



KNOWLEDGE LEVEL OF PEOPLE VULNERABLE TO HIV/AIDS IN SATKHIRA UPAZILA OF BANGLADESH

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Abstract: This study assesses the knowledge level of two groups of most at risk people (floating sex worker and drug addicts) and three groups of bridging population (transport workers, land port workers, rickshaw/van pullers) in *Bhomra* land port area of Satkhira Upazila in Bangladesh. Drawing 60 samples purposively, the study finds that drug addicts and rickshaw/van pullers show higher level of general knowledge followed by transport workers, floating sex workers and land port workers. Rickshaw/van pullers (95 percent) again show higher level of knowledge regarding routes of transmission. Floating sex workers, who all are female, have low level of knowledge on child to mother transmission of HIV/AIDS (through pregnancy or child birth 41.67 percent and breastfeeding 41.67 percent). Again 16.67 percent of drug addicts do not know the matter of sharing HIV contaminated syringe as the route of transmission. Transport workers (88.89 percent) know better regarding preventive measures than other groups. Highest level of misconception has been documented among rickshaw/van pullers followed by land port workers and transport workers. Only 25 percent of drug addicts and transport workers respectively and 50 percent of floating sex workers know the place where treatment is provided. The study suggests strong and more effective information dissemination should be made on the preventive measures, routes of transmission and modes and nature of treatment of the disease for all groups.

Keywords: HIV/AIDS, knowledge level, preventive measures, transmission of HIV/AIDS, vulnerable

Introduction

Acquired immune deficiency syndrome (AIDS) is the disease among many other pandemic that mankind faced from the very beginning of the human civilization (Islam, 2002). It has become a global health challenge because it touched almost all the parts of the world. AIDS is now such a pandemic that in 2014, 36.9 million people lived with the disease worldwide, and even killed 1.2 million people, including 1,50,000 children (WHO, 2015). Genetic research, however, indicates that Human Immunodeficiency Virus (HIV) was originated in west-central Africa during the late nineteenth or early twentieth century. In 1981, a new syndrome, the acquired immune deficiency syndrome was first recognized among homosexual men in the United States. By 1983, the etiological agent, the human

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immunodeficiency virus had been identified. By the mid 1980s, it became clear that the virus had spread, largely unnoticed, throughout most of the world (UNAIDS, 2003). Indeed, it has by now touched almost all the countries of the globe. Through 1980s, the population groups affected predominantly were men who had sex with other men and injecting drug users (IDU). In 1985, the majority (63 percent) of European adult AIDS cases were attributed to transmission among homo/bisexual men. In contrast, by 1992, only 42 percent of the reported adult AIDS cases were due to transmission among homo/bisexual men (UNAIDS, 2003).

Correct knowledge on HIV transmission and prevention is important for avoiding infection of all classes of people. Especially this knowledge is critically important for the people living at risk. In order to assess the knowledge level on HIV/AIDS, Wang *et al.* (2012) recognized three types of knowledge including comprehensive knowledge, knowledge on preventive method and knowledge on preventing mother to child transmission (PMTCT). This study found that in eight high HIV prevalence countries in sub-Saharan Africa, the largest percentage of HIV positive men and women are aware of HIV prevention method and a significant improvement has reported on comprehensive knowledge about AIDS and knowledge of PMTCT in the studied countries.

Many studies assessed the knowledge level of people at risk of HIV/AIDS. A descriptive cross-sectional study was conducted by Shetty *et al.* (2016) among 950 fishermen of the Kutch coast who had been considered as the vulnerable group to HIV/AIDS. The study found that 57.2 percent of the respondents had no access to any potential source of information and 65.1 percent had never heard about HIV/AIDS. Some of them were aware of the mode of transmission, but a very few of them knew about the method of prevention. Only 23.1 percent of them had appropriate knowledge on HIV/AIDS. Atilola *et al.* (2010) in their study determined the prevalence, risk behavior, attitude and knowledge of HIV among long distance heavy-truckers from a cross-sectional survey conducted in the south-west Nigeria. Almost 68 percent of the respondents admitted that they were at the risk of contracting HIV; 73.1 percent said that it was possible to know an HIV positive person from appearance; 81.4 percent knew that drugs could help HIV patients in their condition; 87.8 percent responded that blood was required for HIV test, 72.5 percent considered sex as the major route of transmission.

Apart from the people at risk, the investigation into the assessment of knowledge level of the mass people in any country irrespective of degree of prevalence is of equally important. Haffejee *et al.* (2016) assessed knowledge level of women at reproductive age regarding HIV infection and prevention, particularly prevention of mother to child transmission (PMTCT) amongst South African women from a low income community. The majority of the respondents indicated that mother could transmit HIV to her child but were unable to specify how. A significant proportion of them had knowledge on HIV/AIDS, but unable to identify essential prevention behaviors and were not very receptive to more information on HIV/AIDS. Calderon *et al.* (2015) in their study analyzed knowledge, attitudes and sexual practices on HIV/AIDS and estimate HIV prevalence among residents of Sucre of Bolivia. They found that general people have inadequate knowledge on HIV/AIDS and discriminatory attitude towards people living with HIV/AIDS are extremely high, which is associated to gender, ethnic and economic

