

Vulnerability to HIV/AIDS of Migration-affected Families

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Acronyms

AIDS	Acquired immunodeficiency syndrome
AOR	Adjusted odds ratio
BCC	Behaviour change communication
CI	Confidence interval
FHI	Family Health International
HH	Household
HIV	Human immunodeficiency virus
HSID	Health Systems and Infectious Diseases Division
ICDDR,B	International Centre for Diarrhoeal Disease Research, Bangladesh
MOHFW	Ministry of Health and Family Welfare
SPSS	Statistical Package for the Social Sciences
STDs	Sexually transmitted diseases
UHFPO	Upazila Health and Family Planning Officer
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNO	Upazila Nirbahi Officer
VCT	Voluntary counselling and testing

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EXECUTIVE SUMMARY

Despite the low prevalence (<1%) of HIV, the people of Bangladesh are vulnerable to the HIV epidemic. Cases have been found in successive rounds of sero-surveillance among sex workers, injecting drug users, and other vulnerable populations. The annual behavioural surveillance has found that risk behaviour among these groups was at least as prevalent as in other Asian countries with a concentrated epidemic. The epidemic is already advanced in neighbouring Myanmar, Nepal, and parts of India where HIV infection is linked to sexual risk behaviour of men, commercial sex, injecting drugs, other blood exposures, and work mobility.

One of the ways HIV can be introduced into a low-prevalence country is through people returning from high-prevalence countries where they have engaged in risky behaviours. Data from three voluntary counselling and testing units operated by ICDDR,B indicate that 47 (18.1%) of 259 persons tested during 2002-2004 were HIV-positive. Of these, 29 were adult males who had returned from abroad, 7 were wives of migrant workers, and 4 were children of HIV-positive migrant workers. In the last decade, 200,000-400,000 Bangladeshi men were officially recorded as migrating out for work each year, mostly to the Middle East, and many more are known to leave informally. Insufficient research has been conducted on the association between separation from spouse and risk behaviour, and no data have been published.

This study aimed at comparing risk behaviour between married people who had lived apart from their spouses and those who had not. For women, the referent group was women who had not lived apart from their husbands for at least 5 years; the other migration-status groups were women whose husbands were living elsewhere in Bangladesh and women whose husbands were living abroad. For men, the referent group was men who had lived at home with their wives for at least 5 years; the other groups were men who had returned from living separately elsewhere in Bangladesh and those who had returned from living separately abroad.

A cross-sectional survey was conducted among a sample of 1,175 married women and 703 married men randomly selected from a database of over 11,000 married women in two areas where health and demographic surveillance is routinely conducted by the ICDDR,B. Samples of each migration-status group were drawn in proportion to the numbers in these groups in these areas (Area A in Chittagong division; Area B in Khulna division). The proportion of selected respondents with whom completed interviews were conducted ranged between 69% and 90% in the different groups. Non-response was due mainly to temporary absence and sickness, and only three people refused interviews. Adjusted odds ratios (AORs; exposure/non-exposure to different factors) were calculated to compare the likelihood of sexual and other risk behaviours among different groups, controlling for age, length of marriage, years of schooling, household expenditure, and area of family residence.

Men who had returned from living abroad had been working in United Arab Emirates (35%), Oman (16%), Saudi Arabia (16%), Kuwait (11%), Pakistan (8%), Malaysia (6%), and India (3%). Men who had lived away from home in Bangladesh had worked in Chittagong, Dhaka, or Khulna divisions, particularly in the major port city of Chittagong (43%) and the capital city Dhaka (19%).

The use of alcohol was the only health-risk behaviour that was more frequently reported ($p < 0.05$) by men who had lived away (24-28%) than by men who had not (16%). Women were much less likely to report health-risk behaviours: one woman had used alcohol, and two had used heroin. Only one man who had lived away in Bangladesh had injected drugs (non-medical use). Relatively few women (2-4%) and men (1-2%) in different migration-status groups had ever-received a blood transfusion. Similar proportions of women (22-28%) and men (17-28%) had received an injection for medical purposes. Most of them reported to use a disposable syringe and needle, although the majority of injections had been given by unqualified practitioners.

Sexual risk behaviour was quite common and more frequently reported by men and women separated by work migration of husbands. More than half (59.8%) of men who had lived away from their wives in Bangladesh (95% confidence interval [CI] 50.9-68.7) and two-thirds (67.0%) of those who had lived abroad (95% CI 60.1-73.9) reported penetrative sex with someone other than their wives since marriage, significantly higher than for men who had not lived away from their wives (25.6% [95% CI 21.4-29.8]). The prevalence of reported extramarital sex was similar in the two study

areas. Multiple logistic regression analysis indicated that, after controlling for sociodemographic factors, men who had lived away in Bangladesh or abroad were 5-6 times more likely to have had extramarital sex: adjusted odds ratio (AOR)=4.6 (95% CI 2.9-7.3) and AOR=6.0 (95% CI 3.9-9.3) respectively.

Men were 2-3 times more likely ($p<0.05$) to have had sex with a female sex worker while living away than before. About half of migrant men reported sex with a sex worker while living away in Bangladesh (46.1% [95% CI 37.1-55.1]) or abroad (53.6% [95% CI 46.3-60.9]). Of these men, 7 (3.9%) reported sex with a sex worker after returning to Bangladesh in the last 12 months. A significantly higher proportion ($p<0.05$) of men who had lived away from their wives in Bangladesh (8.5% [95% CI 3.4-13.6]) or abroad (6.1% [95% CI 2.6-9.6]) reported anal sex with another male since marriage compared to those not living apart from their wives (2.5% [95% CI 1.0-4.0]). The proportion was also significantly higher ($p<0.05$) for men having sex with another male while living away in Bangladesh compared to those who had not lived away.

Fewer women than men reported extramarital penetrative sex, although again the proportion was significantly higher ($p<0.05$) among women whose husbands were living away in Bangladesh (10.6% [95% CI 7.5-13.7]) or abroad (6.8% [95% CI 4.4-9.2]) compared to the referent group of women who had not lived apart from their husbands (3.0% [CI 1.3-4.7]). Multiple logistic regressions indicated that women whose husbands were living away from home were about 4 times more likely to report extramarital sex. This was statistically significant after controlling for sociodemographic factors: AOR 4.0 (95% CI 2.0-7.9) for women whose husbands were living away in Bangladesh and AOR 3.6 (95% CI 1.5-8.9) for women whose husbands were abroad.

The period of separation from spouse was a significant predictor of extramarital sex, with relative risk increasing with a longer period of separation. Multiple logistic regression indicated that men who had lived apart within Bangladesh for at least six months were 8 times more likely to report extramarital sex than those who had not lived apart: AOR 8.2 (95% CI 3.8-17.8). Those who had lived abroad for 4 years or more were also 8 times more likely to report extramarital sex: AOR 8.5 (95% CI 4.2-16.8). Women living apart from their husbands for these periods were similarly at higher risk.

Less than one-third of men reported using a condom with their wives, with a little difference between migrant and non-migrant men (28-30%). The proportion was also not higher among men who reported extramarital sex. Less than one-third of men who had sex with a sex worker had used a condom and only 2 of 33 men who reported sex with another male had used a condom.

The study revealed a low level of knowledge about the risk of contracting sexually transmitted diseases (STDs) and HIV/AIDS and the means of prevention. A higher proportion of men (85-95%) than women (60-75%) had heard about HIV/AIDS, and television was the most frequently-mentioned source of information (76-90%). A higher proportion of men (72-78%) than women (53-63%) mentioned sexual intercourse as a means of transmission of HIV. A slightly higher proportion of women (21-31%) than men (15-23%) mentioned use of condom as a means of avoiding infection. Only 11-15% of men and 9-11% of women had discussed HIV/AIDS with their spouses and a very few (<2%) had discussed HIV/AIDS with a health worker.

More women (38-48%) than men (14-30%) had experienced STD symptoms, and the proportions were higher among those who reported extramarital sex than among those who did not. A relatively high proportion of women (20-33%) and men (3-48%) had not sought treatment, and many of those who did had consulted an unlicensed practitioner or a pharmacist.

Despite widespread perception among the respondents that extramarital sex by men was common, particularly by men living away from home, <3% of women perceived that they themselves were at a risk of HIV infection. Men who had lived away from home were significantly more likely ($p<0.05$) to perceive that they were at risk compared to men who had not lived away (20% vs 9%). After controlling for other factors, men who had lived abroad were twice as likely to perceive that they were at a risk of HIV infection.

While medical injections by unqualified practitioners were quite common, constituting a potential risk of HIV infection, this study found that unprotected extramarital sex was likely to be the most important risk factor for married people. Extramarital sex was quite common among married men and was much more prevalent among migrant men who had lived apart from their wives either in

Bangladesh or abroad. Although women were less likely to report extramarital sex, they were more likely to report this if their husbands were living away from home. Not surprisingly, the likelihood of extramarital sex by women and men increased with length of separation from their spouses. Higher reporting by men of extramarital sex while living away than before living away from their wives also indicates an association with separation. The fact that migrant men were much more likely to have had sex with a female sex worker or another male while living away than before living away, mostly without use of condom, indicates potential for men to contract sexually transmitted infections while living away and for wives to become infected on their return.

The proportion of men reporting sex with a female sex worker while abroad was particularly high (about half). Although HIV is not very prevalent in the Middle-East countries where most Bangladeshi men go to work, little is known about its prevalence among female sex workers, and HIV cases have been found among returning migrant men. To the extent that these men who voluntarily sought testing contracted infection abroad, other returning migrants may have been exposed to HIV infection. As some men who reported sex with a sex worker abroad and had sex with a sex worker in Bangladesh after return, this constitutes a potential route for HIV to be introduced into the country and into a very sexually active group who report a low use of condom while having sex with clients.

