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Awareness of Sexually Transmitted Disease among Women and Service Providers in Rural Bangladesh

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Abstract

Sexually transmitted disease (STD) in rural Bangladesh is currently a topic of great concern. To date, little information is available in the literature regarding its prevalence. It is now known, however, that the current level of STD awareness among the rural population with regard to modes of transmission and means of prevention is inadequate. In 1994, the MCH-FP Extension Project (Rural) of ICDDR,B surveyed 8,674 married women of reproductive age (MWRA) in four rural *thanas* to examine their awareness of STDs. The association between socio-demographic and programmatic factors (variables which affect STD information availability) and awareness of STDs was examined by both bivariate and multivariate analyses. Seven focus group discussions were conducted among groups of the government health and family planning workers and paramedics to assess their knowledge of STDs and attitudes about their prevention.

Only 12 per cent of the original group had even a basic understanding about STDs and how to protect themselves from them. Twenty-five per cent of the women surveyed had ever heard of either syphilis or gonorrhea. Of these women, less than half could mention specific mechanisms involved in the transmission of these diseases. Seven per cent reported that syphilis and gonorrhea are transmitted through sexual intercourse. Thirteen per cent reported that the infections are transmitted from spouses to their partners. Four per cent reported that STDs can be spread by having multiple sexual partners.

The results of logistic regression analysis indicate that awareness of STDs was higher among relatively older women than among younger women. Awareness of STDs was most strongly and positively associated with the education of both the women and their husbands. Awareness of STDs was also found to be higher among women who were more socially mobile (e.g. those who frequent cinemas or mothers' clubs).

The findings of focus group discussions indicate that family planning and health care service providers have a moderate level of STD awareness. Modes of transmission and means of prevention, however, were areas of weakness.

It will, therefore, be necessary, whether to prevent a potential STD epidemic or to combat current STD prevalence, to implement culturally acceptable and affordable means of disseminating knowledge in rural areas of Bangladesh. Training of health care providers will be an essential first step.

Introduction

Sexually transmitted diseases (STDs), particularly HIV/AIDS, are increasingly becoming a major public health concern in many developed and developing countries. The incidence of STDs is increasing at an alarming rate all over the world, and the situation has climaxed with the emergence of the HIV epidemic (1). Asia is now considered to be the new epicentre of the STDs epidemics. Several other STDs have been found to be significant co-factors to the transmission of HIV. In view of the dramatic increase in internal and international migration, along with an increase in high-risk sexual behaviour, it would be reasonable to assume that STDs are on the rise in Bangladesh. Unfortunately, data on STDs in this country are rarely available. One anthropological study reported that people are generally aware of STDs, and they believe that STDs are transmitted through extramarital intercourse, and from prostitutes (2). The prevalence of syphilis, gonorrhoea, and both syphilis and gonorrhea were found to be less than one, four, and less than one per cent respectively among urban MCH-FP clinic attendees (3). A study in Matlab, Bangladesh showed that reproductive tract infections (RTIs), not all of which are sexually transmitted, were found in approximately 22 per cent of the symptomatic women studied. Of these women, 68 per cent had clinical or laboratory evidence of infection; of which STDs were almost eight per cent (gonorrhea 0.4%, chlamydia 2%, trichomonas 5%) (4). Preliminary results of an urban-based study showed that syphilis was found in five per cent of the 1,550 women (5). The preliminary report of a study conducted among rural men and women indicate a prevalence of 0.5-0.9 per cent for syphilis, 0.5 per cent for gonorrhea, and 1.4 - 5.0 per cent for chlamydia (6).

A recent study revealed a high prevalence of STDs due to low educational levels and low-condom use among commercial sex workers (CSWs). Gonorrhea, syphilis, and trichomonas were found to be the leading STDs among them (7). The large number of CSWs in urban and port areas, increasing rates of intravenous (I.V.) drug use, and the widespread use of unscreened blood for transfusion could potentially contribute to the spread of HIV/AIDS and other STDs. Recent studies indicate that STDs and HIV/AIDS risks are increasing for people who have sex with CSWs or

multiple partners (8). Clients of CSWs are often businessmen, illegal traders, military, paramilitary, police personnel, students, labourers, and rickshawpullers (9).