inequalities. Again they found low prevalence of HIV and relatively uncommon unsafe sex. Sohn and Park (2012) examined the knowledge level on HIV/AIDS, stigmatizing attitudes towards people living with HIV/AIDS and sexual behavior of eight High School students in Seoul of Korea. Out of 1,566 participants, the study reported low level of correct response rate (54 percent) and showed high level of discriminatory attitudes. The students responded correctly about HIV transmission by kissing at 50.2 percent, toilets at 59.4 percent, cup sharing at 57.4 percent and daily school life at 60.5 percent. Another study by Saad *et al.* (2015) on Malaysian women determined the level HIV/AIDS knowledge among 810 young women aged 13-30 years old. The study revealed that almost all of them knew that HIV/AIDS is transmitted through blood, but only two-thirds of them knew that it can be transmitted through other bodily fluids. The number of respondents who know HIV/AIDS can be transmitted through breast feeding is even lower at 25 percent. Overall the study found an insufficient knowledge of how HIV/AIDS transmit. Perceptions towards HIV/AIDS of 939 Pakistani residents were measured quantitatively by Khan (2015). The analysis was based on five major perception groups including commoners, perspective, callous, seclusion and tribulation. The results suggest that people have sympathetic attitude towards this disease but they are not willing to get contact with the infected people. In a conservative society like Pakistan, people perceive that community should be informed about HIV/AIDS patients.

Accurate knowledge and positive attitude of the doctors and nurses are critically important for quality treatment and patient wellbeing. Knowledge level on HIV/AIDS among 103 clinical dental students in central China was assessed by Li *et al.* (2016). The result revealed that more than half of the students demonstrated a good level of knowledge, although few exhibited an excellent level. Despite their good level of knowledge, the majority (93.68 percent) displayed a negative attitude toward HIV/AIDS. Another cross-sectional descriptive study by Makhado and Davhana-Maselesele (2016) assessed the knowledge level of 233 nurses in South Africa revealed knowledge score ranged from 2 to 16 with an average of 12.93 on HIV/AIDS. Almost 84 percent of all nurses reported depersonalization and 53.2 percent reported emotional exhaustion while caring for people living with HIV/AIDS (PLWH).

Problem Statement

Reported cases of HIV/AIDS in Bangladesh are noticeably low due to early HIV/AIDS prevention interventions initiated both by government and by a host of non-government organizations (NGOS) (Azim *et al.*, 2008). In spite of this, Bangladesh is one of the four countries in the Asia Pacific region where the epidemic is rising. In 2014, the cumulative number of detected infections was 3,674, of which 433 were new cases. The current estimated number of people living with HIV is 9,500 (Alam *et al.*, 2016). There is a potential for expanding HIV/AIDS epidemic in the future, because the country is very receptive to HIV infection. Bangladesh's latest round of serological surveillance in 2011 showed that HIV prevalence among all key populations remained below 1 percent with the exception injected drug users (IDU). Although the overall prevalence of HIV was 1.2 percent among IDU in 2007/08, there is a concentrated epidemic among male IDU in Dhaka. The prevalence of HIV in this cluster increased from 4 percent in 2002 to 7 percent in 2007/08,

which fell slightly in 2010 to 5.3 percent (World Bank, 2012). Despite this current low prevalence, Bangladesh has all the threat to receive HIV/AIDS. Many factors may be responsible for rapid spread of this disease including poverty, huge and densely distributed population, geographic and cultural proximity to two severely affected countries namely India and Myanmar, high prevalence of other sexually transmitted infections (STIs), high prevalence of unsafe sex with commercial sex workers resulting from low level of condom use, gender inequality and high prevalence of the disease among drug users and low access to information of safe sex (Islam and Conigrave, 2008). Even if 1 percent of general population becomes infected with HIV/AIDS, rapid spread of this disease would be a tremendous burden for the country of 160 million people.

World Bank (2012) reported that among the risk factors, unprotected paid sex, sharing of used needles and syringes by IDU, and unprotected sex between men who have sex with men are prevalent in Bangladesh. Sex work is considered the central to widen HIV/AIDS primarily by unprotected heterosexual intercourse and it is believed that a high proportion of new HIV infections are transmitted during paid sex (WHO, 2007). Sex workers clients show little concern about protection and very few show interest in using condoms. Contributing to this problem is that sex workers in Bangladesh has highest client turnover than anywhere in Asia ranging from 18 to 44 per week including rickshaw puller, vendors and hawkers. Number of clients ranges between 12 and 16 in different cities of Bangladesh for floating sex workers in a week (WHO, 2003). Recent data of World Bank (2012) suggests IDU and international returnee migrant workers as two key sources for HIV/AIDS in Bangladesh. In addition to this, although Bangladesh is largely a culturally conservative and Muslim country, there are many social, economic and geographical factors contributing to prospective HIV risk through insecure sexual intercourse and drug use, which in theory are apparently prohibitive (Paul, 2009). Empirical evidence shows that cross border mobile population including long route truck drivers, sailors, boatmen and international returnee migrants are other 'most at risk groups' as they have the trend of spreading this disease among their family members (Samuels *et al.*, 2013; Sultana *et al.*, 2011a; Sultana *et al.*, 2011b; Sikder, 2008; Gazi *et al.*, 2008).

