

## HIV Transmission among Married Men and Women in Districts with High Out-migration in India



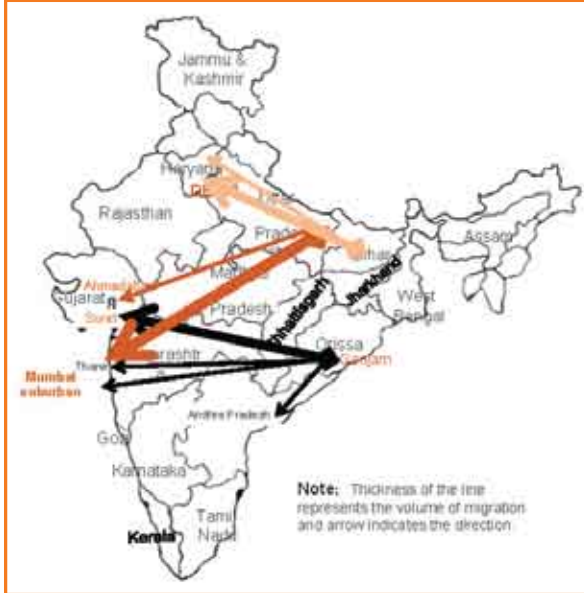
POPULATION COUNCIL/INDIA

In India, efforts of the National AIDS Control Programme have been successful in reducing overall HIV incidence in the country by 50 percent with focused interventions with female sex workers (FSWs), men who have sex with men (MSM) and injecting drug users (IDUs). Although HIV prevalence was estimated at 0.31 percent among the general population in 2009, it varies considerably across states and population sub-groups. HIV prevalence is still more than 1 percent in some sub-regions in the country. Additionally, the percentage of HIV-positive women among reported HIV cases in India increased from 25 percent in 2001 to 39 percent in 2009; and more than 90 percent of the new infections among females were occurring within non-commercial sex work related relationships, mostly within marriage.

Additionally, some districts in the states that showed a low HIV prevalence a decade ago have shown a slow and steady increase since 2007. Many of these districts also experience high male out-migration to other states. The spread of HIV in these districts is believed to be due to the transmission of the virus from male migrants to their wives. To-date, however, the contribution of migration to HIV transmission in districts with high out-migration has not been examined. Increasing HIV infection among married women and in states with high out-migration provided the impetus for this study. The goal of the study was to examine the linkages between male out-migration and HIV transmission in married men and women and to explore other mechanisms by which HIV is transmitted within marital relationships in districts with high out-migration.



**Figure 1** Approximate geographical locations of study sites within each state and the major routes of men's mobility



to states with high HIV prevalence (Mumbai and Thane in Maharashtra).

The participants from three study areas (Ganjam district: 414 males, 407 females; Northern Bihar districts: 396 males, 402 females; Eastern UP districts: 396 males, 400 females) were recruited by trained research assistants. All participants were asked if they would be willing to participate in a study on HIV and health and their written informed consent was obtained immediately before the survey interview. The interviewers selected participants randomly from among clients who visited the testing and treatment centres to collect their HIV test results, for CD4 counts, or to register for treatment. Interviews with study participants were conducted in private locations in ICTC and ART centres to ensure confidentiality. The study protocol was approved by the ethics committee of the National AIDS Control Organisation (NACO) as well as by the Institutional Review Board of the Population Council.

## Methods

In order to understand the linkages between migration and HIV, a case-control study design was used. Cases were currently married HIV-positive persons and controls were currently married HIV-negative persons. Both cases and controls were tested for HIV six months prior to the survey. HIV-positive persons were recruited from integrated counselling and testing centres (ICTCs) and from anti-retroviral therapy (ART) centres. HIV-negative persons were recruited from ICTCs.

Separate studies were conducted with married men and married women in three groups of districts with high out-migration. The districts included in the study were: (1) Ganjam district where HIV infection among women attending ANC clinics was more than 3 percent and men migrated predominantly to states/districts with high HIV prevalence (Surat in Gujarat and Mumbai and Thane in Maharashtra); (2) districts in northern Bihar where HIV infection among women was on the rise and men migrated primarily to states with low HIV prevalence (Delhi, Haryana and Punjab); and (3) districts in Eastern Uttar Pradesh (UP) where HIV infection among women was on the rise and men primarily migrated

