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Commercial Sex Workers in Brothels Are Hallmark of HIV Epidemic in Bangladesh

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Abstract: HIV/AIDS is a recent phenomenon and is the most influential cause of death worldwide. Alarmingly, the face of HIV/AIDS is growing with epidemic concern. It holds serious implications for entire national and regional economies. It ascertains a threat to livelihoods and to basic rights at work and also at production. Bangladesh is a low HIV prevalence country with several well documented at risk groups, the most prominent of which is brothel-based sex workers. The main victims and vulnerable are women especially commercial sex workers (CSWs). So, the main purpose of this study is to show that through CSWs is the main route of spreading HIV infection into the general population. The used data comes from a field survey at Tangail brothel, attempts to identify the important factors influencing HIV infection of women in brothels and their vulnerable condition as well as country's population. The study results reveal that the CSWs are not sufficient aware about HIV infection and its spreading, women are more vulnerable than men and they are at greater risk. Increasing education level and the female condom supplement could reduce this risk substantially in a large context.

Key words: AIDS, HIV infections, brothels, commercial sex workers, sexually transmitted diseases, prevention, prostitution, sex behavior, risk factors

INTRODUCTION

Acquired Immunodeficiency Syndrome (AIDS) is the late clinical stage of infection with the Human Immunodeficiency Virus (HIV). HIV destroys a certain kind of blood cells-CD4+T cells (helper cells)-which are crucial to the normal functioning of the human immune system. There are two types of HIV infections of which HIV-1 is the primary cause of AIDS worldwide and HIV-2 is found mostly in Africa. Epidemical studies shown that the only routes of HIV transmission are through sexual intercourse, transmission of blood, intravenous injections using HIV- contaminated needles or syringe and transmission from an infected mother to her fetus or infant [1]. The HIV/AIDS situation in Bangladesh is worrying and worsening. Until recently, little information has been available on Sexually Transmission Infections (STIs) in Bangladeshi population. Though the HIV/AIDS epidemic in Bangladesh represents one of the most serious public health problems like other parts of the world. There is no denial of the enormity of the problem. Since the 1990s, there has been growing evidence that epidemic in Bangladesh has not been restricted only to high-risk population. Predictions that HIV would reach epidemic proportions in Bangladesh if high-risk behaviors continued may have come true. HIV infection rates among Injecting Drug Users (IDU) in the 'Central Region' have increased from 1.7% in 2001 to 4% in 2002. This is close to the 5 percent threshold for a concentrated epidemic. Infected IDUs who are clients of sex workers may transmit HIV to them through unsafe sexual activities. This could lead to the eventual spread of HIV infection to the general population. Regarding HIV/AIDS, the following information we found according to Government of Bangladesh press release in last December 2004: number of reported HIV positive person 465, number of deaths due to HIV/AIDS 30, number of AIDS Patients 73. Besides this, according to UNAIDS Global HIV/AIDS Report 2002: estimated number of HIV cases (adults and children) 13,000, women (15-49) 3100, children 310, estimated number of deaths due to AIDS 650, estimated number of AIDS orphans 2100. But, the actual numbers may be more. The above s specify that Bangladesh is still low prevalence country regarding HIV/AIDS.

The existence HIV/AIDS poses a serious challenge to human kind and AIDS has increasingly become a major public-health concern in many developing countries. Though AIDS now strikes most ferociously at the young,

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its impact reaches every corner of society. The World Health Organization (WHO) estimates that over 300 million people are infected each year with curable sexually transmitted infections, a large share of which occur among young people. The emergence of the global pandemic of AIDS has necessitated an increased understanding of the sexual behavior of human populations in order to make informed predictions about HIV epidemics in specific populations and to help policy-makers design effective education and control programs[2]. Although antiretroviral therapy has become accessible in most industrialized countries, HIV/AIDS control efforts in developing countries must continue to rely on information and education programs to increase condom use and decrease high-risk behavior. The impact of this approach is difficult to evaluate since the risk of HIV infection is not randomly distributed, but is mainly related to specific sexual networks. Interventions that focus on specific core groups may be more efficient in this respect. The earliest data reported on HIV epidemics in Africa identified commercial sex workers as a group whose sexual behavior (multiple partners, unprotected sex) made them at risk of infection[3]. Recent studies show evidence of a continuing increase in HIV infection in this population. The CSWs of male clients constitute major core group for HIV transmission, but the characteristics of this subset of the population are almost careless. They are an important group, since they play a role as vectors for HIV transmission, linking male clients to the general population. The patterns of behavior that fuel the spread of HIV infection are widespread. Bangladesh has an extensive and highly stigmatized sex industry with some of Asia's largest brothels, high rates of other sexually transmitted diseases, and a dense and very young population analogous to many countries in sub-Saharan Africa.