Geographically Bangladesh shares its border, which is about 4,246 km in length, with two high prevalence HIV/AIDS country, namely India and Myanmar. Again, out of 64 administrative districts in Bangladesh, 29 international land borders are shared with India and 2 land borders are shared with Myanmar. Due to this geographic context, cross border movement of population between India and Bangladesh possesses many dynamism and few interesting features (Sikder, 2008). According to 2001 India census, there are approximately three million Bangladeshi migrants who are working in India (The Daily Star, 2014). Available evidence shows that a host of socio-economic factors including unemployment at source, high wages at destination, low migration cost, porous border and geographic proximity enhance cross border movement of population. Many of them are marginalized and vulnerable to HIV/AIDS due to living in distance from spouses and in poor working condition (The Daily Star, 2014). UNAIDS/WHO guidelines for second generation HIV surveillance, 2000 indicated certain population groups as an 'epidemiological bridge' from the most-at-risk population to the general population. The strategic plan of the National AIDS Program of Bangladesh (1997-2002) defines this group as transport workers including

their helpers and cleaners and rickshaw pullers, uninformed forces, young people, working children, women in domestic work and garment workers, internal and international male migrants, slum dwellers and tribal people. In this line, study by Sikder (2008) documented traders both legal and illegal, transport workers, truckers and their assistants, sailors, boatmen, floating sex workers and drug users as vulnerable groups to receiving HIV/AIDS. The above mentioned groups cross Indian border frequently, stay there temporarily for employment, and having unprotected sex with commercial sex workers.

Discussion above shows that the mobile and cross border population bears high risk behavior for HIV/AIDS infection. Bangladesh is surrounded by Indian border in three sides, where 6 million people are living in a potential environment to HIV/AIDS infection. Considering the geographical location, Satkhira is a high-risk zone of HIV/AIDS as the Indian border is only 13 km away from Satkhira Municipality area. Moreover *Bhomra* land port, which is the second largest land port in Bangladesh, is very much adjacent to the study area and recognized as one of the entry points of HIV/AIDS in Bangladesh from India. According to Satkhira Upazila Statistics Office and *Bhomra* Union Parishad Office, total population of the study area is 1,22,920 (51,050 men, 37,860 women, 19,530 boys and 14,480 girls). Data from HIV testing and counseling (HTC) centers in 2012 and 2013 shows that among HIV positive cases, 35–40 percent were found in returnee migrants (Alam *et al.*, 2016). Therefore, the population of this area has high potential to be infected with HIV/AIDS because thousands of trucks are moving and crossing through this border in between Bangladesh and India. There are about 5,000 local transport workers according to Transport Workers' Association of Satkhira Upazila; 3,000 to 3,500 land port workers according to Land Port Workers' Association, government registration no. 1155, 1159, 1722, 1964; and 500 floating sex workers, 700 drug addicts according to different NGO program survey documents. Side by side, there are thousands of migrant people moving in the study area. The people of this area such as transport workers, land port workers, drug addicts, floating sex workers, rickshaw/ van pullers, and youth and adolescents are the main risk groups for HIV/AIDS infection. This study particularly assesses the knowledge level of two most at risk groups, floating sex workers and drug addicts and other three groups, such as transport workers, land port workers and rickshaw/van pullers considered as bridging population in the *Bhomra* land port area. A number of studies on assessing knowledge level have already been undertaken both at national and international level covering HIV/AIDS high risk group and other groups of general people. But to the best of authors' acquaintance, none of the study has yet been undertaken for assessing the knowledge level of most at risk and bridging population of *Bhomra* land port area. Considering this knowledge gap, this study will try to explore the knowledge level of HIV/AIDS high risk people in *Bhomra* land port area of Satkhira district.

Materials and Methods

The study is conducted in Satkhira Municipality area and *Bhomra* land port to assess the knowledge level of people vulnerable to HIV/AIDS. *Bhomra* land port is very much adjacent to the Indian border within Satkhira Sadar Upazila. Satkhira has a 138 km cross border area with India. *Bhomra* land port is the second largest land port in Bangladesh with an area of 7,246 acre. Authors purposively selected this study area considering its easy access and high prevalence of HIV/AIDS risk people in that area.

The study followed multistage sampling technique for selecting the study area. Firstly Satkhira district was purposively selected from the southwest region of Bangladesh. Then Satkhira Municipality area of Satkhira Sadar Upazila has been chosen purposively. This study considers five groups of people as population who are transport workers, land port workers, drug addicts, floating sex workers and rickshaw/van pullers. The authors select 12 samples from each group purposively. Sampling distribution for this study is given in Table 1.

Table 1: Distribution of samples

Sl. No.	Target groups	No. of sample
1	Transport workers	12
2	Land port workers	12
3	Drug addicts	12
4	Floating sex workers	12
5	Rickshaw/van pullers	12
Total Sample		60

A structured interview schedule was prepared to collect basic information (household member, age, sex, education and occupation), and to assess knowledge level of HIV/AIDS of the respondents. In order to assess the knowledge level of the respondents, the authors asked 25 questions on different dimensions of general knowledge, routes of transmission, preventive measures and risky behavior of HIV/AIDS. Again six questions for assessing misconception about the routes of transmission were asked. Table 2 shows detail about the variables used in the study. All answers were taken in dichotomous form. For assessing