STDs are transmitted from one diseased person to his/her sexual partner through the sexual act. These diseases have been the cause of foetal wastage (spontaneous abortion or still-birth), low-birth weight (premature delivery or intrauterine growth retardation) and congenital or perinatal infection resulting in potentially blinding eye infections, infant pneumonia, and mental retardation (10). Furthermore, the existence of STDs in the reproductive tract increases transmissibility of HIV, the AIDS virus, as much as nine-fold (11).

The prevalence of AIDS is believed to be low in Bangladesh, with an estimated 20,000 HIV-positive persons, based on 68 confirmed HIV-positive cases from various population groups (12). However, epidemics have started during the last ten years in many countries in the region, including India and Burma, which border Bangladesh (7). Although relatively few HIV-positive cases have been identified by the Government of Bangladesh, many more are likely to exist. The sexual behaviour patterns of young adults and adolescents are also changing in this country. Social factors, such as increased urbanization, persistent unemployment and economic problems among different population groups, are resulting in a greater risk of STDs (7). Furthermore, due to poor medical facilities, lack of sufficient screening practices of blood transfusion, widespread use of unsterilized needles and syringes, and unsafe sexual behaviour among some segments of the population, HIV/AIDS in Bangladesh is a disaster, just waiting to happen. The situation, therefore, calls for immediate precautionary steps.

To date, the current study is the only one which has been conducted with regard to awareness of STDs and knowledge of STD transmission mechanisms in rural Bangladesh. As in all communicable diseases, knowledge and awareness of STDs are pre-condition to its prevention, it is our hope that programme managers and policy-makers use these findings to help develop strategies to create STD awareness and preventive mechanisms in rural Bangladeshi men and women.

The best strategy for controlling the spread of infectious diseases, such as STDs and HIV/AIDS, is prevention, or avoiding exposure. Avoiding exposure can mean an extramarital abstinence, but it can also mean condom use, when abstinence is not the case. Prevention of one case of STD can result in the prevention of many subsequent cases. Recent studies suggest that condom use for STD prevention is increasing in selected populations, but it is still infrequent (7).

Objective

The objective of this study was to examine the general awareness of STDs and knowledge of its modes of transmission and means of prevention among rural women and health and family planning (FP) field workers in rural Bangladesh. By "awareness" we mean whether or not the respondent has heard about specific STDs by name, and whether or not they have in-depth knowledge about these illnesses. Assessment of STD awareness and attitudes among rural women and field workers is crucial in the understanding of information needs within these groups, and for developing appropriate Information, Education and Communication (IEC) messages about the prevention, diagnosis, and treatment of STDs. The present study helps identify the extent of the problem (e.g. of lack of awareness) and its implications for future epidemics if the problem is not solved. The gaps in field worker's awareness and understanding will need to be addressed if prevention programmes are to be successful.

Methodology

A survey of 8,674 married women of reproductive age (MWRA) was conducted in 1994 in four rural *thanas* (Abhoynagar, Bagherpara, Keshobpur, and Sirajganj) of Bangladesh. The same women are included in the longitudinal surveillance of demographic, health, and FP behaviour of the Sample Registration System (SRS) of the MCH-FP Extension Project (Rural) of ICDDR,B. SRS has been described elsewhere (13). The Project conducts

operations research to increase the use of health and FP services and contraceptive prevalence through improved strategies for programme management, quality of care, and the sustainability of the health and FP programmes of the Government of Bangladesh. This particular survey collected relevant information on STDs through a variety of questions. These included an open-ended question on awareness of STDs¹; a question inquiring whether or not the respondents had heard about syphilis and gonorrhea, specifically; for those who had heard of gonorrhea and/or syphilis, a question asking how these diseases are transmitted²; and a question asking about how to prevent STDs³.

Qualitative information was also collected from 31 MCH-FP workers in the same *thanas* through focus group discussions by the experienced field staff of ICDDR,B to assess their knowledge of STDs and their attitudes about the prevention of these diseases. Qualitative focus groups were used for the health and FP workers instead of a sample survey because of the small number of providers and the need to identify the full range of issues, beliefs, concerns, perspectives, knowledge, practices, and misconceptions concerning STDs among the workers. The workers were Family Welfare Assistants (FWA), Family Planning Inspectors (FPI), Family Welfare Visitors (FWV), and Medical Assistants (MA). A brief description of the workers is given in a subsequent section.

Key Independent and Dependent Variables

Awareness of any disease that is transmitted through sexual intercourse and knowledge about syphilis and/or gonorrhea were treated as dependent variables in this study.

¹ Do you know any disease(s) which is/are transmitted through sexual intercourse?

