



## Research Article

# Sexual Risk Behaviours among Returnee Migrants from India: Are They at Risk of HIV?

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### Abstract

**Introduction:** Nepal is one of the major source countries of migrant laborers in Asia and abroad. Migrants may serve as a bridge population for transmitting HIV/STDs from high-risk groups to the general population. **Objective:** The objectives of this paper are to assess the sexual risk behaviours and factors affecting sexual risk behaviours related to HIV among the returnee migrants from India. **Methods:** The data for this study was drawn from cross sectional study entitled 'Integrated Biological and Behavioural Surveillance (IBBS) Surveys among Male Labor Migrants (MLM) in Western and Mid to Far Western Region of Nepal. A total of 720 MLMs were selected for the interview and testing of blood samples. A composite index was prepared to measure high risk sexual behaviours. Bivariate and Multivariate analysis were performed. **Results:** Almost a third of the sampled returnee migrants (32%) were involved in sexual risk behaviours. Multivariate analysis showed that age, level of education, caste, marital status, place of residence (region), alcohol consumption and participation in HIV and AIDS awareness program in community were significant predictors for sexual risk behaviours. Illiterate migrant were more than two times (adjusted odds ratio aOR=2.35) more likely to involve in risky sexual behaviours than who had grade 10 or more education. Similarly, migrants who consumed alcohol every day, at least once a week and less than once a week were 5 times, 2.9 times and 2.7 times more likely to involve in high sexual risk behaviours than those who never consumed alcohol. Migrants who ever involved in HIV/AIDS awareness program in community were less likely to involve in high sexual risk behaviours (aOR=0.68) than those who never participated in HIV/AIDS awareness program in community. **Conclusions:** The findings showed that returnee migrants are exposed to health hazards through their sexual behaviour. Therefore, HIV prevention programs should spotlight the importance of sex partner reduction and consistent condom use with casual or commercial sex partners for migrant workers focusing on areas from which migrants leave, as well as the workplaces where migrants travel.

**Keywords:** Risk Factors; Key and Vulnerable populations; Prevention; Public Health; Male Labor Migrant; Nepal

### Introduction

Nepal is one of the major source countries of migrant laborers, helping to fulfill the demand of the rapidly industrializing countries in Asia and abroad. Top destination countries for migration are India, Malaysia, Qatar, Saudi Arabia, United Arab Emirates, Kuwait, South Korea and Bahrain [1]. However, the percentage of absent population going to India sharply decreased in 2011, from 77% in 2001 to 38% in 2011. On the other hand, the volume of absent population going to India has increased, from 589,050 in 2001 to 722,256 in 2011, which is an increment of 1.2%. One of the reasons for the dramatic percentage decrease is the growing number of youths going to other countries. Among the total absentees in India, 605,869 (83.9%) were males whereas 116,362 (16.1%) were females [2].

HIV has become a global problem and has spread all over the world. A total of 36.7 million of people in the world are living with HIV. Out of these, 34.5 million were adults. About 1.8 million people became newly infected with HIV in 2016. There were 5.1 million people living with HIV in Asia and the Pacific. There were an estimated 2,70,000 new HIV infections in the region. HIV/AIDS continues to affect many youth in South Asia--especially young women--despite

progress in prevention, testing, and treatment. About 1,70,000 people died of AIDS related illness in 2016 in Asia and the Pacific region [3]. Since the first case of HIV was detected in 1988, an epidemic of HIV in Nepal rose sharply in the mid-1990s and was in peak during mid-2000s. Nepal's HIV epidemic has transitioned from 'low-level epidemic' to 'concentrated epidemic' with rapid spread among key population, i.e. Female Sex Workers (FSWs), Men having sex with Men and Transgender (MSM/TG), People who Inject Drugs (PWID) (Male and Female), Male Labor Migrants (MLMs) and their spouses and Clients of Sex Workers (CSW) [4]. Improving HIV prevention coverage along with behavioural change remains the primary focus of programs for key populations especially Men having sex with men (MSM), Transgender (TG) People who inject Drugs (PWID) and Female sex workers (FSWs). However, improving coverage among migrants remains a huge challenge due to the large migrant population. The last three national strategies have continued to plan for the implementation of more targeted interventions. As a result, the declining trajectories of HIV prevalence and incidence among adult populations over the period of last 10 years stands out as cogent evidence of effective and sustained targeted interventions [5].