Table 2: Description of variables

Name of the variable	Measurement unit	Method of data collection
Socio-economic and demographic variables		
Age	year	Structured interview schedule
Sex	dichotomous	
Education	Year of schooling	
Marital status	dichotomous	
Income	In BDT	
Knowledge level assessing parameters		
Level of general knowledge	Asking questions about type and severity of disease (Five questions)	Structured interview schedule
Sources of information	Asking questions about access to different print and media sources that provide information on HIV/AIDS (Six different sources)	
Mode and route of transmission	Asking questions about how many ways HIV/AIDS have been transmitted (Five different routes)	
Social risk and treatment	Knowledge on availability of treatment facility and proximity of health care centers (Four questions)	
Risky behavior causing HIV/AIDS	Asking questions about homosexuality, multiple sex partner and other risky behavior that may transmit HIV/AIDS (Five risky behavior)	
Way of prevention	Asking questions on preventive measures (Six preventive measures)	
Misconception about transmission	Asking questions about the routes which people usually misunderstand as the cause of transmission (Six common misconceptions)	

knowledge level, number and percentage of respondents who provided correct answer had been calculated. Field survey was conducted during the period of July, 2014. For secondary data, important information was collected from different scholarly articles and Satkhira Upazila Statistics Office, *Bhomra* Union Parishad Office and from *Bhomra* Land Port Authority.

Results

Socio-economic and demographic profile: Demographic profile of the respondents shows that most of the respondents (76.67 percent) belong to age range of 21-40 years. Among them, 45 percent of the respondents belong to 21-30 years and 31.67 percent belong to 31-40 years. The least 11.67 percent of the respondents belong to below 20 years and above 40 years respectively. The drug addicts are the highest in number (58.33 percent) followed by the transport workers (50 percent) who are at the age ranges between 21 to 30 years (Table 3). On the other hand, the land port workers are the highest in number (41.67 percent) followed by the transport workers (33.33 percent) and the floating sex workers (33.33 percent) at the age range of 31 to 40 years.

Table 3: Age of the respondents

Age group	Age of the respondent by category (percent)					Total
	Transport Worker	Land Port Worker	Floating sex worker	Drug addict	Rickshaw/van puller	
<20	1(8.33)	1(8.33)	2(16.67)	2(16.67)	1(8.33)	11.67
21-30	6(50.00)	4(33.33)	5(41.67)	7(58.33)	5(41.67)	45.00
31-40	4(33.33)	5(41.67)	4(33.33)	2(16.67)	4(33.33)	31.67
40+	1(8.33)	2(16.67)	1(8.33)	1(8.33)	2(16.67)	11.67
Total	100	100	100	100	100	100

Educational attainment of the respondents in table 4 shows that more than one third (35 percent) of the total respondents are illiterate. The least number (10 percent) of respondents have above secondary education. The respondents at primary and secondary education level are 26.67 percent and 28.33 percent respectively (Table 4). Illiteracy is the highest (58.33 percent) among the floating sex workers and the lowest (16.67 percent) among the drug addicts. Percentage of people (58.33 percent) having secondary education and having higher secondary education (16.67 percent) are the highest among the drug addicts. Similarly, 16.67 percent of floating sex workers has secondary education and none of them have higher secondary education, which are the lowest while comparing with other groups.

Table 4: Educational qualification of the respondents

Education level (years of schooling)	Respondents' category (percent)					Total
	Transport Worker	Land Port Worker	Floating sex worker	Drug addict	Rickshaw/ van puller	
Illiterate	3(25.00)	4(33.33)	7(58.33)	2(16.67)	5(41.67)	35.00
Primary (1-5)	5(41.67)	4(33.33)	3(25.00)	1(8.33)	3(25.00)	26.67
Secondary (6-10)	3(25.00)	3(25.00)	2(16.67)	7(58.33)	2(16.67)	28.33
Higher Secondary (10+)	1(8.33)	1(8.33)	0(0)	2(16.67)	2(16.67)	10.00
Total	100	100	100	100	100	100

Table 5 shows that more than half of the respondents (51.67 percent) are married. Besides, 40 percent of the respondents are not married. The least number of the respondents (8.33 percent) is divorced. The married respondents are the highest (66.67 percent) among the rickshaw/van pullers and the lowest (33.33 percent) among the drug addicts.

Table 5: Marital Status of the respondents

Respondent's Category	Marital status (percent)			Total
	Married	Un-married	Divorced	
Transport Worker	7(58.33)	5(41.67)	0	100
Land Port Worker	5(41.67)	7(58.33)	0	100
Floating sex worker	7(58.33)	3(25.00)	2(16.67)	100
Drug addict	4(33.33)	5(41.67)	3(25.00)	100
Rickshaw/van puller	8(66.67)	4(33.33)	0	100
Total	51.67	40.00	8.33	100

Table 6 depicts the status of monthly income of the respondents. Monthly income of 33.3 percent and 28.3 percent of the respondents' ranges from BDT 2,000 to BDT 3,000 and BDT 3,000 to BDT 4,000 respectively. There are only 16.67 percent respondents who have monthly income above BDT 4,000, which is the lowest in number. On the other hand, 21.7 percent of the respondents have monthly income less than BDT 2,000. Comparatively, monthly income of the transport workers is higher than other categories of respondents. Monthly income above BDT 4,000 is the highest (25 percent) among the transport workers and the lowest (8.33 percent) among the rickshaw/van pullers.

