HIV and STI epidemiology in high-risk populations in the Netherlands
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Migrants travelling to their country of origin: a bridge population for HIV transmission?

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ABSTRACT

Background: By having unprotected heterosexual contact in both The Netherlands and their homeland, migrants who travel to their homeland might form a bridge population for HIV and sexually transmitted infection (STI) transmission. We studied the determinants for such a population in two large migrant communities in The Netherlands.

Methods: From 2003 to 2005, 1938 people of Surinamese and Antillean origin were recruited at social venues in two large cities, interviewed and their saliva samples tested for HIV antibodies. We used multivariate multinomial logistic regression to explore characteristics of groups with four risk levels (no, low, moderate and high) for cross-border transmission.

Results: 1159 (60%) participants had traveled from The Netherlands to their homeland in the previous 5 years and 1092 (56%) of them reported partnerships and condom use in both countries. Of these 9.3% reported having unprotected sex with partners in both countries. People in this high-risk or bridge population group were more likely to be male, frequent travellers and older compared with people who had no sex or had unprotected sex only with a casual partner or unprotected sex with multiple partners in one of the two countries; and 4) high-risk (bridge population): unprotected sex in both countries.

Conclusions: Older male travellers of Surinamese and Antillean origin are at high risk for cross-border transmission of HIV/STIs. They should be targeted by prevention programmes, which are focused on sexual health education and HIV/STI testing, to raise their risk awareness and prevent transmission.

By having unprotected sex in their country of residence and their homeland, migrant travellers might form a bridge population for HIV and sexually transmitted infections (STIs). We aimed to identify demographic and behavioural determinants of migrants at the highest risk for heterosexual cross-border transmission of STIs (bridge population) among the Surinamese and Antillean migrant population, comprising 15.2% of the total migrant population in The Netherlands.

METHODS

From 2003 to 2005 people aged 16-70 years were approached at social venues in two large cities. The participant or one of the parents had to have been born in Suriname or the Antilles. Information was collected in an interview and saliva samples were tested for HIV antibodies.

Sex in the homeland was defined as sex with a person who is living there; sex was “protected” when he/she “always” used condoms with a partner. Based on partnerships and condom use in The Netherlands and the homeland over a 5-year period, travellers were categorised into four risk groups:

1) no-risk for cross-border transmission: no sex in either country or solely in one country;
2) low-risk: sex in both countries, but unprotected sex only with one steady partner;
3) moderate-risk: sex in both countries and unprotected sex with a casual partner or unprotected sex with multiple partners in one of the two countries; and
4) high-risk (bridge population): unprotected sex in both countries.

The association between the determinants and the risk groups was assessed by multinomial logistic regression analyses with the no-risk group as reference.

To evaluate potential STI transmission to the general population ethnicity of individuals was compared with ethnicity of their sexual partners in The Netherlands. If the respondent was born abroad, country of birth determined ethnicity. If the respondent was born in The Netherlands, parents’ country of birth determined ethnicity, with the mother’s country of birth being decisive.

RESULTS

In total 1938 people without male-to-male sexual contacts in the past 5 years were included in the analysis, of which 65% had travelled to their homeland in the past 5 years. Antibodies against HIV were found in 0.4% (95% CI 0.2 to 0.6%).

For 94% of the travellers (1092/1159) information on partnerships and condom use in The Netherlands and their homeland was available, whereby 9.2% was categorised as the bridge population. Of the bridge population 57% had previously had an HIV test. In the past year 26% had an STI check-up and 5% reported a diagnosed STI, which was comparable with the other risk groups.

Information on accompanying individuals on their past visit was available for 409 people (55%) who responded to a questionnaire revised to elicit these data. The percentage of people travelling alone on their latest visit was higher in the bridge population (39%) than in the moderate-risk or no-risk groups (58% and 53%), but comparable with the low-risk group (61%).

Our data on travel behaviour show that people in the bridge population were more likely to be male, travelled more frequently and were older compared with the no-risk group (Table 1). For gender and number of visits associations were in the same direction for the low- and moderate-risk groups as for the bridge population. Finally, people...
CHAPTER 3.3

in the low and moderate group were younger and more often reported commercial sex than the no-risk population.

The interaction between age and sex was of borderline significance (p = 0.056). For men, the probability of being in the bridge population increases with age, while for women this probability increases only slightly with age. For all ages probability of being in the no-risk group was remarkably higher for women than men.

Ethnic mixing (sexual partners whose ethnicity differs from their own) was reported less often by the bridge population (42%) compared with the moderate- and low-risk groups (59% and 66%). However, partnerships of mixed ethnicity in the bridge population were more often unprotected (64%).

**DISCUSSION**

We found that 68% of the Surinamese and Antillean participants had travelled to their homeland and 9% of those migrant travellers act as a potential bridge population for HIV/STI transmission. The percentage of migrant travellers was higher compared with earlier research (40%). Consistent with our findings, earlier research indicated that migrant travellers who were highly sexually active in their country of residence were highly sexually active abroad. People of the bridge population were older, male and travelled frequently. Older migrants have a closer relationship to their homeland, which could be a reason for frequent travelling and sexual relationships abroad in addition to relationships in The Netherlands. In contrast, most studies associated sex abroad with being young and single. However, these studies were among tourists and expatriates.

The higher rate of unprotected sex in partnerships of mixed ethnicity and relatively high HIV-testing rate in the bridge population is remarkable. However, STI prevalence was comparable among risk groups, although the Dutch STI Sentinel Surveillance Network shows the highest prevalence of chlamydia and gonorrhoea among Surinamese and Antillean compared with other migrants. Therefore, with unsafe sex in both countries and in partnerships of mixed ethnicity the bridge population is vulnerable to cross-border transmission of STIs, but also to potential transmission to the general population. A limitation of the study was recruitment through convenience sampling. However, we sampled on different days and times at venues where our target population gathers. Additionally, anonymity was guaranteed to remove barriers to participation in this survey of sexual behaviour.

Special attention could be paid to travel-related risks for STI transmission at travel clinics or airports. Counselling could raise awareness of travellers' risk of STI transmission and thereby limit transmission.

**CONCLUSION**

We conclude that older men who travel frequently are a risk group for cross-border transmission of STIs and should be specifically approached for sexual health education to raise their risk awareness. However, approach must be tailored to this population, which is not used to discussing condoms and STIs.

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**Competing interests**

None declared.

**Contributors**

EC, IC, VB, and MR participated in the design of the study, obtaining funding and permissions. MK and MR managed the field work, testing of items and the data. NV analysed the data. NV provided statistical support. All authors contributed to the final version of this paper.

**REFERENCES**