Migrants potentially facilitate HIV and sexually transmitted diseases (STDs) transmission between rural and urban populations through their annual return to their home villages [6,7]. Migrants may serve as a "bridge" population transmitting HIV/STDs from high-risk groups to the general population [8,9].

Studies found that migrants commonly had multiple sexual encounters, changed partners, and used condoms infrequently both in India and at home [10]. Several factors play a role to increase increasing the high-risk sexual behaviours, for example, peer norms and pressures, cheaper sex, lack of family control, drinking alcohol, which in turn cause vulnerability to HIV/STIs in India. However, in Nepal, migrants' new status, frequent local festivals, and low perceived vulnerability to HIV/STIs were the leading causes for HIV. Study showed that migrants have lower knowledge of HIV/STIs [10]. Multiple kinds of sexual behaviours seem to be possible in abroad, as long as other people do not notice them [11]. Migrant populations have a greater risk for poor health in general and HIV infection in particular. This is due to the impact of socio-cultural patterns of the migrant's situation on health, their economic transitions, reduced availability and accessibility of health services; and the difficulty of the host country's health care systems to cope with the traditions and practices of the immigrants [12]. The objectives of this paper are to assess the sexual risk behaviours and factors affecting sexual risk behaviours related to HIV among the returnee migrants from India.

## Methods

The data for this study was drawn from cross sectional study entitled 'Integrated Biological and Behavioural Surveillance (IBBS) Surveys among Male Labor Migrants in Western and Mid to Far Western Region of Nepal'. In this study, MLMs are defined as "a male returnee migrant aged 18-49 years, having stayed continuously or with interruption for at least 3 months in India as a migrant worker and having returned to Nepal within three years prior to the date of the survey". Altogether 11 districts of western, mid and far western region were covered in this study.

A two stage cluster sampling procedure was utilized to select number of MLMs from each of the clusters. In the first stage, probability proportionate to size (PPS) method was used to select the clusters. A Village Development Committee (VDC) consisting of at least 20 returnee labor migrants was

defined as a cluster. In the second stage, one in every 12 MLMs were selected from each of the selected clusters which were identified through systematic random sampling method. A total of 720 MLMs were selected for the interview and testing of blood samples. Ethical approval was obtained from the Nepal Health Research Council (NHRC). The MLMs included in the survey were fully informed about the nature of the study. They were informed that their participation was voluntary and that they were free to refuse to answer any question or to withdraw from the interview at any time. They were also informed that such withdrawal would not affect the services they would normally receive from the survey. This survey was carried out during December, 2016 to May 2017.

The measurable outcome of the study was sexual risk behaviour, a dichotomous variable. If any of the following criteria was met in the last 12 months, migrants were considered to be engaging in sexual risk behaviour: 1) Sex with female sex workers in Nepal 2) Sex with female sex workers in India 3) Not consistent condom use with casual sex partner in Nepal 4) Not consistent condom use with casual sex partner in India 5) Not consistent condom use with MSM in Nepal 6) Not consistent condom use with MSM in India. Association between explanatory variables and high sexual risk behaviours was assessed via bivariate analysis using chi-square tests and multivariate regression (binary logistic regression). Results are considered significant at  $p < 0.05$ . The Statistical Package for Social Science (SPSS 20.0 for Windows) software was used to analyze the data.

## Results

Almost two in five returnee migrants were youth aged below 25 (39%) while almost a fifth of migrants (19%) were 40 or above. More than three in five (63%) had education below grade 10. Almost two in five (38%) were from Brahmin/Chhetri caste followed by Terai Madhesi (33%) and Janajati (21%). More than two-third were ever married and almost four-fifth resided in the same district in which they were born. More than half (53%) lived with their friends while they were in India. It was found that almost three in four (72%) had intention to go to India for work again. Comprehensive knowledge on HIV transmission was low (22%) and nearly half (45%) had drunk alcohol either everyday or at least once in a week. Participation in HIV and AIDS awareness program in community was very low (9%) (Table1).