## Profile of migrants<sup>1</sup>

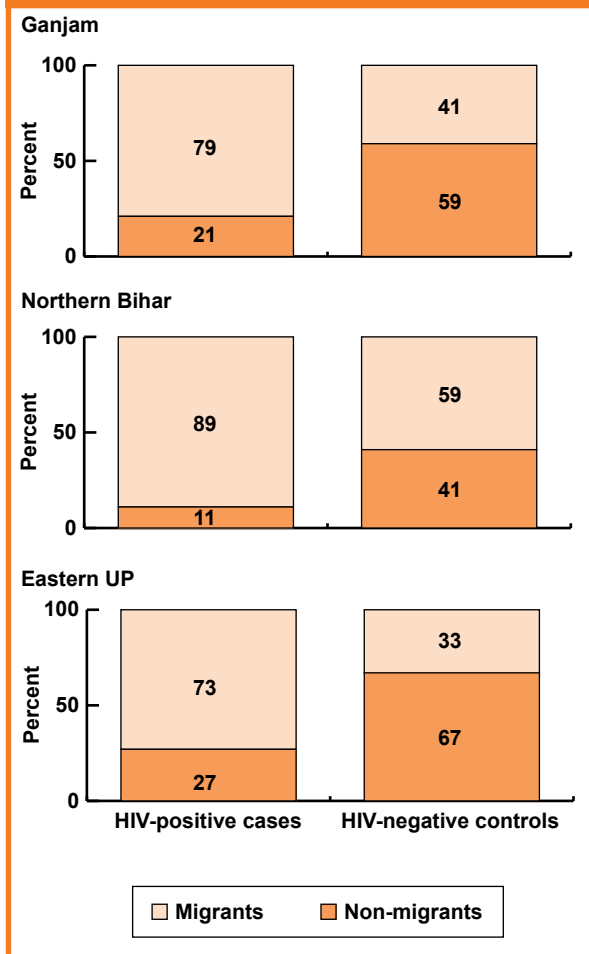
All three study areas had experienced an unprecedented out-migration of rural men for work to cities. The destinations to which men migrated were characterised by extensive sex work activity and high HIV prevalence among female sex worker populations. Data from all study areas revealed that there were more migrant men among HIV-positive than among HIV-negative populations (Figure 2). Thus, in northern Bihar migrants accounted for 89 percent of the HIV-positive group compared to 59 percent of the HIV-negative group. Similarly, in Ganjam district, migrants accounted for 79 percent of the HIV-positive compared to 41 percent of the HIV-negative group. These proportions were 73 percent and 32 percent, respectively, in Eastern UP.

Separate studies of married women conducted in the three study areas showed similar results. There was a

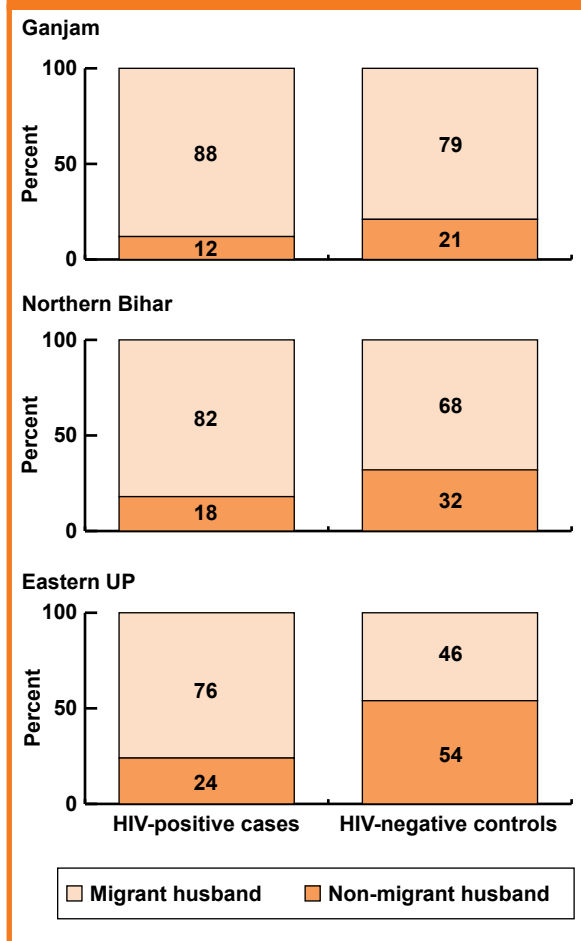
<sup>1</sup>Definitions of migrants used in the study: *Non-migrant*: A person who never went outside his or her place of origin for work. *Returned migrant*: A migrant who returned to his or her native place either due to completion of job contract or no job at the destination place. *Active migrant*: A migrant who was at the place of origin temporarily (e.g. to attend a marriage or some function, on vacation, or illness) but was currently employed in a district other than the place of origin.