² Have you heard about gonorrhea or syphilis diseases and how these diseases are spread?

³ Do you know any contraceptive method which can prevent sexually transmitted diseases?

Table 1 gives a list of the independent variables that were considered in the analysis. Maternal age, parity, education, husband's education and occupation, and religion of the respondent were the socio-demographic variables included in the analysis. Two variables that represented the degree of mobility of women, namely, whether or not the woman frequented (a) the cinema, and/or (b) a mother's club, were also included in the analysis. The following programme-related variables were considered: whether or not the woman ever visited (a) a Satellite Clinic (SC); (b) a Family Welfare Centre (FWC); (c) the *Thana* Health Complex (THC); and (d) whether or not the woman had been visited by a FWA at her home in the previous three months. One contraceptive use-related variable was used for describing the type of contraceptive method used by the woman or her husband.

A brief description of FWAs, FWCs, SCs, and THC follow. FWAs are the grassroots-level FP workers who visit each MWRA every two months to provide counselling on MCH and FP and deliver oral pills and condoms. FWAs are supervised by FPIs. An FWC is a fixed health and MCH-FP service centre, which serves about 4,000 MWRA and their family members, totalling about 25,000 people. Services at FWC are provided by female paramedics, FWVs, and a male paramedic, MA. At FWC, villagers can receive MCH-FP and primary health-care services three days a week. SCs are held twice a week by FWVs at eight spots, scattered in the catchment area of FWC. MWRA can visit SC and receive FP and primary health-care and limited MCH care services. Pills, injectables, IUDs, and management of contraceptive side-effects are all provided at SCs. FWAs refer clients to the service centres for these services. A THC is a full-fledged health centre with several physicians, a hospital, pathological and limited diagnosis facilities, and some facilities for health education. A THC serves an entire *thana* (averaging 200,000 population).

Analysis

Both bivariate and multivariate analyses were carried out to examine the association between the independent variables and the dependent variables. A logistic regression model was used for examining the association between the independent variables and the awareness of syphilis/gonorrhea.

Results

Table 1 shows the distribution of the sample MWRA, according to categories of the independent variables. The levels of awareness of STDs (specifically syphilis and/or gonorrhea) by categories of the independent variables are also shown in Table 1.

Table 1. Distribution of sample MWRA and per cent reporting awareness of syphilis and/or gonorrhea by socio-demographic, cultural, programmatic and other variables

Independent variable	% of women aware of syphilis/gonorrhea	No. of respondents
Total	25.4	8,674
Age (years)		
< 19	12.5	1,720
20-24	21.4	1,720
25-29	28.0	1,609
30-34	33.3	1,323
35-39	31.2	1,079
40+	32.0	1,223
	[$\chi^2 = 261.93$, $p < .001$]	
Parity		
0	14.8	1,325
1	20.1	1,460
2	28.1	1,452
3+	29.4	4,429
	[$\chi^2 = 143.88$, $p < .001$]	
Maternal education		
None	21.5	5,288
Primary	27.8	2,331
Above primary	40.7	1,000
	[$\chi^2 = 173.82$, $p < .001$]	

Contd...

Table 1 (Contd.)

Independent variable	% of women aware of syphilis/gonorrhea	No. of respondents
Total	25.4	8,674
Husband's education	21.5	3,748
None	25.5	1,986
Primary	38.6	1,839
Above primary	[$\chi^2 = 186.47$, $p < .001$]	
Wife's and husband's combined education		
Wife no and husband no	20.7	3,099
Wife no and husband primary	23.8	1,201
Wife primary and husband no	25.0	584
Wife primary+ and husband no	24.6	65
Wife no and husband primary+	27.4	489
Wife primary and husband primary	27.0	649
Wife primary+ and husband primary	33.3	135
Wife primary and husband primary+	37.3	762
Wife primary+ and husband primary+	49.5	588
	[$\chi^2 = 265.76$, $p > .001$]	
Husband's occupation		
Farmers or self-employed	26.2	3,141
Labourers	23.4	3,184
Traders/businessman	30.2	842
Service-holders	45.4	258
Professionals	53.4	148
	[$\chi^2 = 123.03$, $p < .001$]	

Contd...

Table 1 (Contd.)