The findings of the study suggest that there is an urgent need to communicate to the general public that there is a serious risk of contracting sexually transmitted infections through certain risk behaviours and practices. Behaviour change communication (BCC) through mass media should be enhanced to raise awareness about HIV/AIDS and the risk from different exposures, particularly unprotected sex outside marriage. More targeted BCC is required for migrant workers, in which NGOs can play a major role by contacting migrant workers and their spouses to provide information, without stigmatizing them. Pre-departure counselling about the risks from unprotected sex could be part of the official migration process, with promotion of voluntary counselling and testing for returning migrants. BCC in this context and in the community should emphasize the use of condom and the risk of men transmitting HIV infection to their wives and future children if they engage in unprotected extramarital sex.

INTRODUCTION

Despite the low prevalence (<1%) of HIV, the population of Bangladesh is vulnerable to an HIV epidemic. Cases have been found in successive rounds of sero-surveillance among sex workers, injecting drug users, and other vulnerable populations (1,2). The annual behavioural surveillance has found that risk behaviour among these groups is at least as prevalent as in Asian countries with a concentrated epidemic. The epidemic is already advanced in neighbouring Myanmar, Nepal, and parts of India (3), where HIV infection is linked to sexual risk behaviour of men, commercial sex, injecting drugs, other blood exposures, and work mobility (4,5).

One of the ways that HIV can be introduced into a low-prevalence country is through people returning from high-prevalence countries where they were engaged in risky behaviours. Temporary work-migration to India has contributed to the epidemic in Nepal. A recent study in one district with high rates of migration to India found a significantly higher proportion of men who had lived away from home reported having sex with a sex worker. The prevalence of HIV was significantly higher among men who had lived abroad (3.7%) or elsewhere in Nepal (3.0%) compared to men from the same area who had not lived away (0.7%) (5,6). The study concluded that a behaviour change-communication (BCC) programme is urgently needed focusing on men who go abroad for work to prevent the spread of HIV among the general population.

The major role of work mobility and migration in HIV transmission is well-established (7,8). Research has often focused on migrants themselves, although a study among employment-seekers in Shanghai, China, concluded that rurally-located partners and spouses were also at an increased risk of HIV infection (9). In Bangladesh, most passively-reported HIV-positive cases have been men who have returned from abroad, or their family members, although such men may be more likely to seek testing. Of 259 people tested during 2002-2004 at the 3 voluntary counselling and testing (VCT) units operated by ICDDR,B, 47 (18.1%) were HIV-positive: 29 were adult males who had returned from abroad, 7 were wives of migrant workers, and 4 were children of HIV-positive migrant workers (10). A genetic sequencing study of a small number of HIV-positive cases also found that most had a history of travel to India or the Middle-East (11).

Although the prevalence of HIV is low in the Middle-East countries where the majority of Bangladeshi men go to work temporarily, HIV infection was found in sex workers (Yemen), men who had sex with men (Egypt and Morocco), and injecting drug users (several countries) (4). The national behavioural surveillance in Bangladesh found that sex with sex workers is common among men in certain occupational groups who are mobile within the country (1), and there is anecdotal evidence from qualitative studies that sexual risk behaviours are common among Bangladeshis who work abroad (12-15).

Migration is an important livelihood strategy for many people in Bangladesh, which is one of the least-developed countries (16). In the last decade, 200,000-400,000 Bangladeshi men were officially recorded as migrating out for work each year, mostly to the Middle East countries, and many more men and women are known to leave informally (15,17). Both poor and better-off people migrate for work, although the poorest are more likely to migrate within Bangladesh to work in the informal sector, while many women migrate for work in garments and food-processing industries (18). Temporary migration for work abroad or elsewhere in Bangladesh affects many families, particularly in certain areas. In a rural area in Chittagong division, about one-quarter of married women of reproductive age (15-49 years) (referred to henceforth as married women) reported that their husbands were living away for work (8% in Bangladesh and 17% abroad) (19).

Many men married and unmarried work away from home for extended periods, but quantitative evidence of relationship between separation from spouse and sexual risk behaviour has not been reported. In this study, we focused on sexual risk behaviours of married women and men who had lived apart due to husbands' migration, because data from the routine surveillance by ICDDR,B provided a sampling frame and a means of identifying husbands who migrated separately. Female migration has been increasing in recent years, particularly within Bangladesh, and possibly half of them are married (17). However, no information was available from the routine surveillance on migration without husbands, while few married women had returned from abroad. The study focused

on married people, although premarital sex has been reported, particularly by young men (20,21). Sexual risk behaviours of married people could have important implications for the spread of HIV in Bangladesh, as more than 99% of people get married (22). Married women may be vulnerable to sexually transmitted infections due to sexual risk behaviour of their husbands, particularly if men live away from home for extended periods. Previous studies reported that most married men who had sex with a sex worker subsequently had sex with their wives (21,23). The present study aimed at quantifying reported sexual risk behaviours among married men and women in two rural areas of Bangladesh, comparing the prevalence among those who had, or had not, lived apart from their spouses due to husbands' work migration.

MATERIALS AND METHODS

Study design

This comparative study focused on sexual risk behaviours among different migration-status groups, although data on other risk behaviours were collected. It was based on a cross-sectional survey of a random sample of married men and women in two rural areas of Bangladesh where a health and demographic surveillance is conducted by ICDDR,B. Data routinely collected from married women in quarterly surveillance rounds enabled identification and random sampling of sub-groups (migration-status groups) of married women and men who had not lived apart from their spouses, were currently living apart, or had lived apart in the last 5 years due to husbands' work migration. The working definition of living apart was the same as that used for defining out-migration from the surveillance areas, i.e. an absence of husband for more than 60 days. The main aim was to collect data on reported extramarital sex, condom-use, and other risk behaviours and to quantify the association with separation from spouse and other factors.

Surveillance areas

The Health Systems and Infectious Diseases (HSID) division of ICDDR,B conducts a health and demographic surveillance in two rural field sites: area A, consisting of 5 unions (total population about 22,000) in one upazila (sub-district) in Khulna division; and area B, consisting of 7 unions (total population about 38,000) in one upazila in Chittagong division. The surveillance has been conducted in the Khulna area (A) since 1982 and in the Chittagong area (B) since 1994, with sampling fractions of 1/6 and 1/4 households respectively (about 4,500 and 6,900 surveillance households). Area B has high rates of temporary migration for work abroad, while area A has many men who travel for work elsewhere in Bangladesh, or make short visits to India. Data have been routinely collected from all married women aged 15-49 years in the surveillance households through quarterly interviews, including sociodemographic information on household members, changes in marital status, and migrations in and out (date, reasons, and destination).

Study population

The study population comprised currently-married women aged 15-49 years under surveillance in area A and B and husbands of women under surveillance. In the third surveillance round of 2004, there were 4,365 married women under surveillance in area A and 6,511 in area B. Of these 11,146 women, 8,961 (80.4%) were living with their husbands at home (5,590 had not lived apart for at least 5 years), 985 (8.8%) had husbands living elsewhere in Bangladesh, and 1,214 (10.9%) had husbands living abroad.

Migration-status groups, sampling, and sample size

The study aimed at comparing sexual risk behaviours between a gender-specific referent group who had not lived apart from their spouses (>60 days) and two other migration-status groups. For women, the referent group was women who had lived at home with their husbands during the last 5 years; the other groups were women with husbands currently living elsewhere in Bangladesh and women with husbands living abroad. For men, the referent group consisted of those who had lived at home with

their wives for at least 5 years; the other groups were men who had returned from living separately elsewhere in Bangladesh and those who had returned from living separately abroad in the last 5 years.

The calculation of sample size was based on the standard formulae (24). A sample of 386 was required for precision of ± 0.05 on estimated proportions. A sample of this size for each migration-status group of married women or men would give acceptable precision of ± 0.1 on the difference between estimated proportions (e.g. 0.55 and 0.45), with 80% power.

The database of married women who had been interviewed in the quarterly surveillance rounds since January 1999 provided a sampling frame for different migration-status groups. For groups with sufficient numbers, samples were selected at random from the database using computerized randomization. The number selected was in proportion to the population in the group in each surveillance area. For the sample of women whose husbands had not lived away, the sampling frame included women who had been in this category in every surveillance round since January 1999. Samples of women whose husbands were currently living separately in Bangladesh or abroad were randomly selected from the database for the June-September 2004 surveillance round.

From the database of women under surveillance since January 1999, a list was made of all those whose husbands had lived away for more than 60 days and had returned. Alternate husbands were selected for interview for this study. Interviews with some women were required for another study, and both partners could not be interviewed because of the risk of generating marital conflict.

Field teams were given lists of randomly-selected women and men for interview, including some extra to allow for non-response. This led to the number of interviews exceeding the target for 3 of the larger migration-status groups. Some husbands previously living at home had been living away for more than 60 days at the time of visit, and these women were not interviewed.

Data collection

Eight male and eight female interviewers were trained for 3 weeks, and interviews were conducted during October-December 2004. Information collected included length of marriage; migration of the husband, locations, work, the longest period of separation from spouse; sociodemographic characteristics; knowledge of transmission and prevention of HIV/AIDS; discussion of HIV/AIDS with spouse and others; perception of risk for HIV infection; extramarital penetrative sex (defined to respondents as vaginal sex between men and women; anal sex between males); male condom-use; and experience of symptoms of sexually transmitted diseases (STDs). Before starting data collection, two workshops were held in the study areas to inform local health managers about the study objectives and use of findings.

Ethical clearance was obtained for the study from the Ethical Review Committee of ICDDR,B. Verbal permission was sought from potential respondents who were informed about the purpose of the study, that their responses would be kept confidential, that they could terminate the interview at any time, and that privacy would be required. As women in particular might under-report extramarital sex, considerable effort was made to reassure them of anonymity and that the information provided would not be linked with the routine surveillance data (questionnaires were unlinked and anonymous). The male and female interviewers interviewed male and female respondents respectively, and couple interviews were avoided because of the sensitive nature of questions and the possibility of introducing social bias. At the end of all interviews, respondents were offered a leaflet used by the VCT units of ICDDR,B, which contained basic information on HIV/AIDS, including the location of VCT units.