**Figure 2** Percent distribution of migration status among HIV-positive cases and HIV-negative controls



**Figure 3** Percent distribution of women by their husband's migration status among HIV-positive cases and HIV-negative controls



correlation between spousal migration and women's HIV status (Figure 3). Significantly more HIV-positive than HIV-negative women had migrant husbands.

Female out-migration for work was, however, low. It ranged between 0.5 percent in Eastern UP to about 5 percent in northern Bihar and Ganjam in Orissa. Since the number of female migrants in the study sample was very low, no statistical association could be observed between female out-migration and HIV status.

### Impact of male out-migration on HIV prevalence

The study showed that in northern Bihar, odds of HIV infection were eight times higher among migrant men than non-migrant men, after controlling for age, education, source of referral and other possible confounding factors. In Eastern UP and Ganjam districts, migrant men were almost four times more likely to be infected with (or have contracted) HIV than non-migrants. More importantly, returned migrant men had a higher likelihood of being infected as compared to non-migrant men. In northern Bihar, the odds of HIV infection were 13 times higher among returned migrant men compared to non-migrant men. The survey of women from the three



study areas also showed that the odds of HIV infection were higher among women with migrant husbands than the women with non-migrant husbands. The comparison of data between the men's and women's survey reveals that the association between husbands' out-migration and women's HIV status is weaker than the case of male out-migration and their own HIV status. The study showed that there was a higher likelihood of HIV exposure among migrants visiting certain destinations. For example, migrants who went to the corridors of Mumbai, Thane and Surat districts from Eastern UP and Ganjam and migrants from northern Bihar who went to Kolkata and Mumbai/Thane districts had higher HIV rates than those migrants who went to other districts.

Migrant men who were currently employed in districts other than their places of origin (referred to as "active migrants" in the study) were also more likely to be HIV-positive than non-migrants.

### Extramarital sex by male out-migration status

The study suggests a considerable spread of HIV is linked to migration. However, local sexual networks also probably played an important role in spread of HIV for women as well as men. The study revealed that a higher proportion of migrant than non-migrant men reported having had extramarital sex in all three corridors of migration. Among migrants, higher proportions of returned migrant than active migrant men reported extramarital sex (Figure 4). The study on married women also showed that a considerable proportion of women across all three study areas reported having had extramarital sex (Figure 5).

This is the first time that current extramarital sex among women has been reported at these high levels in India and perhaps these levels are not

Figure 4 Percentage of men who had extramarital sex in 12 months prior to the survey by their migration status

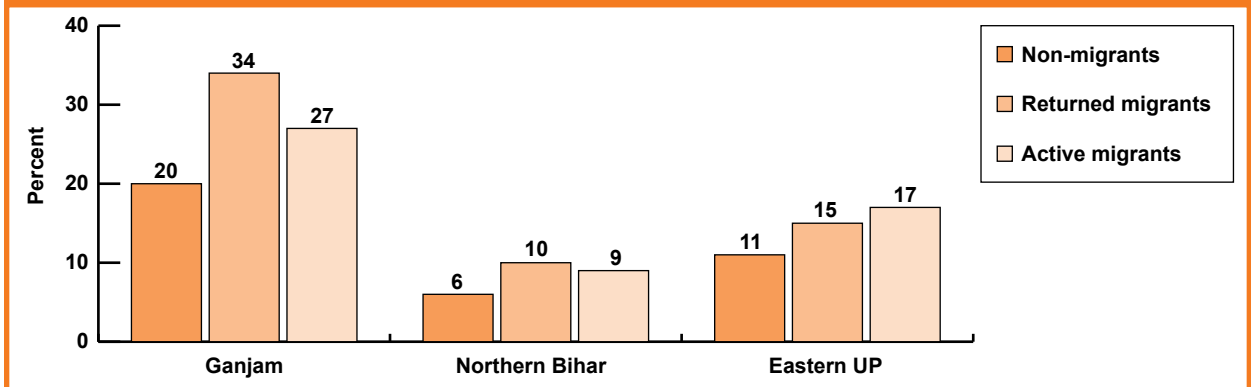
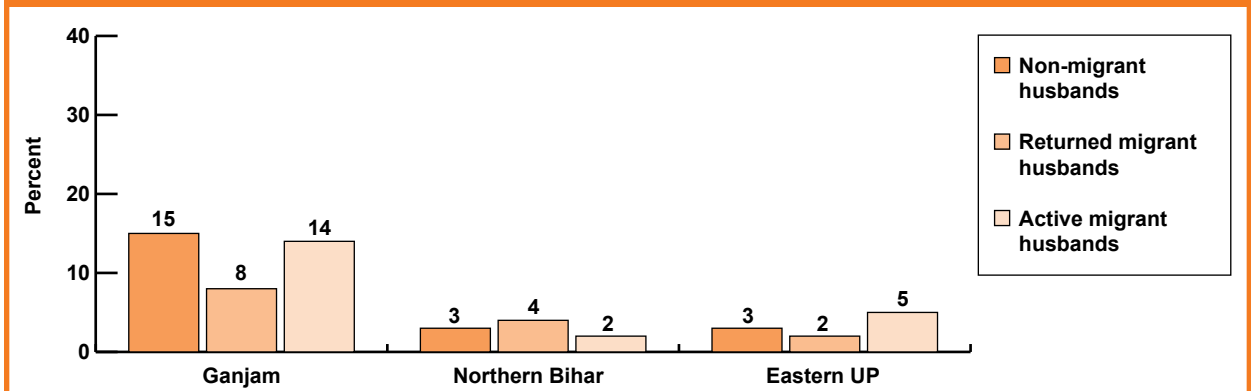


