, 26% male and 6% female youth have had such exposure in the last three months. Exposure to pornography was higher among urban youth.

Males with premarital or extramarital experience (n=1904) have a higher exposure to pornographic material (90% ever exposed and 38% in last three months). Approximately 40% of female respondents with history of pre or extramarital sex (n=101) have had exposure to pornographic material and of those 18% had recent exposure (exposure in last three months). Exposure to pornography was significantly higher among unmarried males with history of sexual experience compared to those without exposure.

Effect of social influence as barriers to HIV/AIDS intervention: Behavior of youth is affected by social support, community norms and individual roles within the community[6]. It is well known that prevention programmes are unlikely to be successful unless acceptable to and supported by communities[4]. Understanding of sexual behavior requires an understanding of norms and values in which the young people interact daily - those that serve to protect or to, conversely, expose youth to risk behaviors. Youth were asked about barriers to receiving STI and condom services, self-efficacy to overcome the barriers, social norms about buying condoms and discussion on reproductive and sexual health issues with parents/family or in the school attended.

Self-efficacy: Comfortableness and confidence of youth to discuss marriage or potential partners with their parents were assessed. Around 40% of urban youth showed confidence in discussing marriage with their parents, however such

confidence was poor among rural youth. Discussion about partners with parents was poor both in urban and rural areas. Only 32% of youth showed confidence in discussing partners with parents.

The unmarried youth should have the skills to deal with decision-making events like marriage in their life with the help of their parents. Culturally acceptable life skill development strategies should be developed and implemented among youth to overcome the barriers.

Sexual and reproductive health (SRH) issues: In Bangladesh youth are not free to talk about SRH issues with parents/guardians and service providers. Large majorities of youth discuss these issues with their friends who are equally ignorant or have poor knowledge about SRH. Views of youth were collected regarding the best possible avenues for providing information on SRH. Seventy Percent male and 55% female youth think that SRH issues should be discussed in schools. However, 76%, 67%, 55% and 45% of urban female, rural female, urban male and rural male youth respectively thinks that SRH issues should also be discussed in families. Male youth feel comfortable to discuss these issues in open environments such as school. Female youth are more inclined to discuss these issues in privacy. Many of the youth interviewed were not enrolled in schools.

Windows for discussion of SRH issues must be made available to youth. Youth believe that such issues should be discussed in school. Including SRH issues in school curriculum might be considered.

Barrier to Condom use: Despite numerous efforts by many intervention programmes, condom use remains unacceptably low in Bangladesh. Potential barriers to accessibility of condoms were assessed.

Accessibility to condoms for youth is restricted by stigma and social norms. Such barriers may be removed by appropriate media and advocacy interventions and involvement of policy planners.

Despite widespread availability, stigma associated with purchasing condoms was found to be a major barrier. Half of the male youth and 82% female youth think that unmarried people should not have a provision for buying condoms. Approximately 60% of unmarried and married males and 30% female youth lacked confidence to buy condoms from a seller who knows their family. It is interesting to note that more than 80% of unmarried youth and 35% married youth think that

buying condom is not socially accepted. They believe that people will think badly of them if they buy condom. Buying a condom from a known seller is not an easy task for them.

Serological surveillance: A total of 107 clusters out of 360 clusters were randomly selected for serological surveillance of selected STIs. In the selected clusters trained paramedics were assigned to collect the blood, separate the serum and store it.

The interviewer in the selected cluster was instructed to inform the respondent regarding blood collection and, whenever necessary, consent was sought from parents and guardians (of underage minors). At the end of the interview, an informed written consent was obtained from the respondents and the paramedics collected 5 cc of venous blood using disposable needle and maintaining universal precaution. After collection, the blood was stored in two aliquots (1 ml and 4 ml) in a cool box. 1 ml aliquot was stored in a EDTA heparin tube to prevent coagulation and the rest was stored in a glass tube for serum separation. The blood specimen in EDTA tube was used for determination of blood group. The blood grouping information was provided to the respondent on the next day. At the end of the day, the paramedics centrifuged the stored blood and separated serum from blood specimens and stored them at -20°C. The stored blood specimens were transported to RTI/STI laboratory at ICDDR,B and the tests were done.

