

AN UPDATE ON THE PREVALENCE OF HIV/AIDS IN BANGLADESH

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Abstract. The National AIDS Committee was formed in 1985 to develop and support policies that prevent transmission of human immunodeficiency virus (HIV). In 1990, the Institute of Epidemiology, Disease Control and Research in the Ministry of Health began sero-surveillance for AIDS/HIV infection. Convenience sampling was conducted among prisoners, sailors, truckers, antenatal attendees, repatriated Bangladeshi workers, and brothel-based prostitutes in Dhaka. In 1994, commercial sex workers in other high-risk areas were included in surveillance activities. Among over 75,700 HIV tests through 1998, 119 have been confirmed positive for HIV. While the cumulative HIV prevalence rate was only 1.5/1,000 tests, it was significantly higher among men ($p < 0.0001$) than among women. The rates among men were as high as 28/1,000 tests in 1996 and 21/1,000 tests in 1997. Almost 50% of the reported HIV cases are from cities on the border of India and Myanmar. It is anticipated that HIV transmission will increase further given the high prevalence of risk behaviors, core high-risk groups, and extreme poverty.

INTRODUCTION

Bangladesh is a small country surrounded by India and Myanmar on three sides and the Bay of Bengal to the south. There is substantial travel between Bangladesh and nearby HIV-endemic countries including India, Thailand, and Myanmar. Bangladesh is the ninth most populous country in the world, with about 124 million people (UNPF, 1998). About 83% of the population are Muslim, 11% Hindu, and the rest Buddhists, Christians, and others (Wright, 1998). Agriculture is the mainstay of the economy.

In October 1989 the first HIV positive case was detected in Bangladesh (Rahman, 1993). The person was a foreigner. The first Bangladeshi HIV positive (a migrant worker) and the first AIDS patient (a seaman) were detected in 1990 (Rahman, 1993). Most current information comes from point prevalent surveys conducted on small numbers of individuals engaged in high-risk behavior (Rich *et al*, 1997; Ruhul, 1994; Khawaja *et al*, 1996). These studies suggest that foreign nationals and Bangladeshis who have worked abroad in the Gulf States or else-

where, or have been seafarers, make up a sizeable portion of the HIV/AIDS cases (Khawaja *et al*, 1996; Islam, 1998). Cases of HIV have also been found among sexually promiscuous individuals, blood recipients, and prisoners (Rahman, 1993; Ruhul, 1994; Khawaja *et al*, 1996; Islam, 1998; Ariff *et al*, 1996).

HIV/AIDS is not a major public health problem in Bangladesh. Sero-surveillance conducted so far by many organizations clearly indicated a low prevalence (<1%) of HIV/AIDS (Islam, 1998; Ariff *et al*, 1996). Yet, recent reports on the risky sexual behavior of several core groups with foreign contacts and a high prevalence of the disease in neighboring countries make the country very vulnerable (Sarkar *et al*, 1998).

Bangladesh is currently a low prevalence but high-risk country for HIV (Islam, 1998). Bangladesh is a very conservative rural society where the awareness and knowledge levels about AIDS and other transmissible diseases are still among the lowest in the world (Mushtaque *et al*, 1998). Condom use is very low in high risk groups (Sarkar *et al*, 1998). The prevalence rates of STDs are high, among high-risk individuals such as migrant workers and commercial sex workers (Sarkar *et al*, 1998). Bangladeshi migrant workers or their spouses form a major portion of the identified HIV positive persons in Bangladesh (Khawaja *et al*, 1996). Lifestyle risk factors and geographic proximity to India, Myanmar and Thailand, countries experiencing a serious HIV/

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AIDS epidemic, make Bangladesh a high-risk location for the diffusion of HIV (Khawaja *et al*, 1996). The lifestyle factors that put people at risk include internal and external migration, engaging in commercial sex, failure to use condoms, having male-to-male sexual encounters, and reusing contaminated needles in medical therapeutic settings as well as in the context of illicit drug use (Khawaja *et al*, 1996).

While the conservative social, cultural, and religious beliefs of Bangladeshis may be a partial barrier to spread of the infection, a low literacy rate, poverty, and the presence of numerous high-risk core groups may facilitate HIV transmission (Sarkar *et al*, 1998). This suggests potential for the rapid spread of HIV once introduced in this high-risk population. Previous sero-surveillance reports indicate that Bangladesh is in the early stage of the epidemic (Islam, 1998). Bangladesh is therefore one of the very few countries in the world where there is still hope for prevention of an explosive epidemic outburst of HIV/AIDS (Sarkar *et al*, 1998). This report presents the findings and recommendations of the national surveillance for HIV and AIDS in Bangladesh in the first years of the epidemic.