Figure 5 Percentage of women who had extramarital sex in 12 months prior to the survey by their husbands' migration status





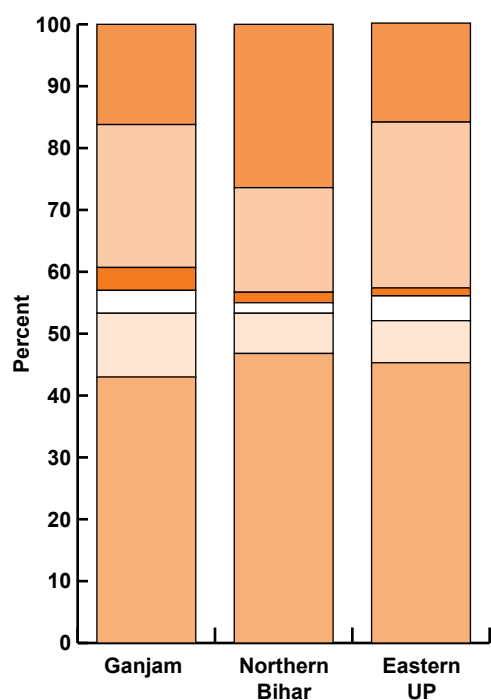
generalizable because women in the study were recruited from ICTCs. Surprisingly, even women with non-migrant husbands reported having had extramarital sex in Ganjam district. The proportion was similar for women with currently active migrant husbands. In all study areas, condom use during the last extramarital sex act was low among both men and women, underscoring the need for immediate programmatic attention to ensure safer sex practices in these districts with high out-migration.

### Sero-concordance and discordance

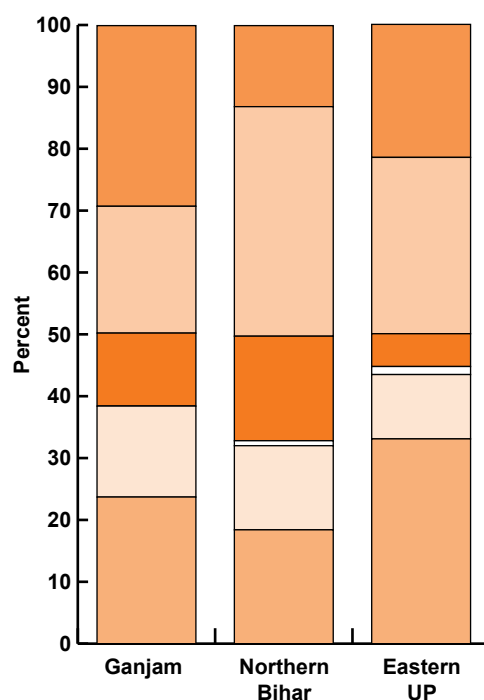
The results from women's survey indicate a high HIV sero-positive concordance across all the three

study areas suggesting that a majority of the women were being infected by their husbands. HIV male sero-discordance (when the husband HIV-positive and wife HIV-negative) was high in all study areas suggesting that there was a need to focus on sero-discordant couples to prevent further transmission of HIV (Figure 6). Data from the men's survey indicated that a significant proportion of men tested HIV-positive but their spouse's HIV status was not known (Figure 7) suggesting that there is an urgent need to promote partner notification for HIV-testing and promote disclosure of HIV status to sex partners. Without partner notification, if the wife's status remains unknown and she happens to be HIV-positive (because her husband was HIV-positive), she

**Figure 6 Couple's HIV sero status among women surveyed in each of the study districts**



**Figure 7 Couple's HIV sero status among men surveyed in each of the study districts**





could either fail to receive treatment or her treatment could be delayed. If the wife is HIV-negative and having unprotected sex with partner, then she is at risk of acquiring HIV particularly if the spouse is not receiving ART.