Table 6: Monthly income of the respondents

Monthly Personal Income	Respondent type by percent					Total
	Transport Worker	Land Port Worker	Floating sex worker	Drug addict	Rickshaw/van puller	
Less than Tk 2000	1(8.33)	2(16.67)	5(41.67)	4(33.33)	1(8.33)	21.7
BDT 2000-3000	3(25.00)	5(41.67)	4(33.33)	2(16.67)	6(50.00)	33.3
BDT 3000-4000	5(41.67)	3(25.00)	1(8.33)	4(33.33)	4(33.33)	28.3
BDT 4000+	3(25.00)	2(16.67)	2(16.67)	2(16.67)	1(8.33)	16.7
Total	100	100	100	100	100	100

The majority of the respondents are male (76.67 percent). There are only 23.33 percent female, which includes mainly floating sex workers and drug addicts. All of the floating sex workers are female. On the other hand, all of the transport workers, land port workers and rickshaw/van pullers are male. Gender distribution of each of these two categories is 1: 3 (female: male).

Knowledge level of HIV/AIDS of the respondent: The percentage distribution of the selected respondents who heard about AIDS by some selected background characteristics are demonstrated in Table 7. General knowledge about AIDS is the highest among drug addicts (87.5 percent) and rickshaw/van pullers (87.5 percent). The least knowledge on AIDS is documented among land port worker (70.83 percent). The transport workers (81.25 percent) and floating sex workers (72.92 percent) rank second and third respectively. On the other hand, most of the respondents think that HIV/AIDS is a fatal disease (95 percent). Besides, the least respondents think that HIV/AIDS loose body's immune system, which is 65 percent. At the same time, 76.67 percent of the respondents think that HIV/AIDS is a germ and 83.33 percent of the respondents think that HIV/AIDS causes death.

Table 7: Level of general knowledge on HIV/AIDS

	SA1 (N=12)		SA2 (N=12)		SA3 (N=12)		SA4 (N=12)		SA5 (N=12)		Total (N=60)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Is HIV/AIDS a fatal disease?	11	91.67	12	100	11	91.67	12	100.00	11	91.67	57	95.00
Is HIV/AIDS a germ?	9	75.00	7	58.33	10	83.33	10	83.33	10	83.33	46	76.67
Is HIV/AIDS causes death?	10	83.33	9	75.00	9	75.00	11	91.67	11	91.67	50	83.33
Is HIV/AIDS loose body's Immune system?	9	75.00	6	50.00	5	41.67	9	75.00	10	83.33	39	65.00
Average percent	81.25		70.83		72.92		87.5		87.5			

[For Table, SA1 = Transport Worker, SA2 = Land Port Worker, SA3 = Floating Sex Worker, SA4 = Drug Addicts and SA5 = Rickshaw/Van Pullers.]

Table 8 shows the status of availability of various sources of HIV/AIDS information to the respondents. Among the respondents, 88.33 percent have easy access to radio and television, which are the top most sources of information on HIV/AIDS. On the other hand, newspapers and magazines (51.67 percent); posters and leaflets (63.33 percent); friends/neighborhoods (75 percent); seminars and workshops (58.33 percent) and *Jari Gaan* (65 percent) are other sources of information on HIV/AIDS. The least important source is newspapers and magazine. Friends/neighborhoods, *Jari Gaan*, posters and leaflets and seminars and workshops are ranked second, third, fourth and fifth major sources of information respectively. Radio and television are ranked as the top major source of information probably because it has the widest media coverage. The relatively low patronage of other sources such as newspapers and magazines, posters and leaflets, friends, seminars and workshops and *Jari Gaan* may be explained by poor coverage, illiteracy, poor reading habits and weak purchasing power.

Table 8: Sources of information of HIV/AIDS

Sources	SA1 (N=12)		SA2(N=12)		SA3(N=12)		SA4(N=12)		SA5(N=12)		Total (N=60)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Radio and television	11	91.67	9	75.00	11	91.67	11	91.67	11	91.67	53	88.33
Newspapers and magazines	6	50.00	4	33.33	7	58.33	5	41.67	9	75.00	31	51.67
Posters and leaflets	8	66.67	7	58.33	6	50.00	8	66.67	9	75.00	38	63.33
Friends/neighborhoods	8	66.67	7	58.33	8	66.67	11	91.67	11	91.67	45	75.00
Seminars and workshops	5	41.67	8	66.67	6	50.00	7	58.33	9	75.00	35	58.33
<i>JariGaan</i>	8	66.67	7	58.33	5	41.70	9	75.00	10	83.33	39	65.00

[For Table, SA1 = Transport Worker, SA2 = Land Port Worker, SA3 = Floating Sex Worker, SA4 = Drug Addicts and SA5 = Rickshaw/Van Pullers.]

It is found that 81.67 percent of the respondents think HIV/AIDS are risky for their area, 45 percent think there is treatment of HIV/AIDS, about 71.67 percent think it is contagious and 76.67 percent think HIV/AIDS is possible to prevent (Table 9). The major respondents think that HIV/AIDS are risky for their area. Besides, the numbers of the respondents who think that there exist treatments of HIV/AIDS are the least. On the other hand, the rickshaw/van pullers have the highest level of knowledge, who are 83.33 percent and the transport workers have the least knowledge, who are 58.33 percent. Besides, the land port workers 70.83 percent, floating sex workers 66.67 percent and drug addicts 64.58 percent are ranked second, third and fourth respectively.