Independent variable	% of women aware of syphilis/gonorrhea	No. of respondents
Total	25.4	8,674
Religious group		
Muslims	26.1	7,485
Hindus and others	20.9	1,189
	[$\chi^2 = 14.37$, $p < .001$]	
Women's mobility		
Cinema		
Does not go to cinema	24.3	5,230
goes to cinema	32.0	2,343
	[$\chi^2 = 48.87$, $p < .001$]	
Mother's club		
Does not go to club	24.2	3,728
Goes to club	29.1	3,845
	[$\chi^2 = 23.32$, $p < .001$]	
Ever visited Thana Headquarter		
No	24.1	1,576
Visited	27.4	5,997
	[$\chi^2 = 6.95$, $p < .01$]	
Ever visited SC		
No	26.3	5,112
Visited	27.4	2,461
	[$\chi^2 = 0.88$, NS]	
Ever visited FWC		
No	23.9	3,778
Visited	29.5	3,795
	[$\chi^2 = 30.49$, $p < .001$]	

Contd...

Table 1 (Contd.)

Independent variable	% of women aware of syphilis/gonorrhea	No. of respondents
Total	25.4	8,674
Ever visited THC		
No	25.1	533
Been to THC	26.8	7,040
	[$\chi^2=0.68$, NS]	
Visited by FWA in previous 3 months		
No	23.7	3,295
Yes	26.4	5,379
	[$\chi^2=7.95$, $p<.01$]	
Current use of FP method		
Non-users	21.6	4,965
Currently using FP methods	30.4	3,709
Condoms	38.1	257
Pills	32.2	1,349
Injectables	24.8	904
Permanent and IUDs	27.9	870
Traditional methods	39.0	328
	[$\chi^2=130.09$, $p<.001$]	
Area		
Sirajganj	34.9	3,070
Other areas	20.2	5,604
	[$\chi^2=226.40$, $p<.001$]	

The mean age of the sample MWRA was 30 years, and more than 50 per cent of the women had three or more children. Slightly less than two-fifths of the MWRA and about 50 per cent of their husbands had some education. Over two-fifths of the husbands were farmers and two-fifths were labourers. Traders and businessmen made up the next largest group (11%), and the remaining men were either service-holders or professionals. Over four-fifths were Muslims. About one-third of MWRA reported that they frequented the cinema, and about half reported that they belonged to a mothers' club. Over 90 per cent reported that they had been to THC. About one-third reported that they had been to a SC, and one half reported that they had been to a FWC. Over three-fifths reported that they had been visited by a FWA during the previous three months.

Forty-three per cent reported that they were currently using contraceptives (pill, 16%; injectables, 10%; permanent methods or IUDs, 10%; condom, 3%; traditional methods, 4%). Nationally, the contraceptive prevalence rate was about 45 per cent (pill, 17%; injectables, 5%; permanent methods or IUDs, 11%; condom, 3%; traditional methods 8%) during the same time period (14).

According to the findings, awareness varied with the age of a woman, parity, the education of both the woman and her husband, the occupation of husband, religion, mobility, and contraceptive use. Awareness of syphilis/gonorrhea varied from 12 per cent among teenagers to over 30 per cent among women aged 30 years or older. Similarly, 15 per cent of MWRA without children had awareness of STDs, compared to 30 per cent of women who had three or more children. Of MWRA who were uneducated, compared to those who had completed in excess of primary level education, 21 per cent and 40 per cent had awareness of STDs respectively. About 50 per cent of MWRA had awareness if both of them and their husbands had completed primary-level or higher education. Awareness of STDs varied with occupation of husbands, with professionals having the highest and labourers the lowest levels. Muslims had greater awareness of STDs than non-Muslims. MWRA who frequented the cinema or a mothers' club, or *thana* headquarters tended to have higher awareness

of STDs than those who did not go outside their homes. MWRA who have visited FWC had greater awareness than those who had not. Contraceptive users had greater awareness of STDs than non-users. Condom users and traditional method users had the highest level of awareness, followed by pill-users. In the bivariate analysis, MWRA at Sirajganj were almost twice as likely to be aware of syphilis/gonorrhea than MWRA at other thanas.

Table 2 shows the distribution of MWRA, according to their STD awareness. Slightly more than one quarter were aware of some diseases that are transmitted through sexual intercourse. Seven per cent, 7.4 per cent, and 4.2 per cent of respondents reported that syphilis/gonorrhea, vaginal discharge, and genital scabies, respectively are transmitted through sexual intercourse.