Background characteristics	N	%
<b>Age group</b>		
18-24	282	39.2
25-39	304	42.2
40 or above	134	18.6
<b>Education</b>		
Illiterate	35	4.9
Literate only/Grade 1-5	150	20.8
Grade 6-9	270	37.5
Grade 10 or above	265	36.8
<b>Caste</b>		
Brahmin/Chhetri	272	37.8
Dalit	56	7.8

Janajati	153	21.2
Terai Madeshi	239	33.2
<b>Marital Status</b>		
Unmarried	229	31.8
Ever married	491	68.2
<b>Place of residence</b>		
Same district of birth	574	79.7
Different district	146	20.3
<b>Living with in India</b>		
Alone	118	16.4
Wife	25	3.5
With friends	381	52.9
Relatives/family	196	27.2
<b>Region</b>		
Western	360	50.0
Mid Western	84	11.7
Far Western	276	38.3
<b>Intention to go to India for work</b>		
Yes	515	71.5
No	153	21.2
Not sure	52	7.2
<b>Comprehensive knowledge on HIV transmission</b>		
No	565	78.5
Yes	155	21.5
<b>Alcohol consumption</b>		
Everyday	94	13.1
At least once a week	226	31.4
Less than once a week	132	18.3
Never	268	37.2
<b>Ever participated in HIV/AIDS awareness program in community</b>		
No	653	90.7
Yes	67	9.3
<b>Total</b>	<b>720</b>	<b>100.0</b>

**Table1:** Background characteristics of returnee migrants.

An overwhelming majority of migrants (86%) had sexual intercourse. More than a fifth (22%) had sex with female sex workers. A tenth had sex with sex workers in Nepal (10%) while almost one in six (17%) had sex with sex

workers in India. Almost a fifth had (18%) sex with their girl friend in Nepal while 3 percent had sex with their girl friend in India. Few migrants had anal sex with male partners in Nepal (<0.5%) and India (<1%) (Table 2).

Sexual behaviours	Total (N=720)	
	N	%
Ever had sexual intercourse	616	85.6
Ever had sex with sex worker	156	21.7
Ever had sex with sex worker in Nepal	71	9.9
Had sex with sex worker in Nepal in the past 12 months	32	4.4
Ever had sex with sex worker in India	122	16.9
Had sex with sex worker in India in the past 12 months	52	7.2
Had sex with girl friend in Nepal	126	17.5
Had sex with girl friend in India	23	3.2
Anal sex with male partners in Nepal	2	0.3
Anal sex with male partners in India	5	0.7

**Table 2:** Sexual behaviour among returnee migrants.

Almost a third of the sampled returnee migrants (32%) were involved in sexual risk behaviours. Sexual risk behaviours were significantly high among illiterate (51%,  $p < 0.05$ ) than those who had 10 years or more education. A

significantly higher percentage of Dalit (48%) were involved in sexual risk behaviours followed by Janajati (31%) and Brahmin/Chhetri (28%). A higher percentage of respondents from Mid-western (41%,  $p < 0.01$ ) and Far western (38%) were

involved in sexual risk behaviours than respondents in Western region (26%). Alcohol consumption is associated with high sexual risk behaviours. A significantly ( $p < 0.001$ ) higher percentage of migrants who consumed alcohol every day were involved in high risk sexual behaviours than those

who never drank alcohol (19%). On the other hand, a significantly lower percentage of returnee migrants who ever participated in HIV/AIDS awareness program in community had high risk sexual behaviours (25%) than those who never participated in such programs (33%) (Table 3).