Table 9: Social risk and treatment of HIV/AIDS

	SA1 (N=12)		SA2(N=12)		SA3(N=12)		SA4 (N=12)		SA5 (N=12)		Total (N=60)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Is your area Risky for HIV/AIDS?	8	66.67	11	91.67	9	75.00	10	83.33	11	91.67	49	81.67
Is there any treatment of HIV/AIDS?	3	25.00	8	66.67	6	50.00	3	25.00	7	58.33	27	45.00
Is it Contagious?	9	75.00	8	66.67	8	66.7	7	58.33	11	91.67	43	71.67
Is it possible to prevent?	8	66.67	7	58.33	9	75.00	11	91.67	11	91.67	46	76.67
Average percent	58.33		70.83		66.67		64.58		83.33			

[For Table, SA1 = Transport Worker, SA2 = Land Port Worker, SA3 = Floating Sex Worker, SA4 = Drug Addicts and SA5 = Rickshaw/Van Pullers.]

The respondents are fully aware that HIV/AIDS is transmitted through unprotected sexual intercourse (91.67 percent), transfusion of infected blood (90 percent), sharing HIV contaminated syringe, needle or other sharp object (81.67 percent), from infected mothers to their babies during pregnancy or childbirth (65 percent) and breast-feeding (70 percent) (Table 10). Most respondents think that HIV/AIDS are transmitted through unprotected sexual intercourse. HIV/AIDS are transmitted from infected mothers to their babies during pregnancy or childbirth is thought by the least number of respondents. The knowledge on routes of transmission of HIV/AIDS is the highest among rickshaw/van pullers (95 percent) and the lowest among land port worker (70 percent). The transport worker (81.67 percent), floating sex worker (76.67 percent) and drug addicts (75 percent) are ranked second, third and fourth respectively.

Table 10: Routes of transmission of HIV/AIDS

Routes of transmission of HIV	SA1 (N=12)		SA2 (N=12)		SA3 (N=12)		SA4 (N=12)		SA5 (N=12)		Total (N=60)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Unprotected sexual intercourse	11	91.67	10	83.33	12	100.00	10	83.33	12	100.00	55	91.67
Transfusion of infected blood	11	91.67	12	100.00	10	83.33	11	91.67	10	83.33	54	90.00
Sharing HIV contaminated syringe, needle or other sharp object	9	75.00	8	66.67	11	91.67	10	83.33	11	91.67	49	81.67
Infected mother to babies during pregnancy or childbirth	9	75.00	7	58.33	5	41.67	6	50.00	12	100.00	39	65.00
Breast-feeding	9	75.00	5	41.67	8	66.67	8	66.67	12	100.00	42	70.00
Average percent	81.67		70.00		76.67		75.00		95.00			

[For Table, SA1 = Transport Worker, SA2 = Land Port Worker, SA3 = Floating Sex Worker, SA4 = Drug Addicts and SA5 = Rickshaw/Van Pullers.]

Table 11 shows the level of misconception and ignorance about HIV transmission among the respondents in the study area. The respondents have misconceptions that HIV/AIDS can be transmitted through mosquito and other insects' bite (38.33 percent), through eating/bathing/sleeping/ with AIDS patient (71.67 percent), sharing of clothing (28.33 percent), hand-shaking (18.33 percent) and through social kissing (80 percent). However, the most believed misconception is that HIV/AIDS can be transmitted through social kissing (80 percent); while the least respondents believe that it can be transmitted through hand-shaking (18.33 percent). The misconceptions are the highest among rickshaw/van pullers (56.67 percent) and the lowest among drug addicts (35 percent). The land port workers (54.99 percent), transport workers (50 percent) and floating sex workers (45 percent) are ranked second, third and fourth respectively. Illiteracy, inadequate anti-HIV campaigns, stigmatization and other factors among the respondents might be responsible for the high level of misconception and ignorance about HIV/AIDS. It is to be noted that a correct knowledge of every mode of transmission is very important as a guide against possible infection. Therefore the implementation of more effective health program to intensify mass education and rural awareness will help to clarify areas of misconception and increase knowledge about HIV/AIDS.

Table 11: Misconception (incorrect knowledge) about transmission of HIV

Misconception about HIV	SA1 (N=12)		SA2 (N=12)		SA3 (N=12)		SA4 (N=12)		SA5 (N=12)		Total (N=60)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Mosquito or other insects bite	5	41.67	4	33.33	6	50.00	3	25.00	5	41.67	23	38.33
Eating/bathing/sleeping/ with AIDS patient	9	75.00	10	83.33	8	66.67	6	50.00	10	83.33	43	71.67
Sharing of clothing	4	33.33	6	50.00	3	25.00	2	16.67	5	41.67	17	28.33
Hand-shakes	3	25.00	3	25.00	2	16.67	1	8.33	2	16.67	11	18.33
Social kissing	9	75.00	10	83.33	8	66.67	9	75.00	12	100.00	48	80.00
Average percent		50.00		54.99		45.00		35.00		56.67		

[For Table, SA1 = Transport Worker, SA2 = Land Port Worker, SA3 = Floating Sex Worker, SA4 = Drug Addicts and SA5 = Rickshaw/Van Pullers.]

Table 12 shows that a high level of knowledge on risky behavior of HIV/AIDS reported among the respondents. The major respondents (93.33 percent) think that prostitution is the top most high risk behavior of HIV/AIDS followed by having multiple sex partners (91.67 percent). Besides, the respondents who think that homosexuality is a risk behavior of HIV/AIDS are the least in numbers (57.67 percent). The others thinking on high risk behavior of HIV/AIDS are professional blood donation (76.67 percent) and intravenous drug abuse (75 percent). On the other hand, the rickshaw/van pullers have the most knowledge (93.33 percent) and the floating sex workers have the least knowledge (66.67 percent) on high risk behavior of HIV/AIDS. At the same time, the transport workers (83.33 percent), drug addicts (76.67 percent) and land port workers are ranked second, third and fourth respectively about knowing high risk behavior of HIV/AIDS.