Table 2. Distribution of MWRA who know about disease(s) that is/are transmitted through sexual intercourse

Awareness of STD	Number	Per cent (N = 8,674)
Do not know about STDs	6,366	73.4
Know about STDs	2,308	26.6
Syphilis and/or gonorrhea	607	7.0
Genital ulcer	143	1.6
AIDS	28	0.3
Scabies/genital skin allergy	362	4.2
Vaginal discharge	639	7.4
Cannot name the disease	529	6.1

The distribution of MWRA according to whether or not they had heard of syphilis and/or gonorrhea is shown in Table 3. One quarter of MWRA reported that they had heard of syphilis and/or gonorrhea; with 7 per cent mentioning the disease(s) spontaneously and another 18 per cent acknowledging awareness only after prompting.

Table 3. Distribution of MWRA according to whether or not they had heard of syphilis and/or gonorrhea

Awareness of syphilis and/or gonorrhea	Number	Per cent (N=8,674)
Did not hear	6,472	74.6
Heard about syphilis and/or gonorrhea	2,202	25.4
Unprompted	607	7.0
Prompted	1,595	18.4

Table 4 shows the distribution of knowledge of the transmitting mechanisms of syphilis/gonorrhea. Of the 2,202 MWRA who reported that they had heard of syphilis/gonorrhea, slightly over one quarter mentioned that these diseases are spread through sexual intercourse and one-eighth also mentioned that they are spread by an infected spouse. Three per cent mentioned that these diseases are spread through sexual intercourse by those who have multiple sexual partners. However, over half of MWRA who had heard of syphilis/gonorrhea did not know the exact mechanism(s) of transmission of the diseases.

Table 4. Distribution of reported knowledge about mode of transmission of syphilis and/or gonorrhea among those who had heard of syphilis/gonorrhea

Mode of transmission of syphilis/gonorrhea	Number	Per cent
Know transmitted by sexual intercourse	936	42.5
From sexual intercourse	575	26.1
Infection spread from spouse	283	12.9
<i>From sexual intercourse</i>		
with more than one partner	78	3.5
Cited other sources of transmission	57	2.7
Lack of hygienic practice/cleanliness	35	1.7
Others	22	1.0
Don't know exactly how transmitted	1,209	54.6
Total	2,202	100.0

Logistic Regression Results

Table 5 presents odds ratios and 95 per cent confidence intervals (95% CI). The odds ratios, an approximation of relative risk (RR), are derived from the logistic regression coefficient (an exponent of the coefficient). For example, awareness of syphilis and/or gonorrhea was 1.36 [$\exp(0.3078)$] times higher for Muslims than non-Muslims. Similarly, awareness of syphilis and/or gonorrhea was 1.32 [$\exp(0.2772)$] times higher for women who visited FWC than women who did not.

Table 5. Logistic regression odds ratios measuring the association between socio-demographic, programmatic and other factors and the awareness of syphilis and/or gonorrhea

Factors	Odds ratio	95% CI
Age	1.04***	(1.03, 1.05)
Maternal education		
None (rc)†	1.00	-
Primary	1.55***	(1.34, 1.78)
Above primary	2.93***	(2.38, 3.60)
Husband's education		
None (rc)	1.00	-
Primary	1.27***	(1.10, 1.46)
Above primary	1.68***	(1.42, 1.98)
Husband's occupation		
Farmer (rc)	1.00	-
Trader/businessman	1.12	(0.94, 1.36)
Professional	1.72*	(1.19, 2.49)
Service holder	1.36*	(1.02, 1.81)
Labourer	1.04	(0.91, 1.19)
Religion		
Non-Muslim (rc)	1.00	-
Muslim	1.36**	(1.13, 1.64)
Woman's mobility		
Does not go (rc)	1.00	-
Goes to cinema	1.19*	(1.05, 1.37)
Goes to mother's club	1.26***	(1.11, 1.42)

Contd...

Table 5 (Contd.)

Factors	Odds ratio	95% CI
Woman visited FWC		
No (rc)	1.00	-
Yes	1.32***	(1.18, 1.48)
Visited by FWA in prior 3 months		
Not visited (rc)	1.00	-
Visited	1.02	(0.91, 1.15)
Current use of contraception		
Not using (rc)	1.00	-
Pill	1.55***	(1.32, 1.81)
Injectables	1.03	(0.86, 1.26)
Permanent and IUD	1.37**	(1.13, 1.67)
Traditional	1.31**	(1.09, 1.57)
Condom	1.49*	(1.09, 2.03)
Area		
Other areas (rc)	1.00	-
Sirajganj	2.71***	(2.39, 3.08)

† rc=reference category; *p<.05; **p<.001; ***p<.0001.