Data analysis

Bivariate analysis was conducted using the SPSS software to determine the prevalence of different responses among different migration-status groups. In view of the comparability of the sociodemographic profiles of respondents in the two study areas and of other key variables, analysis focused mainly on the combined sample, although estimates of the prevalence of extramarital sex are also presented for the two areas separately. The statistical significance of differences in proportions between the migration-status groups and the gender-specific referent group was assessed on the basis

of non-overlapping 95% confidence interval and p value (<0.05). Multiple logistic regression analysis was conducted using the SPSS software. Adjusted odds ratios (AOR; exposure/non-exposure to different factors) were calculated, controlling for sociodemographic factors (age, years of schooling, length of marriage, average monthly household expenditure, and area of family residence). Data were modelled to assess what factors, including living apart from spouse, were associated with extramarital sex and condom-use.

RESULTS

Sociodemographic characteristics of respondents

In total, 1,569 married women and 874 married men were randomly selected from the database and were confirmed by interviewers to be in the migration-status group required. Of these, 1,175 (74.9%) women and 703 (80.4%) men completed interviews. The percentage of the samples of migration-status groups that resulted in completed interviews ranged from 69% to 90% (Table 1). Non-response was due mainly to temporary absence and sickness, and only 3 people refused interviews.

Migration-status group	Sample selected and currently in the correct group	No. absent/sick (refused)	No. completed interviews (% response)
Married women (aged 15-49 years)			
Not lived apart from husband	494	98	396 (79.4)
Husband currently away in Bangladesh	533	163 (2)	368 (69.0)
Husband currently abroad	542	131	411 (75.4)
Husbands of married women (aged 15-49 years)			
Not lived apart from wife	521	114	407 (78.1)
Returned from Bangladesh	154	37	117 (76.0)
Returned from abroad	199	19 (1)	179 (89.9)

As mentioned, the samples from the two areas did not differ significantly (95% confidence interval overlap) in terms of age, years of schooling, occupation, and length of marriage (Appendix I and II). However, a significantly higher proportion of the respondents in area A were in households with lower monthly household expenditure ($p < 0.01$). Women with husbands living abroad and men who had returned from abroad were also more likely to report a higher household expenditure. Day labour was the most frequently-reported occupation among men in 3 migration-status groups (44-58%), followed by small business (19-28%) (Appendix 1). Men who had returned from living abroad had been working in the United Arab Emirates (35%), Oman (16%), Saudi Arabia (16%), Kuwait (11%), Pakistan (8%), Malaysia (6%), and India (3%) (Table 2). Most husbands who had lived away from home in Bangladesh had worked in Chittagong, Dhaka and Khulna divisions, particularly in the major port city of Chittagong (43%) and the capital city Dhaka (19%) (Table 3).

Current or last country men worked in	Women reporting		Men reporting	
	Husbands currently abroad (n=411)		Men who had returned from abroad (n=179)	
	No.	%	No.	%
Malaysia/Singapore	6	1.5	11	6.1
India	2	0.5	5	2.8
Pakistan	23	5.6	14	7.8
Saudi Arabia	87	21.2	28	15.6
Kuwait	61	14.8	20	11.1
United Arab Emirates	114	27.7	63	35.1
Oman	81	19.7	29	16.2
Qatar	18	4.3	6	3.4
Other Middle-East countries	8	1.9	1	0.6
Europe	4	1.0	1	0.6
Other countries	7	1.7	1	0.6

Place in Bangladesh men worked in*	Women reporting		Men reporting	
	Husbands currently away in Bangladesh (n=368)		Men returned from Bangladesh (n=117)	
	No.	%	No.	%
City areas				
Dhaka	78	21.2	22	18.8
Chittagong	85	23.0	50	42.7
Khulna	20	5.4	10	8.5
Other areas in the division				
Dhaka	35	9.5	10	8.5
Chittagong	78	21.2	33	28.2
Khulna	67	18.2	9	7.6
Other	17	4.6	13	11.1

*Multiple responses were accepted

The women whose husbands were currently living with them were less likely to have no children (3-6%) compared to those with a husband currently away in Bangladesh (13.6%) or abroad (10.9%) (Appendix III). Current contraceptive-use was lower among women with a husband abroad (5.6%), or away in Bangladesh (37.8%) compared to the referent group. The use of condoms was very low (<10%) in all the groups, although men who had returned from working elsewhere in Bangladesh were slightly more likely to report using condoms (13.7%). Significantly fewer women ($p<0.05$) in the referent group went to shops or pharmacies for contraceptives (Appendix III).

Sexual behaviour

Perceptions about extramarital sex in the community

Most men and women (85-100%) reported that at least some men from their community had extramarital sex (Table 4). More than one-quarter of men and women in different migration-status groups thought that 20-50% of men living with their wives had engaged in extramarital sex. About

three quarters of female respondents and slightly fewer men thought that 20-50% of men engaged in extramarital sex if they were separated from their wives.

Table 4. Perceptions of women and men in different migration-status groups about how common extramarital sex was among men						
Proportion of men thought to have extramarital sex	Percentage of married women reporting			Percentage of married men reporting		
	Husbands had not lived away (n=396)	Husbands away in B'desh (n=368)	Husbands currently abroad (n=411)	Men who had not lived away (n=407)	Men returned from B'desh (n=117)	Men returned from abroad (n=179)
Men not living away from their wives						
Some	86.9	89.9	89.5*	84.3	94.9*	93.9*
10%	56.5	52.9	58.1	48.1	58.1*	56.9*
20-50%	30.0	36.1*	30.1	26.7	27.3	31.2
Men living away from their wives						
Some	99.7	98.9	99.8	97.5	98.3	98.3
10%	20.7	13.3†	18.7	26.5	17.0†	12.2†
20-50%	72.9	76.6	72.7	54.2	62.3*	64.8*
Men whose wives are living away						
Some	100.0	98.9†	99.3	97.1	98.3	100.0*
10%	22.2	15.4†	19.7	41.7	24.7†	23.5†
20-50%	72.2	79.0*	75.4*	47.4	63.2*	65.3*

*Significantly higher than the referent group (p<0.05)
†Significantly lower than the referent group (p<0.05)
B'desh=Bangladesh

More than 95% of women in different migration-status groups thought that some women had extramarital sex if they were separated from their husbands (Table 5). However, it was clearly not thought to be as common as among men, since fewer women (about half) thought that 20-50% of women had extramarital sex if they are separated from their husbands (Table 5).

Table 5. Perceptions of women in different migration-status groups about how common extramarital sex was among women			
Migration-status groups of women thought to have extramarital sex	Percentage of married women reporting that women had extramarital sex		
	Husbands had not lived away (n=396)	Husbands away in Bangladesh (n=368)	Husbands currently abroad (n=411)
Women whose husbands had not lived away			
Some	74.0	76.1	73.2
10%	62.1	59.2	60.3
20-50%	11.8	16.5*	13.1
Women living away from their husbands			
Some	97.0	96.2	95.1†
10%	41.9	36.9	41.3
20-50%	54.0	58.9*	53.2
Women whose husbands were living away			
Some	97.0	95.9	93.9†
10%	45.7	40.4†	47.9
20-50%	50.7	55.4*	45.4†

*Significantly higher than the referent group (p<0.05)
†Significantly lower than the referent group (p<0.05)

Extramarital sex reported by men

The proportions of men within different migration-status groups reporting extramarital sex with any partner and with a female sex worker were similar in the two study areas (Table 6). In view of this and the similar sociodemographic profile of the study areas, other estimates are presented for the two areas combined to give a greater precision (Table 7). More than half (59.8%) of men who had lived away from their wives in Bangladesh (95% CI 50.9-68.7) and two-thirds (67.0%) of those who had lived abroad (95% CI 60.1-73.9) reported penetrative sex with someone other than their wives since marriage. The proportions were significantly ($p < 0.05$) higher than for men who had not lived away from their wives (25.6% [95% CI 21.4-29.8]).

Type of partner and survey area	Percentage of men reporting extramarital sex (95% CI)		
	Men who had not lived away (referent) (n=201)	Men who had returned from Bangladesh (n=92)	Men who had returned from abroad (n=164)
Sex with any partner			
Area A (Chittagong division)	27.9 (21.7-34.1)	58.7 (48.6-68.8)*	67.1 (59.9-74.3)*
Area B (Khulna division)	23.3 (17.5-29.1)	64.0 (45.2-82.8)*	66.7 (42.8-90.6)*
Sex with a female sex worker			
Area A (Chittagong division)	16.9 (11.7-22.1)	51.1 (40.9-61.3)*	57.9 (50.3-65.5)*
Area B (Khulna division)	13.6 (8.9-18.3)	44.0 (24.5-63.5)*	66.7 (42.8-90.6)*

CI=Confidence interval; *Significantly higher than the referent group (95% confidence interval does not overlap)

Type of extramarital sex	Percentage of men (95% CI)		
	Men who had not lived away (Referent) (n=407)	Men who had returned from Bangladesh (n=117)	Men who had returned from abroad (n=179)
Sex with any partner			
All men	25.6 (21.4-29.8)	59.8 (50.9-68.7)**	67.0 (60.1-73.9)**
Sex with a female sex worker			
Since marriage (all men)	15.2 (11.7-18.7)	49.6 (40.5-58.7)**	58.7 (51.5-65.9)**
Before living away from wife	-	13.7 (7.5-19.9)	23.9 (17.7-30.1)
While living away from wife	-	46.1 (37.1-55.1)	53.6 (46.3-60.9)
Sex with any male			
Since marriage (all men)	2.5 (1.0-4.0)	8.5 (3.4-13.6)*	6.1 (2.6-9.6)*
Before living away from wife	-	1.7 (0.0-4.0)	2.8 (0.4-5.2)
While living away from wife	-	7.6 (2.8-12.4)	3.9 (1.1-6.7)

*Significantly higher than the referent group ($p < 0.05$)
 **Significantly higher than the referent group (95% confidence interval does not overlap)
 CI=Confidence interval

The proportion of men reporting lifetime extramarital sex was similar within different sub-groups, by age, years of schooling, length of marriage, occupation, and monthly household expenditure (Appendix IV). Multiple logistic regression analysis indicated that none of these sociodemographic factors was significantly associated with extramarital sex. After controlling for these variables, men who had lived away in Bangladesh or abroad were 5-6 times more likely to have had extramarital sex: AOR 4.6 (95% CI 2.9-7.3) and AOR 6.0 (95% CI 3.9-9.3) respectively (Table 8).