Usually Sex trade is not legal in Bangladesh except 15 brothels. Non-government Organizations (NGOs) and Social Workers have identified large numbers of CSWs, majority of them are non-literate but clients represent all sections of the society. The majority of the reported AIDS cases have occurred in the sexually active and economically productive 15 to 44 age group. Often women get involved with sex trading because of poverty or marital break-up or they are forced into it. Tanbazar is the oldest and largest brothel in Bangladesh. It is reputed to be about two hundred years old and is situated in the river part town of Narayangong, 25 kilometers south of the capital city Dhaka. There are 3000 CSWs living there withthere children and it is said that the earning fork this brothel support not only other commercial activities with the brothel (shop, etc) but also extended families of CSWs. It is impossible to estimate the true extent of the economic dimension of their support. There is a small brothel at a stone throw distance from Tanbazar, named Nimtoli which inhabited by around 300 CSWs. Other major brothels are situated at Mymensing, Jessore, Banisanta under Mongla, Tangail, Khulna, Faridpur, etc.

To date, there is neither a vaccine nor a cure for AIDS. It is best known to all that the presence of Sexually Transmitted Diseases (STD) predisposes the individual to HIV infection. Unfortunately, many STD causes go undiagnosed and untreated and little is known about the awareness of HIV/AIDS from the defenseless countries. Various government and non-government agencies have conducted some limited studies in isolation. Most studies conducted so far focused on adult population, particularly on high-risk group of people. Mondal MN, *et al.,* [4]showed that mother to child transmission is the most important starting place of HIV infection in the children. Rahman, *et al.,*[5]studied on knowledge, attitudes, beliefs and practices about HIV/AIDS among the overseas jobseekers in Bangladesh that served a national feature of awareness of HIV. Rahman *et al.,*[6] studied the knowledge and practices about HIV/AIDS among CSWs in Bangladesh. Islam, *et al.,*[7] discussed that the nationwide surveillance of HIV/AIDS detected several risk groups including blood donar and CSWs. Meda N, *et al.,* [8]introduced that knowledge on AIDS was higher among relatively older and urban residents who had access to mass media, televission or radio and whose husbands were using condoms and strong efforts are needed to improve awareness and to clarify misconceptions about AIDS. Kumar MN, *et al,*[9] studied the awareness about HIV/AIDS infection transmission and preventive measures towards this infection is the essential things for the people in the countries of developing world, especially for women who are engaged in commercial sex works and those of socially and economically deprived group. However, no study concentrated on the risk over vicinity and protection of vulnerability among CSWs in brothels, Bangladesh that are struggling against epidemic outbreak. So, the study takes an important place to the present research. That is why, the present study aims to give details the current features of sexual behaviour of CSWs, risk of HIV infections, HIV transmission to the general population and vulnerability portrait of Bangladesh leading to a proper policy.

OVERVIEW OF HIV/AIDS IN PRESENT WORLD

HIV/AIDS is not just health issue. It is really a social development issue closely linked to proverty, religion dictum, gender inequity, low levels of literacy and knowledge about prevention. HIV/AIDS epidemic is reducing the chances of achieving the Millennium