The association between the independent variables and the awareness of syphilis/gonorrhea is shown in Table 5. In general, the association is in the same direction and strength as was found in the bivariate analyses shown in Table 1, with the exception of one case. In the bivariate analysis, the association between the FWA visitation and the awareness of syphilis/gonorrhea was significant. The reverse is true for the multivariate logistic regression analysis.

The association between the maternal education and the awareness of syphilis/gonorrhea was stronger than the association between the husband's education and awareness, although education of both wife and husband had a significant positive effect on STD awareness. Women whose husbands were professionals had greater awareness of syphilis/gonorrhea than women whose husbands had other occupations. Muslims were also found to be more aware of STDs than non-Muslims.

Women who were more mobile (i.e. those who frequent the cinema or a mothers' club) had significantly higher awareness than women who did not go to these places. Women who visited FWC had significantly higher awareness than those women who did not. Significantly greater awareness with regard to syphilis/gonorrhea was found among pill and IUD users and women who had been sterilized, as well as traditional method, and condom users, than among non-users or injectable users. Women at the Sirajganj area of Rajshahi division had about three times greater awareness of syphilis/gonorrhea than the women at the other three thanas of Khulna division.

Qualitative Analysis

Seven focus group discussions (FGDs) were conducted separately with the ICDDR,B Extension Project staff acting as facilitators and moderators. Two of FGDs were made up of 14 FWAs; one with 7 FWVs; one with two FPIs; and one with eight MAs. To assess awareness, knowledge regarding transmission mechanisms, and means of prevention, workers were asked a set of pre-determined questions. The health and FP workers were first asked if they had heard of diseases that are transmitted through sexual intercourse. Then they were asked about their knowledge of syphilis and gonorrhea, and whether they were knowledgeable about the ways in which these diseases are transmitted. The workers were also asked whether they knew about diseases that are transmitted sexually among rural men or women. Then, they were asked about health visits and complaints made to them by rural men or women suffering from STDs. Workers were also asked whether they knew about the means of prevention and treatment of STDs. They were asked whether they knew about HIV/AIDS and the preventive mechanisms which can be used for preventing STDs, including HIV/AIDS. The analysis for each group is summarized below.

The FGDs revealed that most FWAs, FWVs, MAs, and FPIs did know about STDs. Most had heard about syphilis/gonorrhea, but they did have some misconceptions. Some reported that wearing the clothes of an infected person was a means of STD transmission. Some of the FWAs reported that the use of a dirty napkin during menstruation can cause itching, which, in turn, can lead to an STD infection. Some FWVs and MAs reported that an injury during a hair cut or shave in a saloon, with an infected blade, is one means of STD transmission. FWVs and MAs also reported that blood transfusion from an infected person and use of unsterile syringes are other ways STDs can be transmitted.

Some FWAs and most FWVs and MAs, however, reported that STDs are transmitted through sexual intercourse with an infected spouse or partner. They also reported that males or females who have multiple sex partners are at risk for such diseases.

Some FWAs, FWVs, and MAs stated that both men and women infected with STDs tend to hide this fact, and usually do not seek care. FPIs also reported that unless the condition becomes advanced, rural men and women do not seek the treatment of qualified medical professionals. They reported that, generally, the infected people first go to homeopathic doctors or unqualified medical practitioners (kabiraj) for treatment and only seek the help of qualified practitioners in extreme cases. FWAs usually refer STD cases to a clinic or THC when they are approached for advice or treatment. FWVs and MAs reported that they share STD information with those clients who come to them for treatment.

In general, FWAs, FWVs, and MAs were also knowledgeable about AIDS. Some of them reported that AIDS is an incurable and fatal disease. FWVs and MAs generally knew that AIDS is spread through sexual intercourse with infected persons. Several FPIs reported that AIDS is spread only through sexual intercourse.

Most FWAs reported that STDs can be prevented through the use of condom. All of them knew that condoms serve a double purpose: birth control and STD prevention. FWAs said that strict adherence to religious codes also helps prevent STDs. All of the health workers believed that rural men and women should be given counselling on STDs and their modes of transmission. They said that couples should be told to use condoms and be warned against having multiple sex partners and going to brothels. They also expressed the idea that village leaders should enforce social rules, and that religious codes of life should be strictly followed (i.e. abstinence from pre-marital or extramarital sexual activity) for the prevention of STDs.