Table 12: Risky behavior for HIV/AIDS transmission

	SA1 (N=12)		SA2 (N=12)		SA3 (N=12)		SA4 (N=12)		SA5 (N=12)		Total (N=60)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
High-risk behavior	8	66.67	7	58.33	5	41.67	6	50.00	9	75.0	34	56.67
Homosexuality	11	91.67	10	83.33	10	83.33	12	100.0	12	100.0	55	91.67
Multiple sex partner	8	66.67	7	58.33	8	66.67	10	83.33	12	100.0	45	75.00
Intravenous drug abuse	11	91.67	9	75.00	8	66.67	7	58.33	11	91.67	46	76.67
Professional blood donation	12	100.0	12	100.0	9	75.00	11	91.67	12	100.0	56	93.33
Prostitution		83.33		74.99		66.67		76.67		93.33		
Average percent												

[For Table, SA1 = Transport Worker, SA2 = Land Port Worker, SA3 = Floating Sex Worker, SA4 = Drug Addicts and SA5 = Rickshaw/Van Pullers.]

Table 13 provides the information regarding the question ‘what can a person do to avoid getting AIDS. The respondents who have correct knowledge that HIV/AIDS can be prevented by using sterilized instruments is 76.67 percent, abstain from sex 63.33 percent, using condom during sex 86.67 percent, limiting sex with only one sex partner 81.67 percent, transfusion of screened blood 88.33 percent and through obeying religious rule 90 percent. The major respondents think that AIDS can be prevented by abiding religious rule followed by transfusion of screened blood. Besides, the least number of respondents think that it can be prevented by abstain from sex. On the other hand, the transport workers (88.89 percent) have the most correct knowledge about preventing HIV/AIDS followed by the rickshaw/van pullers (86.11 percent). The drug addicts (79.17 percent) rank third. Besides, the land port workers (76.39 percent) rank fourth followed by floating sex workers (75 percent), who have the least level of knowledge.

Table 13: Preventive measures against HIV/AIDS

	SA1 (N=12)		SA2 (N=12)		SA3 (N=12)		SA4 (N=12)		SA5 (N=12)		Total (N=60)	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Preventive measures												
Use sterilized instruments	11	91.67	10	83.33	7	58.33	8	66.67	10	83.33	46	76.67
Abstain from sex	9	75.00	6	50.00	7	58.33	8	66.67	8	66.67	38	63.33
Use condom during sex	11	91.67	8	66.67	12	100.0	11	91.67	10	83.33	52	86.67
Only one sex partner	9	75.00	8	66.67	11	91.67	10	83.33	11	91.67	49	81.67
Transfusion of screened blood	12	100.0	11	91.67	9	75.00	10	83.33	11	91.67	53	88.33
Obey religious rule	12	100.0	12	100.0	8	66.67	10	83.33	12	100.00	54	90.00
Average percent		88.89		76.39		75.00		79.17		86.11		

[For Table, SA1 = Transport Worker, SA2 = Land Port Worker, SA3 = Floating Sex Worker, SA4 = Drug Addicts and SA5 = Rickshaw/Van Pullers.]

Discussion

Socio-economic and demographic profile of the respondents reveal that 76.67 percent of the respondents belong to the age group 21 to 40, which is considered as the most active reproductive age group. They are also the economically active and important source of labor force in the study area. As they are considered as the most at risk group to HIV/AIDS, policy makers should take into account the fact that infection of this disease will significantly affect the supply of labor force and the resultant economic debacle in the port area in future. Among the five groups, transport workers are the outside people who frequently migrate to this area. Other group of people like land port workers, drug addicts, floating sex workers and rickshaw/van pullers are the inhabitants in Satkhira Municipality area and directly or indirectly related with port area activities. They may be considered as the active agent to spread HIV/AIDS to other people in the study area. Majority of the respondents (61.6 percent) have very low level of income, ranging from BDT 2,000 to BDT 4,000 with very poor educational background. Field survey shows that 55 percent of the respondents have only one to ten years of schooling. Present study shows that age, education and income of those five groups of people are important factors that affect knowledge level of HIV/AIDS infection. This finding is supported by the study of Hossain et al. (2015), which captures that age, education, employment and marital status have significant influence on HIV/AIDS related knowledge. That study found adult literate group had more knowledge than adult illiterate group and a greater proportion of unmarried people (54.05 percent) had good knowledge than that of married people (50.85 percent) on HIV/AIDS in Bangladesh. Another study in this regard by Rahman *et al.* (2014) found education as the significant determinant of HIV/AIDS related knowledge.