Table 1: Regional HIV/AIDS Statistics and Features, End of 2002

Region	Epidemic Started	Adults and Children living with HIV/AIDS	Adults and Children newly infected with HIV	Adult prevalence rate(*)	%-positive adults who are women	Main mode(s) of transition (#) for adults living with HIV/AIDS
Sub-Sahara Africa	late'70s	29.4 million	3.5million	8.8%	58%	Hetero
North Africa & Middle East	early'80s late '80s	550000	83000	0.3%	55%	Hetero, IDU
South & South -East Asia	late'80s	6.0million	700000	0.6%	36%	Hetero, IDU
East Asia & Pacific	late'70s	1.2million	270000	0.1%	24%	Hetero, IDU, MSM
Latin America	late'70s early'80s	1.5million	150000	0.6%	30%	MSM, Hetero, IDU
Caribbean	late'70s early'80s	.4million	60000	2.4%	50%	Hetero, MSM
EasternEurope &Central Asia	early'90s	1.2million	250000	0.6%	27%	IDU
Western Europe	late'70s early'80s	.57million	30000	0.3%	25%	MSM, IDU
North America	late'70s early,80s	.98million	45000	0.6%	20%	MSM, Hetero, IDU
Australia & New Zealand	late'70s early'80s	.015million	500	0.1%	7%	MSM
Total		42 million	5 million	1.2%	50%	

*The proportion of adults (15 to 49 years of age) living with AIDS in 2002, using 2002 population numbers
Hetero(heterosexual transmission),IDU(Transmission through injecting drug use), MSM (sexual transmission among men who have sex with men).
Sources: AIDS Epidemic Update, December 2002; UNAIDS[16]

Development Goals and targets for many heavily burdened countries[10]. HIV/AIDS is devasting the world's population with some 5,000 people aged 15 to 24 infected each day[11]. It is estimated that by year 2025, only India would have 110 million people infected by HIV virus, reducing the life expectancy by 13 years[12]. Today, an estimated 34-36 million people are living with HIV/AIDS all over the world. Already more than 20 million people have died from this infection, 3 million in 2003 alone. Four million children have been infected since the virus first appeared. Of the 5 million people who became infected with the virus in 2003, 7,00,000 were children almost entirely as the result of transmission during pregnancy and childbirth or from breastfeeding[13]. Around half of the people who acquire HIV become infected before they turn 25 and they struggle hard with their lives and they count their days for sure death. At last they die of the life-threatening illness called AIDS before their 35th birthday. Surprisingly enough, every 14 seconds someone between 14 and 24 years old becomes infected with HIV-positive and 6000 young people a day[14]. Each day 1700 children die of AIDS to the total 3.8 million children who have already died[15].

Mortality in infants will double in region most affected by HIV. This is why we find that out of the 42 million HIV positive cases in the world[16], 95% are in developing countries (Table 1). Most new infections occur in young people, especially girls and young women [15]. The numbers of people living with HIV/AIDS are adults' 38.6 million, women 19.2 million, children under 15 years 3.2 million. The people newly infected with HIV in 2002 are adults 4.2 million, women 2 million, children under 15 years 0.8 million and AIDS deaths in 2002 are adults 2.5 million, women 1.2 million, children under 15 years 0.61 million[16]. Among HIV infected people 6 million of these are in South and South-East Asia contributing to 14.23% of the total numbers while over 29.4 million are in Sub-Saharan Africa contributing to 70% of the total infected, after a slow start in the mid-1980s (Table 1). Cross-border sex-networking has become a serious risk behaviour related to STD and HIV infection. Moreover, migrant and mobility play an important role in the HIV/AIDS epidemic. For example, about 41% of HIV-positive Bangladeshis have been migrant workers, truck drivers at five South Africa truck stops revealed on overall prevalence of 56%-prevalence rate; Terai area of Nepal that the 17% of CSWs who had worked in India accounted for three-quaters of all HIV cases.