Characteristics	Sexual risk behaviour		Total	
	No	Yes	%	N
<b>Age group</b>	<b>(p=0.093)</b>			
18-24	70.9	29.1	100.0	282
25-39	63.5	36.5	100.0	304
40 or above	71.6	28.4	100.0	134
<b>Education *</b>	<b>(p=0.039)</b>			
Illiterate	48.6	51.4	100.0	35
Literate only/Grade 1-5	68.0	32.0	100.0	150
Grade 6-9	68.5	31.7	100.0	270
Grade 10 or above	69.8	30.2	100.0	265
<b>Caste *</b>	<b>(p=0.035)</b>			
Brahmin/Chhetri	71.7	28.3	100.0	272
Dalit	51.8	48.2	100.0	56
Janajati	68.6	31.4	100.0	153
Terai Madeshi	66.9	33.1	100.0	239
<b>Marital Status</b>	<b>(p=0.263)</b>			
Unmarried	65.1	34.9	100.0	229
Ever married	69.2	30.8	100.0	491
<b>Place of residence*</b>	<b>(p=0.044)</b>			
Same district of birth	69.7	30.3	100.0	574
Different distinct	61.0	39.0	100.0	146
<b>Living with in India</b>	<b>(p=0.099)</b>			
Alone	68.6	31.4	100.0	118
Wife	80.0	20.0	100.0	25
With friends	64.3	35.7	100.0	381
Relatives/family	73.0	27.0	100.0	196
<b>Region **</b>	<b>(p=0.001)</b>			
Western	74.2	25.8	100.0	360
Mid Western	59.5	40.5	100.0	84
Far Western	62.3	37.7	100.0	276
<b>Intention to go to India for work</b>	<b>(p=0.285)</b>			
Yes	66.4	33.6	100.0	515
No	73.2	26.8	100.0	153
Not sure	67.3	32.7	100.0	52
<b>Comprehensive knowledge on HIV transmission</b>	<b>(p=0.958)</b>			
No	68.0	32.0	100.0	565
Yes	67.7	32.3	100.0	155
<b>Alcohol consumption***</b>	<b>(p=0.0001)</b>			
Everyday	54.3	45.7	100.0	94
At least once a week	62.4	37.6	100.0	226
Less than once a week	60.6	39.4	100.0	132
Never	81.0	19.0	100.0	268
<b>Ever participated in HIV/AIDS awareness program in community*</b>	<b>(p=0.048)</b>			
No	67.2	32.8	100.0	653
Yes	74.6	25.4	100.0	67
Total	67.9	32.1	100.0	720

Note: Significant at \*\*\*=  $p < 0.001$ ; \*\*= $p < 0.01$  and \*= $p < 0.05$

Table 3: Background characteristics of returnee migrants by sexual risk behaviour.

Logistic regression analysis showed that age group, level of education, caste, marital status, place of residence (region), alcohol consumption and participation in HIV and AIDS awareness program in community were significant predictors for sexual risk behaviours. Returnee migrants who were aged 25-39 years were almost two times more likely (aOR=1.78) to be involved in sexual risk behaviours than who were 40 or above years. Illiterate migrants were more than two times (aOR=2.35) more likely to be involved in risky sexual behaviours than who had grade 10 or more education. In regards to caste, Dalit migrants were more likely to be involved in risky sexual behaviours than Brahmin/Chhetri. Migrants from Mid western and Far western regions were

more likely to be involved in sexual risk behaviours (aOR=1.96 for Far western and aOR=2.14 for Mid-western region) than those from Western region. Similarly, migrants who consumed alcohol every day, at least once a week and less than once a week were 5 times, 2.9 times and 2.7 times more likely to be involved in high sexual risk behaviours than those who never consumed alcohol. It is encouraging to note that migrants who were ever involved in HIV/AIDS awareness program in community were less likely to be involved in high sexual risk behaviours (aOR=0.68) than those who never participated in HIV/AIDS awareness program in community (Table 4).

Predictors	aOR	95% CI (Lower-Upper)
<b>Age group</b>		
18-24	1.09	0.57-2.10
25-39	1.78*	1.07-2.93
40 or above (reference)	1.00	
<b>Education</b>		
Illiterate	2.35*	1.07-5.22
Literate only/grade 1-5	0.93	
Grade 6-9	1.08	0.68-1.43
Grade 10 or above (reference)	1.00	
<b>Caste</b>		
Brahmin/Chhetri (reference)	1.00	
Dalit	1.97*	1.03-3.76
Janajati	1.04	0.64-1.69
Terai Madeshi	1.17	0.76-1.79
<b>Marital Status</b>		
Unmarried (reference)	1.00	
Ever married	0.49**	0.29-0.80
<b>Place of residence</b>		
Same district of birth (reference)	1.00	
Different distinct	1.29	0.84-2.00
<b>Living with in India</b>		
Alone	1.15	0.66-1.98
Wife	0.55	0.18-1.67
With friends	1.24	0.81-1.88
Relatives/family (reference)	1.00	
<b>Region</b>		
Western (reference)	1.00	
Mid Western	2.14**	1.18-3.84
Far Western	1.96**	1.30-2.96
<b>Intention to go to India for work</b>		
Yes (reference)	1.00	
No	0.75	0.48-1.15
Not sure	0.85	0.44-1.64
<b>Comprehensive knowledge on HIV transmission</b>		
No (reference)	1.00	
Yes	1.01	0.66-1.52
<b>Alcohol consumption</b>		
Everyday	5.03***	2.76-9.13
At least once a week	2.94***	1.87-4.61
Less than once a week	2.67***	1.63-4.37
Never (reference)	1.00	
<b>Ever participated in HIV/AIDS awareness program in community</b>		
No (reference)	1.00	
Yes	0.68*	0.36-0.98
<b>Constant</b>	<b>0.14***</b>	
<b>-2 Log likelihood</b>	<b>814.6</b>	
<b>Cox &amp; Snell R Square</b>	<b>0.116</b>	