Discussion

The findings of the present study suggest that women in the rural areas of Bangladesh are not sufficiently aware of STDs and their modes of transmission. Even after probing, only one quarter of them were aware of the STDs, syphilis, and gonorrhea. Similarly, only one quarter of women spontaneously reported knowledge about any STD. Furthermore, less than 12 per cent could specify any transmission mechanisms. Very few were aware of AIDS and its modes of transmission. In fact, less than one per cent of the respondents with minimal awareness were aware that AIDS is an STD.

Health and FP workers had some awareness of STDs, including AIDS, but there were misconceptions about the modes of transmission. Both the male and female paramedics, and the majority of the male workers had a better knowledge of STDs than the other female workers. Infected clients tended to contact paramedics or physicians only when their diseases were in advanced stages. Some workers believed that strict adherence to religious codes, which discourage extramarital sexual relationships, can help prevent STDs. Most paramedics and FP workers knew that condoms prevent STDs and stated that condoms should be promoted as a means of preventing STDs as well as a method of contraception. Three per cent of couples in the study population were currently using condoms as a primary method of contraception at the time of the survey.

One factor that the survey could not address was condom use as a secondary method for the control of STDs. Promotion of condom use, in this capacity, in fact, runs contrary to very strong cultural and religious attitudes. Although the workers gave lip service to the idea of condom promotion, full-scale campaigns on the use of condoms during extramarital intercourse or intercourse with prostitutes may pose a serious challenge to most, if not all of the health and FP workers. As we discovered in the focus group discussions, many workers would prefer to see that the offenders are seriously dealt with legal authorities.

Among the rural women, the strongest positive association was between the awareness of STDs and the woman's education. Awareness of STDs was also higher among the relatively older women than among the others, probably reflecting a longer exposure to sexual relationships, both personal and vicarious, and the corresponding risk of diseases. In contrast, lower awareness among women with higher parity probably indicates a

process of selectivity. It is possible that women who were aware of STDs and other diseases were also more aware of the availability of health, FP and other resources. Our findings indicate that contraceptive users are more likely to know about STDs than non-users. It follows, then, that women with greater STD awareness would be more likely to use contraception and, thus, have fewer births.

The positive association between attendance at SC or FWC and awareness of STDs could also be a reflection of the selection process rather than the effect of education or counselling by the paramedics on STDs. Those women who had higher awareness of STDs were likely to attend SC or FWC to receive MCH-FP services. As much as we would like to believe otherwise, health and FP programmes have not yet developed educational or counselling programmes on STDs. Moreover, considering the limited knowledge of the FP health workers, it is not probable that this relationship is causal. The higher awareness of STDs among those who had better mobility also seems to be a selective result, since women with greater mobility were also more likely to visit SC and FWC.

Women in the Sirajganj area were more aware of STDs than those in other areas. One logical reason for this could be a higher prevalence of STDs in the Sirajganj area, resulting from the history of a registered brothel there. Another possible explanation could be that because of the brothel, increased public health efforts have been implemented there to raise STD awareness. Practising physicians in Sirajganj reported that they currently receive a sizeable number of STD cases. In an inquiry in a private diagnostic laboratory in Sirajganj, we found 114 blood samples were tested. Twenty-eight of those tested positive for venereal diseases. Physicians commented that males who are involved in businesses which require frequent travel to distant areas are at higher risk of contracting these diseases.

Policy Implications and Recommendations

These findings have strong policy implications. The Bangladesh Health and FP Programme should take steps immediately to prevent an impending epidemic of STDs and HIV/AIDS. As condoms play a major role in most strategies for preventing STDs, including HIV/AIDS, health planners and policy-makers should consider the wide promotion of condom use. Improved facilities for condom distribution will be needed. People should

be educated not only on the effectiveness of condoms in preventing STDs but also on how to use them, who should use them, how to store and dispose of them and where to procure them. Strategies which influence men should especially be advocated. An important step would be to provide some IEC on STD prevention activities at the brothels themselves. One encouraging sign is that familiarity with condoms and their use seem to be increasing in urban areas (14). Although STD IEC is not being provided by FWAs, condoms are being distributed at the household level for FP purposes in rural areas.

IEC activities will need to offering of extensive education on sexual behaviour (both acceptable and unacceptable) for rural men and women, in addition to the current FP messages. IEC messages should be developed for FWAs, so that they can be delivered to the homes of the high-risk men and women. Although it is unlikely that FWAs will discuss these issues directly with the men who practise high-risk sexual behaviour, the issues will be discussed with their wives, so that they will be made aware of what they can do to protect themselves from STDs.