WOMEN ARE AT GREATER RISK

As we know about women constitute half of our society. The problem of AIDS is touching the women severely and chronically. Even otherwise women have problem of low status in the society and their suffering from AIDS is going to add fuel to the fire. When women contract HIV, they often are regarded with suspicion and the typical societal response is focused on blaming them for infecting children, when they are mother, or men, when they are engaged in sex work[17]. Many of emotions experienced by women with HIV disease are common to all HIV-infected people, denial, panic, shame, fear,

depression and anger. Women generally do not perceive themselves to be at risk for contracting HIV infection, especially middle class; heterosexual women; thus, when women discover their HIV-positive status, they may experience more intense reaction than men who engage in risk related behaviour[18]. CSWs in Bangladesh report among the highest number partners peer week in Asia and condom use is lower here than in any other country in which it has been measured. There is evidence to suggest that women are more vulnerable than men with women becoming infected at younger age than men. The numbers of women with HIV infection and AIDS have been increasing steadily worldwide. By the end of 2002, 19.2 million women were living with HIV/AIDS worldwide and AIDS deaths in 2002 are women 1.2 million, accounting for 50% of the 42 million adults living with HIV/AIDS[16]. For girls, early marriage and sexual abuse by older men carry major HIV risks, while gender roles often priorities work over education in families affected by HIV/AIDS. The commercial sex exploitation of children takes various forms, ranging from kidnapping and trafficking for sexual exploitation purpose, to pornography sites on the Internet, to prostitutions. In Thailand alone estimates of the number of child prostitute vary from 13000 to 80000. Around half of the former child prostitutes in Bangkok aged 14 to 18 who have tested were HIV-positive (UNAIDS, December 2002). In Kenya in 1998, the prevalence of HIV infection among women aged 15-19 was 23%; among young men at the same age it was 3.5%. The infection rates in Sub-Sahara Africa and Middle East are as highest as 55% to 58% of their adult women population, which is especially a crucial picture for women.

Worldwide, more than 90% of all female adolescents and adult HIV infections have resulted from heterosexual intercourse[19]. Women are particularly vulnerable to heterosexual transmission of HIV due to substantial mucosal exposure to seminal fluids. This biological fact amplifies the risk of HIV transmission when coupled with the high prevalence of non-consensual sex, sex without condom use and the high-risk behaviors of their partners. It is estimated that biologically, a women is nearly 18 times likely to be infected by the male sexual partner then the either way round during an act of sexual intercourse[20]. Women suffer from the same complications of AIDS that afflict men but also suffer gender-specific manifestations of HIV disease, such as recurrent vaginal yeast infections and severe pelvic inflammatory disease, which increase their risk of cervical cancer. Women also exhibit different characteristics from men for many of the same complications of antiretroviral therapy, such as metabolic abnormalities. Frequently, women with HIV infection have great difficulty accessing health care and carry a large burden of caring for children and other family members who may also be HIV-infected. They often feel lack of social support and face other challenges that may interfere with their ability to adhere to treatment regimens. Women whose HIV infections are detected early and receive appropriate treatment survive as long as infected men. There are several studies that have shown HIV-infected women to have shorter survival times than men. Women may be less likely than men to be diagnosed early, which may account for shorter survival times. Several studies involving more than 4,500 people with HIV infection, pointed out that women were 33% more likely than men to die within the study period. The investigators could not definitively identify the reasons for excess mortality among women in this study, but they speculated poorer access to or use of health care resources among HIV-infected women as compared to men, domestic violence, homelessness and lack of social supports for women as important factors.

MATERILAS AND METHODS

Study design: A cross-sectional HIV sero-prevalence and sexual behaviour study was undertaken in a brothel in Tangail, Bangladesh. Information from individual open-ended interviews with sex workers was integrated with data obtained by questionnaire. The survey combined standard sampling survey methods with outreach techniques. In the brothel the majority of the houses are located in working-class neighborhoods with extremely poor living conditions and the women who work there are mostly from the lower classes of the population. These places are well known to people living in the neighborhood from which most of the clients are drawn. A client was defined as a male who was absent in the brothel during the fieldwork and who had a sexual encounter at the site with a CSWs living and/or working there for which he had paid in money or goods of monetary value. All subjects fulfilling this definition were asked to participate in the study. The same principle was used to approach the CSWs in this study. In that brothel, time slots were randomly selected during closing hours. All CSWs taking rest after selling sexual services during these periods were considered eligible and solicited to participate to the study. Commercial sex work is legal in Bangladesh. In 1970, the government institutionalized the medical follow-up of self-indicated female sex workers older than 21 years, who must enroll with a health service.

The women are issued with a health record and their socio-demographic details are registered with the police. Approximately 1500 women are currently registered.