It has already been recognized in many studies that sex workers and drug addicts are at the core of the groups at risk people and hence more receptive to the disease. Present study also goes in line with this recognition that floating sex workers and drug addicts as the most vulnerable groups to receiving HIV/AIDS in the study area. Findings of the study by Prybylski and Alto (1999) and Williams (2000) show that most commercial sex workers have high level of general knowledge and knowledge about HIV transmission and prevention, which is not consistent with the findings of the present study. Again, alarming fact captured in the present study is that floating sex workers have very low level of knowledge regarding treatment of disease (50 percent), social risk and preventive measures (75 percent) of this disease, which is very close to the findings of Talsania *et al.* (2010), where 38.9 percent of commercial sex worker did not know about the place of testing and getting treatment of HIV/AIDS. Once infected, this low level of coverage will create a massive catastrophe in the study area. A significant number (58 percent) of floating sex workers in the present study are married and 75 percent of them are in the child bearing age range of 21-40, which proves that they are more potential to giving birth to children. But they have very low level of knowledge that AIDS can be transmitted through pregnancy or childbirth (41.67 percent) and it can be transmitted through breast feeding (67 percent). Considering this group as the women of reproductive age, findings explained above is consistent with the earlier studies conducted by Wang *et al.* (2012); Saad *et al.* (2015) and Haffejee *et al.* (2016). Another study by Yaya *et al.* (2016) found that knowledge about mode of transmission was higher than for general awareness in case of Bangladeshi women of reproductive age group, which

perfectly resembles with the current study (76.67 percent for routes of transmission, 72.92 percent for general level of knowledge in this study). Knowledge about mother to child transmission shows lower prevalence in earlier study by Jahan *et al.* (2012), which explored that only 15 percent of dental students in Dhaka knew about it, and about 56.4 percent of ICDDRDB staff were unaware about mother to child transmission through breastfeeding (Islam *et al.*, 2002). But a higher level of knowledge score is found about mother to child transmission among Bangladeshi reproductive age group women by the study of Yaya *et al.* (2016), which contradicts the findings of the present study. However, more media coverage on this issue is critically important in the study area.

Present study finds that significant proportion (about 88 percent) of drug addicts have greater level of general knowledge as most of them (almost 92 percent) have higher access to electronic media and friends and neighbors. This finding is supported by the study of Dershem *et al.* (2007), who conducted their study on injecting drug users of Georgia. Lower number of drug addicts (only 25 percent) knows that there is treatment of this disease. Although this group is involved with more risky behavior causing HIV/AIDS, only 58 percent have the misconception that this disease is contagious. Regarding routes of transmission, 83 percent of them are respectively aware about the fact that HIV/AIDS can be transmitted through sharing of HIV contaminated syringe, needle or other sharp object; rest 17 percent remain out of this range, which is almost comparable with other study by Hossain *et al.* (2015), which shows that only 35 percent of IDUs did not know anything about symptoms of AIDS and 75 percent of them knew about transmission of HIV/AIDS through shared needles. This situation makes the group of people more susceptible to this disease. Present study captures almost similar types of findings on the fact that 83 percent and 58 percent of injecting drug users respectively know that intravenous drug abuse and professional blood donation causing HIV/AIDS. But the lowest number (35 percent) of drug addicts has lower level of misconception about AIDS transmission.

Land port workers, transport workers and rickshaw/van pullers are considered as the epidemiological bridging population and hence more susceptible to spread the disease among other population in Bangladesh, which has already been confirmed by many studies (CARE, 2006; Islam and Conigrave, 2008; Aung, 2012). Present study finds that a significant portion of these three category respondents have correct knowledge on routes of transmission which is comparable to the findings of Sadhya *et al.* (2010) that shows about 82.5 percent of truck drivers have obtained correct knowledge on HIV/AIDS transmission. Another comparable finding in this study is that only 13.2 percent of them knew the place where HIV/AIDS can be tested is also supported by present study, where only 25 percent transport workers know the place where the treatment is to be provided. Findings of the present study as indicated by low knowledge level about treatment of the disease and preventive measures are matched with the findings of the study by Bwayo *et al.* (1991); Singh, *et al.* (1993), Podhisita *et al.* (1996) and Atilola (2010). Misconceptions regarding routes of transmission may play a contributory role to spread this disease to their spouses and children. Therefore, focus should be placed towards developing knowledge and disseminating information on medical treatment of this disease. Removing misconception about transmission of disease is a crying need for those groups as well.

Present study signifies the importance of radio and television as it is the topmost source of information as indicated by earlier study by Islam *et al.* (2002). Another study by Tehrani and Malek-Afzali (2008) recognized the importance of personal experience as the source of knowledge, which is not documented as a source in the present study.

Conclusion

There is no doubt that HIV/AIDS in Bangladesh is a latent threat. The denial of the fact would be definitely dangerous. India is our neighboring country which has got the highest number of AIDS patients all over the world, making our country most vulnerable to the disease. As the distance between the study area and Indian border is only 13 kilometer, this area is potential to be very much receptive to HIV/AIDS. In this connection, present study considers floating sex workers and the drug addicts of *Bhomra* land port area as the most vulnerable group to this disease. These two groups deserve special consideration for media exposure on the issue of routes of transmission and available treatment of the disease in the study area. Similarly more wide-ranging information dissemination is needed for all groups on removing different types of misconception regarding routes of transmission, impact of AIDS on body's immune system and more importantly on treatment of HIV positive people.

Present study suffers from the problem of small sample size and outsized study area, which might have affected the result. However, present study has importance in capturing the knowledge and awareness level of people who are at risk. This has a special implication in terms of assessing the potential of spreading of HIV/AIDS in the study area, which is geographically more vulnerable to this disease. Further study is crucially needed to make an all inclusive survey of high risk people and to devise policy actions directed to them so that Bangladesh can face the threat of epidemics caused by HIV/AIDS.

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