Health and FP workers should be trained on the actual mechanisms of transmission and prevention of STDs, so that they can provide education and counselling to their clients. Service providers need to be informed that STDs, such as syphilis, gonorrhea, and HIV/AIDS, are transmitted through blood transfusions, and in the case of HIV/AIDS, through reused needles and syringes. It is also crucial that the FP workers be made aware of the levels and varieties of high-risk sexual behaviour which is actually occurring in Bangladesh since their moralistic reaction may have been provoked, in part, by the denial that such activity is occurring.

Mass media public health awareness campaigns about STDs and HIV/AIDS are needed as well as school-based family life education classes, including these topics. Considering the education level of much of the target population, information on STD awareness and transmission mechanisms should be made available in the appropriate form (i.e. especially catering to those who cannot read). Educational programmes which are culturally acceptable, affordable, and suitable for exhibition at cinemas and mother's clubs should be developed to help disseminate information about the transmission of STDs and the use of condoms in the prevention of STDs. Further studies are, therefore, needed to investigate the prevalence of STDs among rural men and women in Bangladesh.

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MCH-FP Extension Work at the Centre

An important lesson learned from the Matlab MCH-FP project is that a high CPR is attainable in a poor socioeconomic setting. The MCH-FP Extension Project (Rural) began in 1982 in two rural areas with funding from USAID to examine how elements of the Matlab programme could be transferred to Bangladesh's national family planning programme. In its first years, the Extension Project set out to replicate workplans, record-keeping and supervision, within the resource constraints of the government programme.

During 1986-89, the Centre helped the national programme to plan and implement recruitment and training, and ensure the integrity of the hiring process for an effective expansion of the work force of governmental Family Welfare Assistants. Other successful programme strategies scaled up or in the process of being scaled up to the national programme include doorstep delivery of injectable contraceptives, management action to improve quality of care, a management information system, and developing strategies to deal with problems encountered in collaborative work with local area family planning officials. In 1994, this project started family planning initiatives in Chittagong, the lowest performing division in the country.

In 1994, the Centre began an Urban MCH-FP Extension Project in Dhaka (based on its decade long experience in urban health) to provide a coordinated, cost-effective and replicable system of delivering MCH-FP services for Dhaka urban population. This important event marked an expansion of the Centre's capacity to test interventions in both urban and rural settings. The urban and rural extension projects have both generated a wealth of research data and published papers.

The Centre and USAID, in consultation with the government through the project's National Steering Committees, concluded an agreement for new rural and urban Extension Projects for the period 1993-97. Salient features include:

- To improve management, quality of care and sustainability of the MCH-FP programmes
- Field sites to use as "policy laboratories"
- Close collaboration with central and field level government officers
- Intensive data collection and analysis to assess the impact
- Technical assistance to GoB and NGO partners in the application of research findings to strengthen MCH-FP services.

The Division

The reconstituted Health and Population Extension Division (HPED) has the primary mandate to conduct operations research to scale up the research findings, provide technical assistance to NGOs and GoB to strengthen the national health and family planning programme.

The Division has a long history of accomplishments in applied research which focuses on the application of simple, effective, appropriate and accessible health and family planning technologies to improve the health and well-being of the underserved and population-in-need. There are several projects in the Division which specialize in operations research in health, family planning, environmental health and epidemic control measures which cuts across several Divisions and disciplines in the Centre. The MCH-FP Extension Project (Rural), of course, is the Centre's established operations research project but the recent addition of its urban counterpart - MCH-FP Extension Project (Urban), as well as Environmental Health and Epidemic Control Programmes have enriched the Division with a strong group of diverse expertise and disciplines to enlarge and consolidate its operations research activities. There are several distinctive characteristics of these endeavors in relation to health services and policy research. First, the public health research activities of these Projects focus on improving programme performances which has policy implications at the national level and lessons for international audience. Secondly, these Projects incorporate the full cycle of conducting applied programmatic and policy relevant research in actual GoB and NGO service delivery infrastructures; dissemination of research findings to the highest levels of policy makers as well as recipients of the services at the community level; application of research findings to improve programme performance through systematic provision of technical assistance; and scaling-up of applicable findings from pilot phase to the national programme at Thana, Ward, District and Zonal levels both in the urban and rural settings.



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