Further analyses of this data suggests that sero-concordance was highest among women with returned migrant husbands. Situations where the husband was HIV-positive and the wife was HIV-negative were more frequent among returned migrants in Bihar and Eastern UP than in Ganjam.

Condom use during the last marital sexual act was reported to be low in all study areas. Except in Eastern UP, condom use during marital sex was very low irrespective of HIV status in all study areas. Higher condom use in Eastern UP among HIV-positive persons could be attributed to the counselling that they had received at ART centres and to the strong linkages that they had developed with networks of HIV-positive persons. In all study areas, condom use at the last marital sexual encounter was shockingly low even for HIV-positive husbands with HIV-negative wives. It was 30 percent in Bihar,

35 percent in Ganjam, and 37 percent in Eastern UP, suggesting the high risk of HIV for women within marital relationships.

### Summary

This study was amongst the first to document the linkage between male out-migration and HIV in India. The findings show that all three study areas had experienced an unprecedented outmigration of rural men for work to cities. Data from men's survey reveal that there were more migrant men among HIV-positive than among HIV-negative populations. An independent survey of women in the three study areas also showed that significantly more HIV-positive than HIV-negative women had migrant husbands.

Our study additionally provides evidence on the mechanisms through which migration facilitates HIV transmission to women. For example, in Ganjam district, more women whose husbands were returned migrants were infected with HIV than those whose husbands were active migrants, suggesting



the elongated incubation period and increased transmission probability among women who had returned migrants. In Eastern UP and Northern Bihar, the proportion of HIV-positive women was more or less the same in the two groups. These results suggest the need for implementing HIV prevention interventions targeted to migrants not only in the destination areas but also to returned migrants and the wives of migrants in the source areas.

In summary, we observed a strong association between migration and HIV infection in districts with high out-migration. While migration per se is not in itself a risk factor for women and men, the conditions under which migrants travel and live at destination places and the conditions under which their left-behind wives live in their places of origin may increase the risk of acquiring HIV. The fact that their stable partners remained in their places of origin seems to affect the sexual behavior at the places of destination and leads to extra-marital sexual practices. Perhaps due to poor knowledge about modes of HIV transmission, many of them do not adopt safer sexual practices. These findings highlight the need for more integrated interventions so that it reaches to both men with migration history and their spouses in areas with high out-migration.

### Moving forward

As part of this study, interviews were conducted with various stakeholders and the study participants on the programmatic strategies that could be implemented for the control of HIV spread in districts with high out-migration. The data generated through these interviews on programmatic strategy recommendations were analysed to highlight key components and are described below in brief and detail in the full report. A central recommendation from many study participants was to use existing resources for developing programme interventions and to make programmes relevant to local needs and feasible within local contexts. Interventions should be implemented to build the local capacities of individuals and communities to address the needs of migrants and their families. Some specific suggestions on such strategies for designing interventions are provided below:

- Initiation of interventions along the corridors of migration.

- Identification of high out-migration *mandals* (administrative sub-unit of a district) and villages.
- Establish migration information centres in key geographic locations for easy access to information and services.
- Organise skills-building programmes and initiate social services for women who are left behind (particularly in areas with high out-migration) in order to empower them both socially and economically.
- Involving *panchayati raj* (village level administration) institutions at the village level in HIV prevention programmes.
- Strengthening mass media campaigns in both the places of destination and origin.
- Mainstreaming of HIV prevention interventions within existing community social and health resources/infrastructure and reduce stigma and discrimination.
- Using the link worker scheme or creating a parallel mechanism for implementing HIV prevention interventions.
- Decentralise HIV treatment, care and support services to primary health centres and sub-centres.
- Safeguard human rights of all people irrespective of their HIV status.
- Develop a resource pool of HIV-positive persons within migrant communities to implement HIV interventions for migrant workers and their spouses.
- Provide services for migrants and their families to prevent HIV transmission from mother-to-child.
- Strengthened implementation of larger developmental programmes in the places of origin, particularly in areas where poverty levels are high.
- Research to examine the sexual network structure and the spread of HIV in places of origin in order to understand the role of migration in the spread of HIV from an infected migrant individual to the uninfected partners.

This summary is based on a report of a collaborative study between National AIDS Control Organisation, UNDP and the Population Council. Financial support for this study was provided by UNDP, New Delhi. Contributors include: Niranjan Saggurti, Bidhubhusan Mahapatra, Suvakanta N.Swain, and Madhusudana Battala (Population Council); Alka Narang (UNDP), and Aradhana Johri (NACO).

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