About half of men who had lived away had sex with a female sex worker while living away, which was 2-3 times the proportion who had sex with a sex worker before living away ($p < 0.05$). Men who had extramarital sex before living away were 7 times more likely to have had extramarital sex while living away in Bangladesh and 3 times more likely to have had extramarital sex while living abroad compared to men who had not had extramarital sex before living away: AOR 6.8 (95% CI 2.0-22.6) and AOR 2.8 (95% CI 1.1-7.0) respectively.

Independent variable	Estimates of relative risk for extramarital sex among men (any partner since marriage)	
	Men who had returned from living away from Bangladesh	Men who had returned from living from abroad
	Age <35 years	0.9 (0.5-1.6)
Years of schooling <6	0.9 (0.6-1.4)	0.9 (0.6-1.4)
Married <10 years	0.7 (0.4-1.3)	0.9 (0.5-1.4)
Monthly household expenditure <4,000 taka	1.6 (1.0-2.5)*	1.6 (1.1-2.5)*
Area B (Khulna division)	1.3 (0.8-1.9)	1.4 (0.9-2.1)
Lived apart from wife	4.6 (2.9-7.3)*	6.0 (3.9-9.3)*

*Significantly raised risk based on 95% confidence interval

About half of men (46.1%) who had lived away had sex with a female sex worker while living away in Bangladesh (95% CI 37.1-55.1) or abroad (53.6%) (95% CI 46.3-60.9). This was significantly higher (2-3 times; $p < 0.05$) than the proportions reporting sex with a sex worker before living away and compared to the proportion of men not living away who had sex with a sex worker (Table 7). Of men who had sex with a sex worker abroad, 7 (3.9%) had sex with a sex worker after returning to Bangladesh (in the last 12 months).

A significantly higher proportion ($p < 0.05$) of men who had lived away from their wives in Bangladesh (8.5%) (CI 3.4-13.6) or abroad (6.1%) (CI 2.6-9.6) had sex with another male since marriage compared to those not living apart from their wives (2.5%) (95% CI 1.0-4.0). The proportion of men who reported sex with a male while living away was also higher than the proportion reporting sex with a male before living away, and the difference was statistically significant ($p < 0.05$) for men who had lived away in Bangladesh (Table 7). No men who had lived away reported that they had had sex with a male sex worker, although two men who had not lived away reported this.

Extramarital sex reported by women

Fewer women than men reported lifetime extramarital penetrative sex, although again the proportion was significantly higher ($p < 0.05$) among women whose husbands were living away in Bangladesh (10.6%) (95% CI 7.5-13.7) or abroad (6.8%) (95% CI 4.4-9.2) compared to the referent group of women who had not lived apart from their husbands (3.0%) (CI 1.3-4.7) (Table 9). In contrast to men, there were significant differences in the proportion of women in different sociodemographic groups who reported extramarital sex. Of women whose husbands were living away, those in the lower household expenditure group (<4,000 taka per month) were significantly more likely ($p < 0.05$) than other women to report extramarital sex, as were women with less than 6 years of schooling.

Multiple logistic regression analysis indicated that women with husbands living away from home were about 4 times more likely to report lifetime extramarital sex compared to those who had

not lived apart. This was statistically significant after controlling for sociodemographic factors: AOR 4.0 (95% CI 2.0-7.9) for women with husbands away in Bangladesh and AOR 3.6 (95% CI 1.5-8.9) for women with husbands living abroad (Table 10).

Women whose husbands were away were also significantly more likely ($p < 0.05$) to report extramarital sex in the last 12 months compared to women who had not lived away from their husbands (Table 9).

Sub-groups of women reporting extramarital sex	Percentage of women reporting extramarital sex (95% CI [±])		
	Husband had not lived away (n=396)	Husband away in Bangladesh (n=368)	Husband currently abroad (n=411)
All women			
Since marriage	3.0 (1.3-4.7)	10.6 (7.5-13.7)**	6.8 (4.4-9.2)*
While husband away	N/A	10.3 (7.2-13.4)	6.8 (4.4-6.4)
In the last 12 months	1.8 (0.5-3.1)	5.7 (3.3-8.1)*	4.4 (2.4-6.4)*
Area			
Mirsarai	3.5 (0.9-6.1)	10.0 (6.4-13.6)**	6.1 (3.7-8.5)*
Abhoynagar	2.5 (0.3-4.7)	12.0 (5.9-18.1)**	19.0 (2.2-35.8)*
Household expenditure			
<4,000 taka	3.6 (0.9-6.0)	13.5 (10.0-17.0)**	13.0 (9.7-16.3)**
4,000+ taka	2.5 (0.3-4.8)	8.3 (5.5-11.1)**	5.4 (3.2-7.6)*
Age (years)			
<35	3.5 (1.2-5.5)	10.6 (7.5-13.7)**	7.2 (4.7-9.7)*
35+	2.3 (0.0-5.0)	10.5 (7.4-13.6)**	5.8 (4.0-7.6)
Years (years) of schooling			
<6	3.0 (1.0-5.1)	13.3 (8.4-18.2)**	9.9 (7.0-12.8)**
6+	3.0 (0.1-6.0)	7.8 (3.9-11.7)	4.6 (1.9- 7.5)
*Significantly higher than the referent group ($p < 0.05$)			
**Significantly higher than the referent group (95% confidence intervals do not overlap)			
CI=Confidence interval			
N/A=Not applicable			

Table 10. Factors associated with extramarital sex, by married women: adjusted odds ratios as estimates of relative risk

Independent variable	Estimates of relative risk for extramarital sex among women (Any partner since marriage)	
	Women whose husbands were away in Bangladesh	Women whose husbands were currently abroad
Age <35 years	1.2 (0.5-2.8)	1.7 (0.7-4.0)
Years of schooling <6	1.6 (0.8-3.3)	1.9 (0.9-4.2)
Married <10 years	1.2 (0.6-2.6)	1.0 (0.4-2.1)
Monthly household expenditure <4,000 taka	1.5 (0.8-2.2)	1.8 (0.9-3.8)
Area B (Khulna division)	1.1 (0.6-2.2)	0.8 (0.3-2.3)
Living apart from husband	4.0 (2.0-7.9)*	3.6 (1.5-8.9)*

*Significantly-raised risk based on 95% confidence interval

Partners in extramarital sex

The most commonly-reported sex partner among married men (17-72%) and women (33-75%) was a neighbour (Table 11). Men who had lived away were more likely to report that they had sex with a stranger: 33% of men who had lived away in Bangladesh and 22% of men who had lived abroad compared to 6.2% of men who had not lived away from their wives (Table 11).

Table 11. Partners in extramarital sex in the last 12 months, by migration status (%)

Sex partner	Number of married women			Number of married men		
	Husbands had not lived away* (n=7)	Husbands away in Bangladesh (n=21)	Husband currently abroad (n=18)	Men who had not lived away (n=18)	Men returned from Bangladesh (n=12)	Men returned from abroad (n=9)
Friend	14	5	6	0	8	0
Cousin	29	14	0	11	17	0
Neighbour	71	48	33	72	17	56
Stranger	0	14	0	6	33	22
Others**	0	29	67	17	17	22

*Multiple responses were accepted
 **Includes brother/sister-in-law, husband's/brother's friend, colleague, boy/girl friend, nephew, and maidservant

Length of separation from spouse

Length of separation from spouse was a significant predictor of lifetime extramarital sex, with relative risk increasing with length of separation (the longest period experienced). Multiple logistic regression analysis indicated that men who had lived apart from their wives within Bangladesh for at least 6 months were 8 times more likely to report extramarital sex than those who had not lived apart: AOR 8.2 (95% CI 3.8-17.8). Men who had lived abroad for more than 4 years were about 8 times more likely to report extramarital sex: AOR 8.5 (95% CI 4.2-16.8). Women living apart from their husbands for these periods were also at a much higher risk of extramarital sex (Table 12).

Table 12. Length of separation from spouse: adjusted odds ratios as estimates of relative risk for extramarital sex (any partner), by married men and women		
Longest period (months) of separation	Estimates of relative risk for extramarital sex: adjusted odds ratios** (95% confidence interval)	
	Married men returned home	Married women with husbands living away
	Men away in Bangladesh	Husbands away in Bangladesh
Not lived away	1 (referent)	1 (referent)
2-3	2.5 (1.3-5.7)*	2.4 (1.0-5.9)*
3-5	4.1 (2.1-8.1)*	2.6 (1.1-7.1)*
6+	8.2 (3.8-17.8)*	7.4 (3.4-16.2)*
	Men abroad	Husbands abroad
Not lived away	1 (referent)	1 (referent)
2-25	4.1 (2.2-7.6)*	3.1 (1.0-9.3)*
25-48	6.7 (3.7-12.3)*	2.5 (0.9-7.8)*
>48	8.5 (4.2-16.8)*	6.1 (2.1-18.1)*

*Significantly-raised risk based on 95% confidence interval
**Controlled for age, length of marriage, years of schooling, monthly household expenditure, and area of family residence.

Considering only the men who had lived away, the risk of extramarital sex while away increased significantly with length of separation from spouse, after controlling for extramarital sex before living apart and sociodemographic factors (Table 13).