Test for Syphilis: Diagnosis of Syphilis was done by RPR (Rapid Plasma Reagin) and TPHA (Treponema Pallidum Haemaaglutination Test). All specimens were tested by RPR. Those which were positive by RPR were further confirmed by TPHA. A specimen was considered positive if both RPR and TPHA were positive.

Test for Herpes Simplex Virus2 (HSV2): Diagnosis of HSV2 was done by ELISA specific for HSV2 IgG (Dia Sorin, Italy) using the manufacturer's instructions. The specimens positive for HSV2 IgG were further tested for specific IgM antibody against HSV2 by ELISA for confirmation of current infections using manufacturer's instructions.

Table 3. Response rate of youth for serological survey

Respondent	Approached No	Achieved No	Achieved %
Unmarried male	895	454	50.7
Unmarried female	922	424	45.9
Married male	837	475	56.7
Married female	941	498	52.9
Special Group (SG) male	222	129	58.1
Total	**3,817**	**1,980**	**51.8**

Result:

A total of 3814 respondents from 107 clusters was approached for collection of blood and of the 1980 (51.8%) agreed to provide blood. The collection was lowest among unmarried females. This might be due to the fact that unmarried females were worried about venipuncture and in many cases the parents were reluctant to allow their child to provide a blood specimen.

Prevalence of Syphilis: Among the 1980 specimens, 0.75% (15/1980) and 0.6% (11/1980) were positive for RPR and TPHA respectively. 0.6% of the specimens was positive for both RPR and TPHA and was positive for syphilis.

Among the syphilis positive cases, 72% were male. The prevalence of syphilis was higher among married males. Approximately 1% of married males below the age of 24 was positive for syphilis.

Prevalence of Herpes Simplex Virus 2(HSV2): Among the 1980 specimens, 16.2% was HSV2 IgG positive, indicating either a current or past exposure to HSV2 infection. Among the HSV2 positive youth, 61.2% were male and 38.8% were female. The prevalence was highest among unmarried males, followed by married males and the special group of males (see Fig 13). The data is in agreement with behavioral data as males reported higher extramarital and premarital sex. Among the HSV2 positive youth, 14% have reported symptoms of genital ulcer in the last year. The HSV2 positive serum was subjected HSV2 IgM serology for identification of current infection. 10.98% of the subjects who were positive for HSV2 IgG had current HSV2 infection.

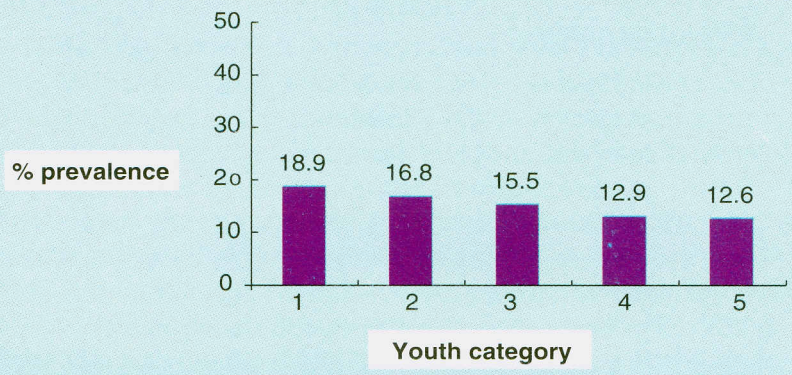


Fig 13. Prevalence of HSV2 infection (ever and current) among different categories of youth;
1=unmarried male,
2= married male,
3= special group male,
4= unmarried female
5=married female

1% of married males below the age of 24 were positive for syphilis. Around 15% of youth were exposed to genital ulcer disease HSV2 before the age 24 and of them 10% had current HSV2 infection. In the developing world, the major public health importance of HSV2 lies in its potential role as a co-factor for HIV transmission. STI services must be made available to youth with HIV diagnosis and counseling facilities.