Table 2: Age structure, religion, marital and educational status

Age distribution		Religion of sex workers		Marital status		Educational status	
Age	Frequency	Religion	Frequency	Status	Frequency	Level	Frequency
15-20	61 (40.7)	Muslim	135 (90.0)	Married	80 (53.3)	Primary	65 (43.3)
20-25	48 (32.0)	Hindu	7 (4.7)	Unmarried	70 (46.7)	Secondary	48 (32.0)
25-30	31 (20.7)	Christian	5 (3.3)	Divorced	0 (0)	Illiterate	37 (24.7)
30-35	10 (6.7)	Others	2 (2.0)				
Total	150(100.0)	Total	150 (100.0)	Total	150 (100.0)	Total	150(100.0)

Here, values in parentheses indicate percentage

Table 3: Knowledge on AIDS and prevention

Which virus spread AIDS?		How AIDS spread?		Prevention of AIDS	
HIV	Frequency	Way to spread	Frequency	Process to prevent	Frequency
Yes	29(19.3)	1.Unprotected sex	98 (65.3)	1.Use of condom	125 (85.3)
No	121(80.7)	2.Blood transfusion	75 (50.0)	2.Avoid blood to blood contact	70 (46.5)
		3.Sharing needles or syringe	48 (32.0)	3.Using disposablesyringe	52 (34.5)
		4.Injectable drugs	30 (20.0)	4.No injectable drug	58 (38.6)
		5.Mother to child	3 (2.0)		
Total	150 (100)	Total	150 (100)	Total	150 (100)

Here, values in parentheses indicate percentage

Table 4: Use of condom by commercial sex workers

Condom use		Support of customer to use condom		Knowledge on female condom	
Status	Frequency	Supporting status	Frequency	Do you know it?	Frequency
Always	48 (32.0)	No support	65 (43.3)	Yes	3 (2
Never	48 (32.0)	Support	21 (14.0)	No	147 (98)
Sometimes	54 (36.0)	Someone support	64 (42.7)		
Total	150 (100.0)	Total	150 (100.0)	Total	150(100.0)

Here, values in parentheses indicate percentage

Questionnaire design and data collection: Data were collected over a 1.5 months period from April to May 2004. Three surveyors, two males (one of Honours final year student) and one female who is NGO worker, were recruited and trained to complete the questionnaire and perform data collection. The main researcher supervised the fieldwork. The data collection instrument, a questionnaire, was predominantly quantitative. A number of structured, open-ended questions were also asked and further qualitative answers were noted when additional information was impulsively given in response to quantitative questions. Response categories were coded for computer entry. The open-ended questions were standardized and coded after the fieldwork.

Methodology: For investigating the effects of some factors on condom use we have fitted logistic regression model. To fit the model all the variables are dichotomous. There are three independent dichotomous variables comprising education, marital status and religion of the respondent. The choice of 0 and 1 values have been introduced below:

$$X_{1i} = \begin{cases} 0, \text{if the respondent is illeterate} \\ 1, \text{otherwise} \end{cases}$$

$$X_{1i} = \begin{cases} 0, \text{if the respondent is illeterate} \\ 1, \text{otherwise} \end{cases}$$

$$X_{2i} = \begin{cases} 0, \text{if the respondent is married} \\ 1, \text{otherwise} \end{cases}$$

$$X_{3i} = \begin{cases} 0, \text{if the respondent is Muslim} \\ 1, \text{otherwise} \end{cases}$$

The fitted logistic regression model can be expressed as

$$P(Y_i) = \frac{e^{\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i}}}{1 + e^{\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i}}}$$

RESULTS AND DISCUSSION

Bangladesh has a narrow window of opportunity that many other countries missed to act early and decisively to prevent a nationwide HIV/AIDS epidemic. Our study revealed a surprisingly higher number of CSWs within the age group (15-20) (40.70%) and more than 72% were between (15-25) years (Table 2). Study with respect to the religion, marital and educational status envisaged that most of the respondents were Muslim (90%), married (53.30%) and primarily educated (43.30%). This contemplates a very dodgy condition of knowledge on HIV infection. Only one-fifth of the respondent knows the name of the virus that causes AIDS. Further, information about the spreading behavior of that virus is really shaky.