MATERIALS AND METHODS

Since 1990, the Institute of Epidemiology, Disease Control and Research (IEDCR) of Ministry of Health in Dhaka, Bangladesh has been conducting surveillance activities for HIV/AIDS in Bangladesh. Under the National Plan for AIDS Prevention, five laboratories in different national institutions were set up to diagnose HIV infection using the Particle Agglutination Test (PAT). The results were confirmed with an ELISA (Abbott) test provided in Dhaka as a more affordable alternative to the Western blot confirmation. Testing was conducted only in Dhaka until 1994 when work was expanded to Chittagong, Narayanganj, Jessore, Khulna and Sylhet. Convenience sampling methods were adopted. Surveillance was carried out using a combination of sentinel surveillance and HIV sero-surveys. Several different risk exposure groups such as sexually transmitted disease (STD) patients, injection drug users, pregnant women seeking prenatal care, professional blood donors, sex workers, sailors, long distance truck drivers, tuberculosis patients, non-resident Bangladeshis, and persons with clinically-suspected HIV infection were recruited.

RESULTS

The first case of HIV infection was detected in 1989 and the first AIDS case was noted in 1990 (National AIDS Committee, 1990). There is a consistent rise in the number of HIV positive cases in the 1989-1998 period. The mean age of the positive persons was 32 years at diagnosis and the age range was 1 to 56 years (Table 1). Among the identified HIV cases, almost 50% were from cities near the borders, 25 were from Sylhet (near the Indian border), and 20 from Chittagong (well-known port and popular tourist spot located near Myanmar).

Among 75,791 persons tested, there were 119 cases of confirmed HIV infection, 97 men and 22 women (Tables 2 and 3). While the cumulative HIV prevalence rate in Bangladesh was only 1.5/1,000 tests, the prevalence rate among men was much higher during the last few years. In average, males were ten times more likely to be HIV positive as compared to females RR 10.08 95% CI [6.3, 16.2], $p < 0.00001$. In 1996, the rate among men was 32.5/1,000 tests and in 1997, it was 21/1,000 test (Table 2). Women are more likely to be tested than men (Table 2).

DISCUSSION

The National AIDS Committee estimates that there may be a total of more than 20,000 HIV positive persons in Bangladesh (Islam, 1998). It is however not possible to state the magnitude of the problem given the non-systematic nature of the sampling to date. Our limited surveillance data still suggest that men are significantly more likely than women to be HIV positive (Table 1), and that border cities like

Table 1
Cumulative HIV infection by age group and sex as of 1998.

Age group	Female	Male	Total
≤04	0	1	1
05-14	2	0	2
15-19	2	0	2
20-29	7	41	48
30-39	3	21	24
≥40	1	5	6
Not known	7	29	36
Total	22	97	119

Table 2
HIV test results in Bangladesh from 1989-1998.

Year	Females			Males			Total		
	N	#	P	N	#	P	N	#	P
1989	9,235	0	0	6,231	0	0	15,466	0	0.06
1990	2,905	0	0	868	3	3.5	3,773	3	0.8
1991	13,980	2	0.1	4,177	4	1.0	18,157	6	0.3
1992	4,735	0	0	1,415	4	2.8	6,150	4	0.7
1993	12,498	2	0.2	3,734	10	2.7	16,232	12	0.7
1994	2,548	4	1.6	1,561	9	5.8	4,109	13	3.2
1995	1,330	1	0.8	816	12	14.7	2,146	13	6.1
1996	3,750	7	1.9	893	29	32.5	4,643	36	7.8
1997	612	2	3.3	630	13	20.6	1,242	15	12.1
1998	1,060	4	3.8	2,813	13	4.6	3,873	17	4.4
Total	52,653	22	0.4	23,138	97	4.2	75,791	119	1.6

Note:

N = Sample size tested

= Number of HIV tests confirmed positive with ELISA

P = Prevalence rate of HIV infection per 1,000 tests

Table 3
Cumulative reported HIV/AIDS Infection by Sub-Group and sex as of December 1998.

Sub-group	Female		Male	
	HIV	AIDS	HIV	AIDS
Commercial sex workers	6			
Children	2		1	
Blood donors				
STD patients			3	
Injecting drug users			11	
Truck drivers			2	
Migrants	1		31	3
House wives	10			
Other (MSM, foreigners, unknown)	3		39	7
Total	22		87	10

Sylhet and Chittagong may be experiencing more HIV infection than the capital city of Dhaka. Despite the fact that testing was conducted only in Dhaka until 1994, then expanded to Chittagong, Narayanganj, Jessore, Khulna and Sylhet, almost 50% of the reported HIV cases are from Sylhet (near the Indian border) and from Chittagong (near Myanmar). The geographic proximity to India, Nepal, Myanmar and Thailand, countries experiencing a serious HIV/AIDS epidemic has probably increased the risk of HIV acquisition in the cities along the border.