Table 13. Length of separation from wife: adjusted odds ratios as estimates of relative risk for extramarital sex (any partner), by men while living away		
Independent variable	Estimates of relative risk for extramarital sex: adjusted odds ratio (95% confidence interval)	
	Married men returned from living elsewhere in Bangladesh	Married men returned from living abroad
Age <35 years	0.4 (0.1-1.2)	1.6 (0.6-4.2)
Length of marriage <10 years	2.9 (0.8-10.3)	2.0 (0.9-4.8)
Schooling <6 years	0.9 (0.4-2.1)	1.1 (0.6-2.2)
Household expenditure <Taka 4,000	2.2 (0.9-5.3)	1.9 (1.0-3.7)
Area (Chittagong: A)	1.5 (0.5-4.2)	0.7 (0.2-2.4)
Extramarital sex before living away	6.8 (2.0-22.6)*	2.8 (1.1-7.0)*
Longest period (months) of separation		
<3	1 (referent)	1 (referent)
3-5	3.4 (1.2-9.8)*	2.7 (1.2-6.2)*
6+	7.2 (2.3-23.1)*	3.8 (1.5-9.5)*

*Significantly-raised risk based on 95% confidence interval

Use of condoms

Use of condoms reported by men

The use of condoms during extramarital sex was low (Table 14), but significantly higher ($p < 0.05$) among men who had lived abroad (27.5%) (95% CI 18.3-36.7) compared to those who had not lived away from their wives (16.6%) (95% CI 8.3-24.9). None of men who had not lived apart from their wives and who reported extramarital sex had used a condom every time they had sex, although this was reported by some men who had lived abroad (8.7%) (95% CI 2.9-14.5). There was a slightly higher use of condoms (ever-used) during sex with a sex worker, ranging from 24% to 31% in the 3

migration-status groups. A very few men (<7%) reported using a condom every time with a sex worker, and a very few men (<10%) who reported sex with a male had ever used a condom with a male partner.

Condom used	Percentage of married men reporting condom-use (95% CI)		
	Men who had not lived away (referent)	Men returned from Bangladesh	Men returned from abroad
With wife	(n=407)	(n=117)	(n=179)
Ever-used	28.3 (23.9-32.7)	30.8 (22.4-39.2)	30.7 (23.9-37.5)
Last time	8.4 (5.7-11.1)	12.0 (6.1-17.9)*	5.6 (2.21-9.0)
Extramarital sex	(n=77)	(n=55)	(n=91)
Ever-used	16.6 (8.3-24.9)	18.6 (8.3-28.9)	27.5 (18.3-36.7)*
Last time	1.3 (0.0-3.8)	9.1 (1.5-16.7)*	13.1 (6.2-20.0)**
Female sex worker	(n=62)	(n=58)	(n=105)
Ever-used	24.2 (13.5-34.9)	27.6 (16.1-39.1)	31.4 (22.5-40.3)
Last time	6.5 (0.4-12.6)	17.2 (7.5-26.9)*	13.2 (6.7-19.7)*
Male to male sex	(n=12)	(n=10)	(n=11)
Ever-used	0.0 (-)	10.0 (0.0-28.6)*	9.1 (0.0-26.1)
Last time	0.0 (-)	0.0 (-)	0.0 (-)

*Significantly higher than the referent group (p<0.05)
 **Significantly higher than the referent group (95% confidence interval does not overlap)
 CI=Confidence interval

Less than one-third of men used a condom while having sex with their wives, with a little difference between migrant and non-migrant men (28-30%). The proportion was also not higher among men who had extramarital sex. For men who had returned from living elsewhere in Bangladesh, the proportion who had ever-used a condom during sex with their wives was significantly lower (p<0.05) among those who had extramarital sex (16.5%) than among those who did not (43.5%).

Independent variable	Estimates of relative risk for using a condom (ever): adjusted odds ratios† (95% confidence interval)
<i>Sex with a female sex worker</i>	
Men returned from Bangladesh	
Knows-HIV is transmitted by sex	4.1 (1.0-15.9)*
Knows-condom protects against HIV	10.7 (3.1-37.3)*
Men returned from abroad	
Knows-HIV is transmitted by sex	4.3 (1.5-12.6)*
Knows-condom protects against HIV	8.1 (2.9-22.4)*
<i>Sex with wife</i>	
Knows-HIV is transmitted by sex	1.7 (1.1-2.8)*
Knows-condom protects against HIV	3.6 (2.3-5.5)*
Reported extramarital sex	0.9 (0.6-1.4)
Has lived apart from wife	1.1 (0.8-1.7)

*Significantly-raised risk based on 95% confidence interval
 †Controlled for age, length of marriage, years of schooling, monthly household expenditure, and area of family residence

Multiple logistic regression analysis showed that married men who had returned from living away (Bangladesh or abroad) were 4 times more likely to have used a condom with a sex worker if they knew about sexual transmission of HIV. Those who knew that using condoms protects against HIV were 8-10 times more likely to have used a condom with a sex worker compared to those who did not mention this as a means of prevention (Table 15). Knowledge about transmission and prevention of HIV was also associated with condom-use during marital sex. However, neither reported extramarital sex nor a period of separation from their wives was associated with an increased condom-use (Table 15).

Other risk behaviours and practices

Other risk behaviours and practices

The use of alcohol was the only health-risk behaviour that was more frequently reported ($p<0.05$) by men who had lived away (24-28%) than by men who had not (16%). A very few women reported any of the health-risk behaviours: one had used alcohol and two had used heroin. Only one man who had lived away in Bangladesh reported that he had injected drugs (non-medical use).

Health-risk behaviour	Percentage of married women			Percentage of married men		
	Husbands had not lived away (n=396)	Husbands away in Bangladesh (n=368)	Husbands currently abroad (n=411)	Men who had not lived away (n=407)	Men returned from Bangladesh (n=117)	Men returned from abroad (n=179)
Ever-used						
Alcohol	0	0.3	0	16.2 (12.6-19.8)	24.8 (17.0-32.6)*	28.0 (21.4-34.6)*
Ganja/cannabis	0	0	0	12.0 (8.8-13.2)	17.1 (10.3-23.9)	8.9 (4.7-13.1)
Phensidyl	0	0	0	2.2 (0.8-3.6)	2.6 (0.3-5.5)	2.2 (0.1-4.3)
Heroin	0.3	0.3	0	0.7 (0.1-1.5)	1.7 (0.6-4.0)	0.6 (0.5-1.7)
Had received a blood transfusion	3.8 (1.9-5.7)	4.3 (2.2-6.4)	1.9 (0.6-3.2)	1.7 (0.4-3.0)	1.7 (0.6-4.0)	1.1 (0.4-2.6)
Received injection for medical reason (last 12 months)	27.8 (23.4-32.2)	22.6 (18.3-6.9)	21.9 (17.9-5.9)	28.0 (23.6-32.4)	17.1 (10.3-23.9)	27.9 (21.3-34.5)
Injected by						
Qualified provider	9.8 (6.9-12.7)	8.1 (5.3-10.9)	11.4 (8.3-14.5)	7.4 (4.9-9.9)	6.8 (2.2-11.4)	9.5 (5.2-13.8)
Medicine seller	4.3 (2.3-6.3)	3.3 (1.5-5.1)	4.1 (2.2-6.0)	5.4 (3.2-7.6)	4.3 (0.6-8.0)	5.6 (2.2-10.0)
Unqualified doctor	4.3 (2.3-6.3)	10.0 (6.9-13.1)	6.3 (4.0-8.6)	15.0 (11.5-18.5)	6.0 (1.7-8.0)	13.4 (8.4-18.4)
Injected with						
Disposable syringe	25.2 (20.9-29.5)	17.9 (14.0-21.8)	18.0 (14.3-21.7)	26.0 (21.7-30.3)	14.5 (8.1-20.9)	27.9 (21.3-34.5)
Reusable syringe	1.8 (0.5-3.1)	1.1 (0.0-2.2)	0.7 (0.1-1.5)	0.9 (0.0-1.8)	1.7 (0.6-4.0)	0
Not known	0.7 (0.1-1.5)	3.5 (1.6-5.4)	3.2 (1.5-4.9)	0.9 (0.0-1.8)	0.8 (0.8-2.4)	0

*Significantly higher than the referent group ($p<0.05$)

Only 2-4% of women and 1-2% of men in different migration-status groups had ever-received a blood transfusion; most could not say whether the blood had been screened for infection. Similar proportions of women (22-28%) and men (17-28%) in different migration-status groups had received an injection for medical purposes. Most reported that a disposable syringe and needle were used, although unqualified practitioners gave the majority of injections.

Knowledge about STD/HIV/AIDS

Knowledge about HIV/AIDS

A significantly higher ($p < 0.05$) proportion of men (85-95%) than women (60-75%) had heard about HIV/AIDS (Appendix V). Men who had returned from living away were more likely to know about HIV/AIDS (95%) than those who had not lived away (85%). Of women, those with husbands currently abroad were also more likely to know about HIV/AIDS (75%) than other migration-status groups of women (60-70%). Of those who had heard about HIV/AIDS, television was the main source of information for both women (76-81%) and men (88-90%) in different migration-status groups.

Knowledge about transmission of HIV

There was no consistent difference between migration-status groups with regard to reporting different modes of transmission of HIV. Men (71-78%) were significantly more likely ($p < 0.05$) than women (53-63%) to mention sexual intercourse, while more women than men mentioned blood transfusion (18-28% vs 15-20%) and injections with used needles/syringes (21-26% vs 12-16%) (Appendix V). A similar proportion of both men and women (16-22%) was able to state at least 3 modes of transmission of HIV, although a large proportion of women (13-20%) and men (12-19%) could not state any mode of HIV transmission. There were also some misconceptions about contracting HIV from using things that an HIV-infected person had used (2-6%).