**Table 4:** Adjusted Odd Ratio (aOR) and 95% CI for sexual risk behaviour among Nepalese returnee migrants.

## Discussion

Nepal is one of the major source countries of migrant laborers in India. The objective of this paper is to assess the sexual risk behaviours related to HIV among the returnee migrants from India. This study found that sexual risk behaviours related to HIV among Nepalese returnee migrants are common.

Almost a third of the sampled returnee migrants were involved in sexual risk behaviours. Our study findings have important implications for the development of HIV prevention interventions among migrant workers. First, we found that middle aged migrants (25-39), who were illiterate, who were from Dalit caste (so called untouchable caste) were more likely to have involved in high risk sexual behaviours, suggesting the importance of focusing on HIV prevention interventions on migrants in these groups.

Second, we found that migrants who migrated from Mid-western and Far western districts were more likely to have engaged in higher risk sex. These districts have high prevalence of HIV and STIs than other districts [4]. Migrants traveling to India need to know how to avoid acquiring or transmitting HIV infection.

Third, odds of experiencing high risk sexual behaviours are higher among those who consumed alcohol. The findings are similar to other studies [13,14]. Such findings are more important since alcohol consumption has been shown to be a common practice among the migrant workers culture [15,16] as almost half migrants in this study reported they drink alcohol at least once a week. Study also found that migrant workers who were binge drinkers also had a higher rate of not using a condom during their last sexual encounter [17].

Fourth, although participation in HIV and AIDS awareness program in community was very low, migrants who ever involved in HIV/AIDS awareness program in community were less likely to involve in high sexual risk behaviours than those who never participated in HIV/AIDS awareness program in the community. HIV/AIDS awareness program was designed to increase HIV and STI knowledge by reducing sexual risk, and implemented among highly mobile migrant workers in Nepal that may increase the knowledge on the consequences of high risk sexual behaviours and motivate them to practice safer sex.

There were some limitations in the interpretation of the results of this study. First, because of the cross-sectional design of the study and all of the items analyzed came from information at the time of survey, the analysis can only provide evidence of statistical association between those items and cannot show cause-effect relationships. Second, our findings may be subject to recall bias. Third, because sex remains a sensitive topic in Nepal, our findings may be biased by underreporting of sexual risk behaviours. Despite of these limitations, our findings still have important public health implications for HIV intervention programs.

## Conclusion

Our study found that sexual risk behaviours among migrants are common. We investigated the possible socio-demographic risk factors determining the high risk sexual

behaviours among returnee migrants. The findings support the need for targeted HIV prevention campaigns which is imperative for migrant workers. HIV prevention programs should spotlight the importance of partner reduction and consistent condom use with casual or commercial sex partners for migrant workers focusing on areas from which migrants leave, as well as the workplaces where migrants travel.

## Declarations

### Competing interests

The authors declare that they have no competing interests.

### Ethics approval and consent to participate

The study protocol was approved by the Nepal Health Research Council. All respondents had provided verbal informed consent to be interviewed prior to data collection. Therefore, an independent ethical approval was not required.

### Availability of data and materials

This study utilized the data from Integrated Biological and Behavioural Surveillance Survey, 2016 and the data is available in the National Centre for AIDS and STD Control, Kathmandu, Nepal.

### Authors' contributions

RA and RKC conducted data analysis, interpretation, and drafted the manuscript. BBR worked on interpretation of the manuscript. All authors read and approved the final manuscript.

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