Gatekeeper survey findings

HIV/AIDS and gatekeepers

The Baseline Survey interviewed 717 parents/guardians of sample youth, 359 secondary school teachers, and 363 religious and community leaders who were purposively selected from survey clusters. The mean age of parents, teachers and religious/community leaders were 46, 44, and 43 years respectively. Nearly 36% of parents had no formal education, 17% had some primary education and another 13% had secondary or higher education. Almost all the teachers had secondary or higher education. Among the community leaders, about a quarter had some secondary education and 64% completed secondary or higher education. About 80% of parents, almost all the teachers (100%) and religious/community leaders (97%) were aware of HIV/AIDS. About four-fifth of gatekeepers are also aware that HIV/AIDS has spread in Bangladesh. Most of them (96%) believe that HIV/AIDS epidemic is likely to spread among youth. Because of their influence upon young people, these gatekeepers are essential for helping to plan and evaluate prevention programs.

Out of six possible correct answers, the mean number of correct knowledge about routes of HIV/AIDS infection (0-6) was only 0.72 among parents, 1.92 among teachers and 1.08 from religious/community leaders. The mean number of correct answers to the six possible ways to prevent HIV/AIDS (0-6) are 0.82 among parents, 2.03 among teachers and 1.28 among religious/community leaders. Only 8% of parents, 30% of teachers and 18% of religious/community leaders know that unprotected sex with HIV/AIDS infected person is the cause of HIV/AIDS transmission.

Knowledge related to HIV/AIDS transmission and prevention is low among the gatekeepers. It is time to think about intervention programs, which will help to increase their knowledge and participation in HIV/AIDS prevention.

Gatekeepers' attitude towards introduction of HIV/AIDS and STIs related education in school was examined in the survey. About 94% of the gatekeepers were in favor of introducing HIV/AIDS and sexual health education at secondary level. Arround 94% teachers in secondary schools reported that they would permit teaching HIV/AIDS and STI issues in their own schools. However only 56% of them were supportive of condom education, even in secondary schools.

Health Service Provider survey findings

A total of 875 health service providers were interviewed. The service providers were purposively selected from government, NGO and private sectors. About half of service providers were qualified doctors with Bachelor of Medicine and Bachelor of Surgery degree (MBBS). The other service providers had paramedic training, diploma in nursing, and diploma in medical assistance. Some of them had training as Rural Medical Practitioner (RMP), Family Welfare Visitor (FWV) and few were pharmacist. Few had a diploma as Licentiate in Medical Faculty (LMF). Both male and female providers were interviewed. The average age for doctors and other types of service providers were 41 and 37 years respectively. About 70% of service providers were male and 30% were female. About 43% of the respondents were from among government providers, 18% from NGO sector, and 39% were private practitioners. Government providers were working in government/municipal hospitals, Upazila Health Complexes (UHC) at sub-district level, Maternal and Child Welfare Centres (MCWC) at district level and Family Welfare Centre (FWC) at union level. NGO providers were from NGO clinics both in rural and urban areas. Private practitioners were either only practicing in their own chamber or providing services through sale of medication.

The providers are engaged in providing sexual and reproductive health services. Most of the service providers are aware of global HIV/AIDS epidemic (99%). Almost equal proportion also perceive that HIV/AIDS epidemic is likely to spread amongst adolescent and youth. According to them commercial sex workers, migrant workers, transport workers, those who visit to commercial sex workers and injecting drug users are the main victims of HIV/AIDS epidemic. Although one-fourth of service providers are not involved in any HIV/AIDS activities, but all of them are willing to support and contribute in HIV/AIDS activities in the form of counseling on prevention of HIV/AIDS, and condom use. Almost all the service providers are in the opinion that condoms should be used to prevent spread of STI (99%) and HIV/AIDS (98%). They approve condom sales to married adolescents and youth. But only 60% approve condom sale to unmarried youth.

Policy Planner interview findings - qualitative interviews with government officials

Policy planners from selected ministries were interviewed to assess their views on HIV/AIDS among youth in Bangladesh. Ten policy planners from the ministries of 1) Education, 2) Youth and Sports, 3) Information, 4) Religious Affairs, 5) Women and Child Affairs, and 6) Health and Family Welfare were interviewed. All policy planners unanimously acknowledged HIV/AIDS as a big problem for Bangladesh. All policy planners opined that youth in Bangladesh are most vulnerable to HIV/AIDS infection because of loose family bondage, uncontrolled freedom, lack of awareness of HIV/AIDS and high risk behavior. It was recognized that males are at more risk of acquiring HIV/AIDS than females. Some policy planners pointed out that TV and pornographic films are influencing youth to risky sexual behavior.