Knowledge about means of prevention of HIV infection

Women (21-31%) were more likely than men (15-23%) to mention condom as a means of preventing HIV infection. Women whose husbands had lived away (24-31%) and men who had lived away themselves (22-23%) were more likely to mention condom than their respective referent groups (21.5%; 15.0%), and some differences were statistically significant (Appendix V). Around 35% of married women mentioned that limiting sex to one's spouse is a way of avoiding infection, a significantly higher proportion ($p < 0.05$) than among married men (10-14%) of different migration-status. Men were much more likely than women to mention avoiding sex with a sex worker (66-73% vs 22-27%) as a way of avoiding infection. A higher proportion of women (22-35%) than men (18-21%) knew two or more ways of preventing HIV, while 6-13% of men and women could not state any means of HIV prevention, although they had heard about HIV/AIDS.

Discussion and perception of risk of HIV/AIDS

The proportion of women and men who had discussed HIV/AIDS with their spouses was low among all the migration-status groups (9-18%). A significantly higher proportion ($p < 0.05$) of men (18-27%) than women (7-11%) had discussed this with friends or relatives, but a very few men or women (<2%) had any discussion with health workers (Table 17). Overall, the perception of risk of being infected with HIV was very low, particularly among women (<5%). Of men, perceived risk was highest among those who had lived away from their spouses (19-20%), and the proportion was significantly higher ($p < 0.05$) than among men who had not lived away (9%).

Discussion of HIV/AIDS and perceived risk	Percentage of married women			Percentage of married men		
	Husbands had not lived away (n=238)	Husbands away in Bangladesh (n=257)	Husbands currently abroad (n=309)	Men who had not lived away (n=348)	Men returned from Bangladesh (n=112)	Men returned from abroad (n=169)
Discussed with						
Spouses	16.0 (11.3-20.7)	12.8 (8.7-16.9)	9.4† (6.1-12.7)	15.8 (12.0-19.6)	14.3 (7.8-20.8)	11.8 (6.9-16.7)
Health workers	0.4 (0.0-1.2)	1.2* (0.0-2.5)	1.3* (0.0-2.6)	1.7 (0.3-3.1)	1.8 (0.0-4.3)	0.6 (0.0-1.8)
Friends/relatives	8.4 (4.9-11.9)	8.6 (5.2-12.0)	7.1 (4.2-10.0)	18.1 (14.1-22.1)	23.2* (15.4-31.0)	27.2* (20.5-33.9)
Perceived risk of getting HIV/AIDS						
At risk	1.8 (0.1-3.5)	3.9† (1.5-6.3)	2.9† (1.0-4.8)	8.9 (5.9-11.9)	19.6* (12.2-27.0)	20.7* (14.6-26.8)
High risk	0.0 (-)	0.0† (-)	0.0† (-)	0.9 (0.0-1.9)	0.9 (0.0-2.6)	1.2 (0.0-2.8)

*Significantly higher than the referent group (p<0.05)
†Significantly lower than the referent group (p<0.05)

Multiple logistic regression analysis showed that, after controlling for possible confounding factors, men who had lived abroad were twice as likely to perceive they were at risk of contracting HIV/AIDS: AOR 2.1 (95% CI 1.2-3.8). Men who reported extramarital sex had experienced STD symptoms or those who knew that condoms prevent transmission were 2-3 times more likely to report that they were at risk, while those who knew that HIV/AIDS can be transmitted through sexual intercourse were 6 times more likely to perceive they were at risk. Women who had lived apart from their husbands were not significantly more likely to perceive they were at risk. However, those who reported extramarital sex knew that HIV/AIDS can be transmitted through sexual intercourse or those who had 6 years or more schooling were 2-3 times more likely to perceive they were at risk (Table 18).

Independent variable	Estimates of relative risk for people perceiving themselves to be at risk of contracting HIV/AIDS	
	Adjusted odds ratio (95% confidence interval)	
	Married women reporting	Married men reporting
Age <35 years	1.5 (0.5-4.9)	0.8 (0.4-1.6)
Years of schooling <6	3.3 (1.3-8.0)*	1.6 (0.9-2.8)
Married <10 years	2.1 (0.8-5.3)	1.6 (0.8-3.0)
Monthly household expenditure <4,000 taka	0.8 (0.3-1.8)	0.7 (0.4-1.1)
Area B (Khulna division)	0.6 (0.2-1.3)	0.5 (0.3-1.0)
Knows-HIV is transmitted by sex	2.9 (1.1-7.9)*	6.3 (2.5-15.5)*
Condom used in marital sex	1.4 (0.6-3.0)	0.6 (0.3-1.0)
Knows-condom prevents HIV infection	0.9 (0.6-1.1)	2.8 (1.5-5.1)*
Reported extramarital sex	2.9 (1.1-7.7)*	2.7 (1.5-4.6)*
Experienced STD symptoms	1.0 (0.5-2.0)	2.9 (1.7-5.0)*
Experienced separation from spouse	1.6 (0.6-4.0)	2.1 (1.2-3.8)*

*Significantly-raised risk based on 95% confidence interval

Knowledge about sexually transmitted diseases

Interviews revealed a low level of knowledge about STDs. Less than 5% of women mentioned syphilis and gonorrhoea by name when asked about STDs (Appendix VI). Among women, vaginal discharge (49-65%) and genital ulcers (35-40%) were commonly mentioned STDs. Men who had lived away in Bangladesh were significantly more likely ($p<0.05$) than the referent group to mention syphilis (58.1% vs 37.3%) and gonorrhoea (53.8% vs 36.6%).

When asked about prevention of STDs, <5% of women and 9% of men mentioned condom as a means of prevention. About half of men mentioned avoiding sex with a sex worker to avoid infection. The majority (65-79%) of women mentioned medicines, although they were referring to treatment rather than prevention. There were also some misconceptions about prevention, such as reporting that washing genitals or using antiseptic (dettol) can prevent sexually transmitted infections.

Experience of STD symptoms

More women (38-48%) than men (14-30%) had experienced STD symptoms (discharge, genital ulcers). The main difference between migration-status groups was that men who had lived away were about twice as likely to have experienced symptoms than those who had not lived away from their wives ($p<0.05$). There were no major differences in the proportion experiencing symptoms among married men and women with different sociodemographic characteristics (Table 19). The most striking differential was the much higher proportion experiencing STD symptoms among women and men who reported extramarital sex compared to those who did not have extramarital sex.

Groups of women and men reporting STD symptoms	Percentage of married women			Percentage of married men		
	Husbands had not lived away (n=396)	Husbands away in Bangladesh (n=368)	Husbands currently abroad (n=411)	Men who had not lived away (n=407)	Men returned from Bangladesh (n=117)	Men returned from abroad (n=179)
All	44.9	37.8†	46.2	14.3	28.2*	29.6*
Age (years)						
<35	42.7	37.8†	44.3	12.3	34.8*	27.6*
35+	48.9	37.7†	50.8	15.2	23.9*	30.0*
Years of schooling						
<6	47.3	47.3	47.7	15.0	37.0*	35.5*
6+	40.2	40.1	45.2*	13.1	20.6*	23.3*
Household expenditure (taka)						
<4,000	48.5	38.0†	50.6	13.6	32.8*	30.7*
4,000+	41.6	37.6	45.2*	15.6	23.7*	28.8*
Area						
Mirsarai	43.1	36.5	46.2	18.9	28.3	30.5*
Abhoynagar	46.8	40.7	47.6	9.7	28.0	20.0*
Condom used in marital sex						
Yes	53.5	41.8†	56.6	14.8	16.7	21.8*
No	42.1	36.0†	44.7	14.0	33.3*	33.1*
Had extramarital sex						
Yes	91.7	46.2†	53.6†	36.4	43.6*	46.2*
No	43.5	36.8†	45.7	9.1	14.5*	12.5

*Significantly higher than the referent group ($p<0.05$)
†Significantly lower than the referent group ($p<0.05$)

Multiple logistic regression analysis, after controlling for sociodemographic factors (Table 20), indicated that married women who reported extramarital sex were twice as likely to report STD symptoms: AOR 1.9 (95% CI 1.2-3.0), and married men were 6 times more likely AOR 5.7 (95% CI 3.7-8.7) report STD symptoms. Living apart from spouse did not raise the risk of experiencing STD symptoms in women or men.

Independent variable	Relative risks for STD symptoms: adjusted odds ratio (95% confidence interval)	
	Married women	Married men
Age <35 years	0.8 (0.6-1.1)	1.1 (0.6-1.9)
Years of schooling <6	1.1 (0.9-1.5)	1.7 (1.1-2.7)*
Married <10 years	0.9 (0.7-1.1)	1.1 (0.6-11.8)
Monthly household expenditure <4,000 taka	1.2 (0.9-1.5)	0.8 (0.5-1.3)
Area B (Khulna Division)	1.2 (0.9-1.5)	1.6 (1.0-2.9)
Has lived/living apart from spouse	0.9 (0.7-1.2)	1.3 (0.8-2.0)
Reported extramarital sex	1.9 (1.2-3.0)*	5.7 (3.7-8.7)*

*Significantly-raised risk based on 95% confidence interval

Of those who reported STD symptoms, 53-97% of married men and 68-81% of women in different migration-status groups had sought treatment (Table 21). Nearly all men (32 of 33) who had lived away in Bangladesh had sought treatment. Most men and women sought treatment from private providers, the majority of whom was unqualified and unlicensed practitioners (homeopaths, pharmacists, village doctors, and quacks).

Treatment sought and received	Percentage of married women*			Percentage of married men		
	Husbands has not lived away (n=178)	Husbands away in Bangladesh (n=139)	Husbands currently abroad (n=190)	Men who had not lived away (n=58)	Men who had returned from Bangladesh (n=33)	Men who had returned from abroad (n=53)
Sought treatment	74.2	67.6	80.5	70.7	97.0	52.8
GoB facility	15.2	15.9	11.8	7.3	0.0	39.3
Private doctor	20.5	30.9	45.6	14.6	37.5	35.7
NGO	2.3	3.2	1.9	4.9	6.3	0.0
Pharmacy	27.3	28.7	24.8	34.1	28.1	10.7
Homeopath	18.2	5.3	7.2	7.3	3.1	3.6
Village doctor/Quack	30.3	21.3	13.1	29.3	25.0	14.3

*Multiple responses were accepted
GoB=Government of Bangladesh NGO=Non-governmental organization

DISCUSSION

Unprotected extramarital sex was by far the most important potential risk for contracting HIV observed in this study of married people, particularly among those who had lived apart from their spouses due to work migration of husbands. Other risk behaviours that might expose them to infections were much less common, and there was little difference in the use of blood transfusion and medical injections between those who had lived away from their spouses and those who had not, and only one man had injected drugs illicitly.