According to the unpublished report from the Office of the Director General, Immigration and Passports, Government of Bangladesh, about 75,000

Bangladeshi males travel overseas every year, either for business or for employment. Many of the HIV positive cases are Bangladeshi workers repatriated from the Middle-East, other Southeast Asian countries, or Europe (Gomes *et al*, 1998). Most of them lived abroad for several years and without their families, if married (Morshed *et al*, 1998). Many Bangladeshi "upper society" young men visit India, Myanmar, or Thailand for so-called sex tours. Bangladeshi commercial traders or buyers commonly travel to Bangkok. Many are thought to have sexual contacts with foreign commercial sex workers or other women on their business trips (Rahman *et al*, 1998). These factors can probably account for the higher rates among men. Most Bangladeshi women do not travel as much as men and are therefore less

exposed to HIV from foreign contacts.

Women married to a returning infected traveler and sex-workers seem to be at the highest risk for HIV infection. In 1988, there were an estimated 100,000 commercial sex workers in Bangladesh (Khan, 1988). They are generally illiterate, single, divorced, widowed or separated (Khan, 1988). The devastating floods of 1998 will almost certainly drive some women into commercial sex work in order to survive and feed their children, especially women who are widowed or divorced. Condom use is very low among both in the general population and among sex-workers (Rahman *et al.*, 1998; Kabir *et al.*, 1998; Tazammal Haque, 1996; Mahmud *et al.*, 1998; Khan *et al.*, 1997; Bhuiya *et al.*, 1998; Begum *et al.*, 1998; Folmer, 1994).

The number of foreign visitors to Bangladesh is increasing every year, potentially introducing more HIV infection (Sarkar *et al.*, 1998). There is substantial travel between Bangladesh and nearby HIV-endemic countries including India, Thailand, and Myanmar (Khawaja *et al.*, 1996). Some of the visitors use Bangladeshi sex workers for sexual entertainment, while some Bangladeshi or expatriate businessmen use sexual relations with female workers as bribes for foreign business deals, as well as for their personal sexual relations (Tazammal Haque, 1996).

The number of intravenous drug users in Bangladesh is not known, but is thought to be low (Bloem *et al.*, 1998; Farah, 1991). However, due to frustration, peer pressure, and economic conditions, drug addiction may be increasing (Bloem *et al.*, 1998). Sylhet is thought to be a center for injection drug use in Bangladesh (Bloem *et al.*, 1998). Since Sylhet is also a popular tourism location for Bangladeshis, it could be an important place to concentrate HIV prevention efforts.

Due to government censorship, Bangladesh does not have a nationwide condom promotion program for AIDS/HIV prevention (Bhuiya *et al.*, 1998). The political, religious, and cultural circumstances of Bangladesh are a barrier to effective social marketing of safer sex messages and condoms (Khan *et al.*, 1997). There is limited access to Western newspapers where discussion of risk-related topics is comparatively open. The high illiteracy and poverty rates lead to greater influence of religious and political leaders who tend to oppose public discussion of human sexual behavior (Bhuiyan, 1998; Mahmud *et al.*, 1998a). A few family planning organizations in Bangladesh have embraced HIV prevention as a

high priority. Known for their effective field programs, the family planning organizations can serve a vital role in future HIV prevention work (Rahman *et al.*, 1996). This strength distinguishes Bangladesh from other Asian Muslim countries such as Pakistan where such organizations are less developed (Khawaja *et al.*, 1997).

The Government of Bangladesh is currently pursuing a National Plan of Action. The plan includes setting up a separate Directorate for HIV/AIDS, strengthening institutional and technical capacity, awareness programs for policy makers in key sectors, and support for preventive programs and applied research. National funds are exceedingly limited and substantial political constraints exist. This is apparent from the diminishing investment in HIV testing seen in 1994-1998 compared to 1991-1993 (Table 2). UNAIDS and the WHO are extending continuing support to the Government of Bangladesh for the program and lately other agencies have joined WHO and UNAIDS in providing technical and financial support for the program. Bangladesh must take immediate measures to expand its capacity to effectively monitor the infection and promote and evaluate interventions. Active prevention programs to combat STDs, promote condom use and effective public education, maintain a safer blood and needle supply, and create services for sex workers and high risk men are urgently needed.

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