Policy planners unanimously agreed on the importance of raising HIV/AIDS awareness among youth. A majority (7/10) think that the parents should play a key role in making their children aware of HIV/AIDS. More than half of the policy planners think that religious and ethical values should be institutionalized. All policy planners were in favor of introducing HIV/AIDS education in school curriculum. However, 80% of them agreed to have such education from class eight. All policy planners recognized the need for SRH services for youth. Half of the policy planners think that YFHS should provide information regarding RH, HIV and STIs. Almost all policy planners believe that community leaders should play a major role in prevention of HIV/AIDS in Bangladesh. Parents can talk about HIV/AIDS at home; teachers can talk about HIV/AIDS prevention at school; Imams at mosque; and the leaders both at formal and informal community level meetings.

All policy planners agreed that youth in Bangladesh are most vulnerable to HIV/AIDS and concerted effort from all concern is essential for prevention of HIV/AIDS in Bangladesh. The most important program activities identified by policy planners are 1) increasing awareness of HIV/AIDS, 2) introduction of HIV/AIDS education in school curriculum, 3) ensuring YFHS, 4) involving community/religious leaders in HIV/AIDS prevention program and, 5) more active involvement of policy planners in HIV/AIDS prevention programme development.

Priority must be given to a concerted HIV/AIDS prevention effort. Involving all segments of society is essential for the prevention of an HIV/AIDS epidemic among youth in Bangladesh

Conclusion and recommendations

Youth of Bangladesh have high awareness and fairly good knowledge of HIV/AIDS but they have many misconceptions. These misconceptions lead them to risky sexual behavior and reduce their sense of vulnerability. This study shows that the information about HIV/AIDS is important, but only being "knowledgeable" is not enough. Television is a predominant source of information for all types of youth. Among the respondents, only 25 to 35% are illiterate. Although television is a preferred source of information, all media reach important segments of the general youth population. Peers are an important source of reproductive health and HIV/AIDS information but not the parents.

Risky sexual behavior is common among youth and condom use is unacceptably low. Although availability of condoms is fairly high, social norms with stigma associated with purchasing condoms is the major barrier to condom use by youth. Youth have high prevalence of sexually transmitted infection symptoms and STIs but their knowledge and care-seeking behaviors are very poor. 1% of married youth are positive for syphilis and more than 15% of youth had suffered at least one episode of HSV2 infection by 24 years of age.

Efforts should be continued to increase awareness and knowledge. However, contents of the messages must deal with the important misconceptions and the lack of sense of vulnerability among youth. Information on safe sex and condom use will be the most sensitive issues. Since strong barriers to the accessibility of condoms exist, such obstacles must be removed for successful intervention programs.

Gatekeepers' level of knowledge is less than youth. Adults are highly aware and willing to act but they know very little about the existing HIV/AIDS prevention programmes in Bangladesh. Direct contact with gatekeepers is needed which will improve their knowledge, advance to planning and taking action. Programmes should provide support when dealing with less "ready" parents or conservative populations. General support for the information about HIV/AIDS through schools exists. Key barriers also exist regarding sex and condom education.

The service providers have inadequate training. They are very supportive of interventions and express high willingness to counsel, although they have little or no real life experience with HIV/AIDS and STI prevention or treatment. HIV/AIDS prevention/counseling modules tailored to the varied backgrounds of providers are urgently needed. Evidence based practice guidelines to ensure uniformity and quality of care are required for health care providers.

Youth friendly health services are to be ensured at an affordable cost at GoB and NGO facilities. STI/HIV diagnostic capacities must be upgraded with STI and HIV diagnosis, care and counseling facilities. Service providers should be adequately trained to work as a change agent for prevention HIV/AIDS.

Strong public support and back-up plans required to remove barriers of HIV education and condom promotion. Policy planners are aware of the imminent threat of HIV/AIDS and must also be directly involved in program decisions, planning and implementation at all levels.

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