There have been a few studies on sexual risk behaviours among married people of the general population in Bangladesh based on a random sample. In the only previous published survey among married women in Matlab, none reported extramarital sex (20). A higher proportion reporting in the present study could reflect regional differences in behaviour, recent social change, or better rapport with the interviewers. Reporting by men was reasonably comparable with that observed in the earlier study: 9% of 716 sexually-active men (married and single) interviewed in Matlab reported non-marital sex in the past 12 months compared to 4-10% of married men in different migration-status groups in the present study; 15% of men who had not lived apart from their wives had sex with a female sex worker since marriage, the same proportion as among sexually-active married men in Matlab. A recently-completed national survey among men found that 19% reported lifetime extramarital sex (any partner) (25). The proportion of men in different migration-status groups reporting sex with another male since marriage (2-8%) was also consistent with the proportion found among sexually-active men in Matlab (8%).

The present study found relatively high prevalence (58-67%) of lifetime extramarital sex among men from both the study areas who had lived away from their wives. A recent survey among men migrating within Bangladesh also found that just over half reported lifetime extramarital sex (26). Women were also more likely to report extramarital sex if their husbands were living away from home. The relative risk for extramarital sex among women and men, not surprisingly, increased with a longer period of separation. This dose-response relationship strengthens the evidence for an association between living apart and extramarital sex among married women and men in these populations. The significantly higher proportion of men who reported extramarital sex while living away compared to before living away from their wives also indicates an association with temporary separation. Men were significantly more likely to have sex with a sex worker or another male while living away from home than before living away, mostly without using condom.

The highly significant and large differences in reported sexual behaviours between the migration-status groups are unlikely to be due to the differences in the level of under-reporting, or the classification into migration-status groups. Nevertheless, some limitations of the study should be considered, such as the definition of living away. In the routine quarterly surveillance interview, if a husband is reported to be living away from home, he is not classified as an out-migrant until he has been away for at least 60 days. In rural Bangladesh, short-term (<60 days) absence from home is probably quite common, and absence may involve visits to towns and even other countries (e.g. India), where opportunities for extramarital sex are more readily available than in the home area. This study did not take into account such short-term absence, or any higher prevalence of extramarital sex there might be among men who make such visits.

A further limitation of the study is the possibility of under-reporting of extramarital sex by women in particular, which was recognized in study in Matlab (20) and in an earlier anthropological study in Chittagong division (21). Women and men currently living with their spouses might be even less inclined to admit having had extramarital sex than those whose spouses are currently living somewhere else. However, the similar reporting of recent (last month) extramarital sex by women in the 3 migration-status groups does not indicate this (0.5-0.8%). A significantly higher proportion of women from low-expenditure households who reported extramarital sex when their husbands were away could be linked to economic necessity and selling sex; no data were collected in this study to assess this.

Although the two surveillance areas are not intended to represent rural Bangladesh, the similarity in reported sexual risk behaviours in widely-separated areas in east and west Bangladesh

suggests that these behaviours may not be localized. About half of men in both the study areas who had lived apart from their wives in Bangladesh or abroad had sex with a sex worker while they were away. HIV may not be highly prevalent in the Middle-East where a large number of Bangladeshi men go to work, but little is known about the prevalence of HIV among sex workers, or about their countries of origin. As most reported sex with sex workers was unprotected, many migrant men appear to be potentially at risk of contracting sexually transmitted infections and transmitting them to their wives.

More research is needed on the country of origin and HIV status of sex workers in the countries where a large number of Bangladeshi men migrate for work. The passively-reported HIV cases among returning migrant men suggest that men who have not been tested may also have been exposed to HIV infection abroad. The evidence from a nearby country (Nepal) of a higher prevalence of sex with a sex worker and a higher prevalence of HIV among men who had returned from working in India indicates the potential for infection to spread into a country through such risk behaviours. Although a relatively few Bangladeshi migrants go to India officially, many more go there unofficially for work (16,17).

Although HIV can be introduced from other countries, the future of the epidemic in Bangladesh is likely to be determined by sexual networks within the country (21). An important finding of this study is that some men who had sex with a sex worker abroad reported having sex with a sex worker since returning to Bangladesh, which indicates potential for introducing HIV into a population of sex workers that reports low condom-use with clients (3-12% in national surveillance) (27). Although injecting drug users currently have the highest prevalence of HIV (5% in one city) in Bangladesh (1), the long-term impact of the epidemic is likely to be determined by men who have sex with sex workers and other men and inter-related sexual networks in the country. The potential risk for wives to be infected is indicated by the low use of condom during extramarital and marital sex.

Vulnerability, through exposure to HIV or other infectious diseases, is a complex concept, and prevention programmes need to take into account the broad social context (28). Despite religious and conservative attitudes to sex outside marriage in Bangladesh (21), the present study indicates that neither the high prevalence of marriage nor the social institution itself has prevented sexual risk behaviours from being quite common. Other studies have shown that over half of young married men have had extramarital sex (29). Further qualitative research is needed on the reasons for it being quite common among men who have, and have not, lived apart from their wives. Research is also needed on the perception of risk for infection, and the reason for this being so low among both women and men, despite a perception that extramarital sex is quite common. This low perception of risk indicates the need for more effective communication to the general population about the risk of contracting sexually transmitted infections and HIV/AIDS. However, the much higher levels of reported extramarital sex by men living away from their wives, mostly without using condom suggest that there is an urgent need to raise awareness among migrant men of the potential risk for infection.

Television and radio appear to be the main sources of information about HIV/AIDS, despite low ownership (<30%) in rural areas of Bangladesh (30). However, the use of mass media to promote condom use for the prevention of infection may be problematic in a country where marriage and religion are almost universally practised, and the predominant public values are conservative regarding non-marital sex (22). Better integration of mass-media messages and BCC through primary-care services is required, given the low-reported involvement of health workers in conveying information on HIV/AIDS. The study areas have been served mainly by the government health providers and private practitioners, most of whom are unqualified. The NGOs that have predominated in BCC activities elsewhere in Bangladesh need to be involved in addressing the behaviours, lack of knowledge, and low perception of risks identified in this study.

More explicit BCC messages are required, targeting married men and women who will be temporarily separated due to work migration and also single migrants. Counselling could be introduced as part of the official migration process, with promotion of VCT for those returning from abroad. To reach informal migrants, mobile workers, and spouses, without stigmatizing them, NGOs and community-based organizations need to be involved.

CONCLUSIONS AND RECOMMENDATIONS

Many married men and women in Bangladesh are at risk of contracting sexually transmitted infections and potentially HIV because men in particular engage in unprotected extramarital sex, and condom-use is low during marital and non-marital sex. Both men and women were much more likely to report extramarital sex if they had lived apart from their spouses, and the risk increased with length of separation.

Men who had lived apart from their wives were 5-6 times more likely to report lifetime extramarital sex than those who had not lived apart, and women were 4 times as likely to report this if their husbands were living away, after controlling for sociodemographic factors. About half (50.7%) of married men reported sex with a female sex worker (95% CI 45.0-56.4) while living away, and 5.4% had sex with a male (95% CI 2.8-8.0). In both the cases, this was double the proportion reporting that they had extramarital sex with such partners before living away. The use of condom was very low (<30%) during sex with sex workers and almost non-existent during sex with a male. The low (<31%) use of condom during marital sex indicates potential for transmission of infections to married women among the general population.

Given that about 4% of men who had sex with a sex worker while abroad had sex with a sex worker after returning to Bangladesh (within the last 12 months), there is potential for HIV to be introduced into a population that has a large number of partners with whom condom-use is low. Evidence from the national surveillance of inter-linked sexual networks within Bangladesh suggests that sex workers and their clients and men who have sex with men could predominate among new cases after the initial phase of an epidemic among injecting drug users.

The sexual risk behaviour of married men living away from home puts themselves and their wives at a greater risk for sexually transmitted infection, including HIV. More research is needed on the country of origin and HIV status of sex workers in the Middle-East countries where a large number of Bangladeshi men migrate for work. Qualitative research is also needed on the reasons for extramarital sex being quite common, the role of separation from spouse, and perceptions of risk.

Based on the findings of this study about the relatively high prevalence of extramarital sex, particularly by migrant men, it is urgent that the serious risk of contracting sexually transmitted infections, and potentially HIV, is communicated more effectively to the general public. Overall, BCC through mass media should be enhanced to raise awareness about HIV/AIDS and the risk of exposure during unprotected sex outside marriage.

More targeted BCC is required for migrant workers, in which NGOs can play a major role by reaching migrant workers and their spouses to provide information without stigmatizing them. Pre-departure counselling about the risks of unprotected sex could be part of the official migration process, with promotion of VCT for returning migrants. BCC in this context, and in the community, should emphasize condom-use and the risk of transmitting HIV infection to their wives and future children if men are engaged in unprotected extramarital sex.