Table 5: Logistic regression model

Independent variable	B	S.E.	Wald -statistic	d.f	.P-value
Educational status	0.7656	0.4787	2.5580	1	0.0487
Marital status	-0.3452	0.5769	0.8393	1	0.3596
Religion	0.7560	0.6926	1.1912	1	0.2751
Constant	-1.5465	0.9055	2.9169	1	0.0309

Here, use of condom is the dependent variable

Unprotected sex is the root cause of epidemic spread of that virus as claimed by a very unsatisfactory number of respondents and is only 65.30% (Table 3). The most perilous deed is that 98% sex workers have no idea abot the mother to child transmission of AIDS. There also speculates a dramatically strange in self-protection. Our anxieties are due to only 32.0% regular condom users, 32% sex workers never use condom and the remaining 36% are irregular in condom using (Table 4). Another, vicious depiction is that more than two-fifth of the customer do not support condom using. Thus, the over all portrait of the vicinity is more and more vulnerable to epidemic spread of HIV/AIDS as both CSWs and their customers are unaware for safer sex. That is why; support on female condom is essential. But, a matter of regret that only 2% respondent heard about it (Table 4).

There after, we have proceeded with a statistical model building technique, the logistic regression model. Here we explain the use of condom by some qualitative variables such as educational and marital status, religion and infective and preventive knowledge of respondents. We have found only the educational variable as significant. That is, the increased education level can improve the use of condom and can drastically reduce the risk of HIV epidemics (Table 5).

Research on CSWs is rare because this group of females is difficult to reach. Moreover, few researchers have investigated to know the knowledge and opinion about HIVAIDS among CSWs in the brothel. In addition, it confirms that people are willing to speak about some aspects of their sex lives, even if the clandestine nature of the sexual exchange between sex worker and client might lead them to distort reports of their sexual behaviour patterns. The duration of the data collection period, around 1.5 months, allowed the researchers to become accustomed to the environment of the brothel and to improve tactics for approaching CSWs and convincing them to participate. Much of the behaviour reported by participants was confirmed by observation and by interviews with sex workers, which gives considerable confidence in the reliability of the data. This sample of females may be considered representative of the CSWs of brothel in Tangail. The inventory of brothel was exhaustive and validated. The study provided the opportunity to obtain information about HIV/AIDS and sexually transmissible diseases in a population engaging in high-risk behaviors. Similar studies targeting hard-to-reach populations in settings including street prostitution, bars and nightclubs should be considered.

CONCLUTION

Widespread of AIDS in Bangladesh is a must, if we fail to prevent of spreading HIV virus. There is ample evidence to suggest that certain of awareness and motivational activities are very important in the prevention of HIV/AIDS. The findings of this study reveal that large numbers of men buying sex from CSWs, low condom use rates in sexual encounters with sex workers, low levels of knowledge about HIV and AIDS, low perception of personal risk among vulnerable populations and the females are at greater risk than males and they are not sufficiently aware of HIV infection. Lives can be saved if people have the information and services they need to prevent HIV infection. The true impact of the HIV/AIDS epidemic can only be known if infected people come forward. However, by the time many patients seek core, their HIV has already developed into AIDS. Hence, awareness of the disease among the general population needs to enhance. In this context, governments and NGOs should encourage to improve the systems for HIV/AIDS diagnosis. Further more, both the CSWs and their clients should be careful about the safest sex. Both the government and non-government organizations should work together to introduce female condom and to raise education level of sex workers so that the HIV epidemic can be controlled. Protective policies are needed to facilitate improved HIV prevention and safety of sex workers, a key to controlling the HIV epidemic. To reduce the risk of HIV/AIDS spreading in future to the general population, there is a strong need to provide full and specific knowledge to the general public and specially CSWs. Vigorous and immediate action to educate and change behaviour will allow Bangladesh to avoid the devastating social and economic effects of mature HIV/AIDS epidemic seen in other countries. In addition, it needs sufficient funding resources and manpower to advocate and implement the campaigns.

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