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**Socioeconomic and demographic characteristics of married men,
by migration status**

Characteristics	Percentage of married men		
	Men who had not lived away from wife (n=407)	Men who had returned from Bangladesh (n=117)	Men who had returned from abroad (n=179)
Age-group (years)			
15-24	3.7	1.7†	0.0†
25-34	28.3	37.6*	16.2†
35-44	33.2	29.9	44.1*
45+	34.9	30.8	39.7
Mean±SD	40.9±9.6	39.6±10.7	42.5±7.6
Years of schooling			
0	31.7	16.2†	16.8†
1-5	30.7	29.9	35.2
6+	37.6	53.8*	48.0*
Respondent's occupation			
Day/farm labour	58.1	44.4†	54.8
Skilled labour/driving	7.1	8.6	2.8†
Small business	24.8	19.7†	27.9
Salaried occupation	8.3	11.2	2.8†
Other	1.7	16.1	11.7
Wife's occupation			
Housewife	95.1	97.4*	97.8*
Earning	4.9	2.6†	2.2†
Household expenditure (taka)			
<4,000	66.8	49.6†	41.9†
4,000+	33.2	50.4*	58.1*
Length of marriage (years)			
0-9	34.4	47.9*	29.1
10-19	33.2	23.1†	43.0*
20+	32.4	29.1	27.9
Mean±SD	14.4±9.0	13.2±10.0	15.1±7.8
*Significantly higher than the referent group (p<0.05)			
†Significantly lower than the referent group (p<0.05)			

**Socioeconomic and demographic characteristics of married women,
by husband's migration status**

Characteristics	Percentage of married women		
	Husbands had not lived away (n=396)	Husbands away in Bangladesh (n=368)	Husbands currently abroad (n=411)
Age-group (years)			
15-24	28.8	36.1	29.2
25-34	35.6	32.9	41.8*
35-44	27.8	22.6†	26.0
45+	7.8	8.4	3.2†
Mean±SD	31.0±8.6	30.1±8.9	29.7±7.3
Years of schooling			
0	37.1	29.3†	22.9†
1-5	29.5	21.7†	19.0†
6+	33.3	48.9*	58.2*
Occupation of respondent			
Housewife	89.1	79.3†	92.2*
Earning	10.9	20.7*	7.8†
Occupation of husband			
Day/farm labour	51.2	32.0†	46.7†
Skilled labour/driving	11.7	8.1†	13.1†
Small business	26.2	12.8†	7.6†
Salaried occupation	7.9	29.7*	29.4*
Other	3.0	17.4*	3.2
Household expenditure (taka)**			
<4,000	49.0	44.3†	18.7†
4,000+	51.0	55.7*	81.3*
Length of marriage (years)			
0-9	36.6	52.2*	42.6*
10-19	35.9	23.6†	39.4*
20+	27.5	24.2	†18.0
Mean±SD	13.7±8.7	11.7±9.3†	11.9±7.4†
*Significantly higher than the referent group (p<0.05)			
†Significantly lower than the referent group (p<0.05)			
**Average monthly household expenditure			

**Number of children and contraceptive-use reported by men and women,
by migration status**

Characteristics	Husbands had not lived away (n=396)	Percentage of married women		Percentage of married men		
		Husbands away in Bangladesh (n=368)	Husbands currently abroad (n=411)	Men who had not lived away (n=407)	Men who had returned from Bangladesh (n=117)	Men who had returned from abroad (n=179)
More than one marriage	5.3	10.6*	2.7†	8.8	8.5	5.0†
Living children						
0	4.5	13.6*	10.9*	3.9	6.0	1.7
1-2	3.8	59.8*	50.4*	49.9	52.1	49.1
3+	41.7	26.7†	38.7	46.2	51.9*	49.2
Pregnant	5.3	9.2*	5.8	5.4	6.8	8.9*
Current user of contraception	68.0	37.8†	5.6†	75.7	68.4†	68.7†
Pill	29.0	17.4†	3.4†	38.7	42.7	48.0*
Condom	4.5	6.5	0.2†	9.5	13.7*	7.8
Injectables	22.7	59.8*	0.7†	26.0	18.0†	12.8†
Source of contraceptives **	(n=99)	(n=143)	(n=214)	(n=308)	(n=80)	(n=123)
Health facility	27.3	20.3†	21.5†	27.3	15.0†	17.9†
Fieldworker	39.4	26.6†	24.3†	33.4	38.8*	36.6
Shop/pharmacy	39.4	58.7*	67.8*	45.8	56.5*	38.9†
†Significantly lower than the referent group (p<0.05)						
*Significantly higher than the referent group (p<0.05)						
**Multiple responses were accepted						

**Extramarital sex reported by men in two study areas combined
by migration status and sociodemographic sub-groups**

Sociodemographic group	Percentage of men reporting extramarital sex with any partner (95% CI)		
	Men who have not lived away (referent) (n=407)	Men who have returned from Bangladesh (n=117)	Men who have returned from abroad (n=179)
Age (years)			
15-34	23.1 (15.9-30.3)	54.3 (39.9-68.7)**	79.3 (64.6-94.0)**
35-44	20.7 (13.9-27.5)	68.6 (53.2-84.0)**	60.8 (50.0-71.6)**
45+	32.4 (24.7-40.1)	58.3 (42.2-74.4)**	69.0 (58.2-79.8)**
Schooling (years)			
0	29.5 (21.6-37.4)	68.4 (47.5-89.3)**	70.0 (53.6-86.4)**
1-5	21.6 (14.4-28.8)	60.0 (43.8-76.2)**	68.3 (56.8-79.8)**
6+	25.5 (18.6-32.4)	57.1 (44.9-69.3)**	65.1 (55.0-75.2)**
Length (years) of marriage			
<5	18.4 (9.7-27.1)	50.0 (31.5-68.5)**	66.7 (35.9-97.5)**
5-9	28.1 (17.1-39.1)	57.1 (38.8-75.4)*	72.1 (58.7-85.5)**
10+	27.0 (21.7-32.3)	65.6 (53.7-77.5)**	65.4 (57.1-73.7)**
Occupation			
Labour	23.3 (17.9-28.7)	65.4 (52.5-78.3)**	66.7 (53.8-79.6)**
Small business/trading	22.8 (14.6-31.0)	52.2 (31.8-72.6)**	67.6 (52.5-82.7)**
Skilled/salaried work	39.6 (25.8-53.4)	54.3 (37.8-70.8)*	61.5 (35.0-88.0)*
Household expenditure (Taka per month)			
<3,000	(17.6-30.8)	66.7 (48.9-84.5)**	77.8 (62.1-93.5)**
3,000-4,999	(21.0-34.4)	62.3 (49.3-75.3)**	71.8 (62.2-81.4)**
5,000+	23.3 (13.6-33.0)	51.4 (35.3-67.5)**	56.7 (44.8-68.6)**
*Significantly higher than the referent group (p<0.05)			
**Significantly higher than the referent group, based on non-overlapping 95% confidence interval			
CI=Confidence interval			

**Knowledge about HIV/AIDS among married men and women,
by migration status**

Knowledge about HIV/AIDS	Percentage of married women			Percentage of married men		
	Husbands had not lived away (n=396)	Husbands away in Bangladesh (n=368)	Husbands currently abroad (n=411)	Men who had not lived away (n=407)	Men who had returned from Bangladesh (n=117)	Men who had returned from abroad (n=179)
Heard about HIV/AIDS	60.1	69.8	75.2	85.5	95.7	94.4
Sources of information	(n=238)	(n=225)	(n=307)	(n=347)	(n=112)	(n=168)
TV	76.1	80.0*	78.8	90.8	88.4	89.9
Radio	17.6	21.6*	20.2	34.9	40.2*	35.7
Newspaper	4.6	5.1	6.8*	20.5	33.9*	24.4
Leaflet/poster	2.9	4.7	6.5*	8.6	7.1	6.0
Relatives	0	9.8*	0	1.2	1.8	1.2
Modes of transmission						
Sexual intercourse	63.1	55.2†	53.0†	71.7	77.8*	75.4
Blood transfusion	19.4	28.0*	28.2*	15.2	19.7*	12.8
Used needles/syringe	21.7	26.4*	30.7*	16.2	14.5	12.3
Injecting drugs	3.0	2.2	1.7†	0.7	1.7	1.7
Use of things used by an HIV-infected person	3.3	3.0	4.6	4.4	4.3	5.0
Did not know any mode of transmission	19.2	15.5†	20.4	12.3	13.7	15.6
Knows 3+ modes of transmission	17.4	22.8*	21.9*	16.0	18.8	12.8
Modes of prevention						
Use of condom	21.5	28.5*	31.1*	15.0	22.2*	22.9*
Sex with spouse only	31.1	39.4*	42.1*	10.8	14.5*	12.3
No sex with a sex worker	22.5	27.2*	26.5*	66.3	73.5*	66.7
Avoidance of unsafe blood transfusion	19.9	29.3*	28.5*	14.7	15.4	13.4
Used needle	21.0	29.6*	25.8*	15.5	13.7	11.7
Using things used by an HIV-infected person	2.8	3.0	3.6	2.9	3.4	2.8
Did not know any prevention	9.6	8.7	10.2	11.1	9.4	12.3
Knows 2+ ways to prevent	22.2	35.1*	34.5*	18.9	21.4	19.6

*Significantly higher than the referent group (p<0.05)
†Significantly lower than the referent group (p<0.05)

**Knowledge about sexually transmitted diseases of married men and women,
by migration status**

Knowledge about STDs	Percentage of married women			Percentage of married men		
	Husbands had not lived away (n=396)	Husbands away in Bangladesh (n=368)	Husbands currently abroad (n=411)	Men who had not lived away (n=407)	Men who had returned from Bangladesh (n=117)	Men who had returned from abroad (n=179)
STDs known						
Syphilis	1.5	1.4	0.2†	37.3	58.1*	41.3
Gonorrhoea	1.8	3.3*	0.2†	36.6	53.8*	39.7
Vaginal discharge	64.6	52.7†	47.9†	22.1	16.4	27.4*
Genital ulcer	35.9	37.2	30.7†	27.2	26.5	34.7*
Prevention methods stated						
Use of condom	3.3	4.6	4.9	6.1	7.7	8.2
No sex with a sex worker	0.5	1.6*	0.7	55.3	49.6†	55.9
Washing genitals/dettol	1.5	1.6	2.2	5.7	6.0	9.5*
Taking medicines	78.8	71.2†	65.0†	27.3	36.8*	34.6*
*Significantly higher than the referent group (p<0.05)						
†Significantly lower than the referent group (p<0.05)						

