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HIV prevalence and risk behaviours among people who inject drugs in Iran: the 2010 National Surveillance Survey

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Persian and Arabic Abstract translations

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Received 7 May 2013
Revised 24 August 2013
Accepted 29 August 2013
Published Online First 14 September 2013

ABSTRACT

Objectives To assess the prevalence of HIV and related risk behaviours among people who inject drugs (PWID) in Iran.

Methods We conducted a national cross-sectional bio-behavioural surveillance survey between March and July 2010, interviewing male PWID from a geographically dispersed sample through a facility-based sampling method.

Results We recruited 2480, and tested 2290 PWID. The overall prevalence of HIV was 15.2% (95% CI 9.7% to 23.1%). Among those who had injected drugs over the last month, 36.9% had used a non-sterile needle, and 12.6% had practiced shared injection. Over the past 12 months preceding the interview, 30.4% had sold sex for money, drugs, goods or a favour. In the multivariate analysis, the prevalence of HIV had a positive association with age, while having above high school education, and permanent job were protective.

Conclusions Unsafe injection, and sexual risk behaviours are still frequent and the prevalence of HIV among PWID remains high. Intensified efforts are needed to prevent the further spread of HIV among Iranian PWID and their sexual partners.

BACKGROUND

It is estimated that around 300 000 people who inject drugs (PWID) are living in Iran.[1] National statistics show injection drug use is still the principal mode of HIV transmission in Iran.[2] From 1986 to 2006, around 64% of new HIV cases were reported as acquiring the infection through injecting drug use. Recent evidence shows that the prevalence of HIV infection might be on a downward trend in this group.[3] However, the first Iranian national Bio-Behavioural Surveillance Survey (BBSS1) of HIV among PWID, conducted in 2008, found an alarmingly high HIV prevalence of 15.3%, with high levels of risky injection and sexual behaviours.[4]

More effective prevention and care response requires tracking the key features of the HIV epidemic. This paper therefore presents the results of the second round of BBSS (BBSS2) among male PWID in Iran, thereby establishing the current status of HIV infection and gauging the potential for further spread due to injection and sexual risk behaviours.

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To cite: Khajehkazemi R, Osooli M, Sajadi L, *et al*. *Sex Transm Infect* 2013;**89**: iii29–iii32.

METHODS

Setting and participants

This cross-sectional survey was conducted in the same 10 provinces (out of 31) as in BBSS1. Based on the trend of identified HIV cases among PWID during 2000–2003, provinces were categorised in two strata: one stratum included the provinces with an upward trend, and the other included those with a downward or stable trend. From each stratum, five provinces were purposefully selected to provide the most disperse geographic representativeness.

In the current survey, between March and July 2010, using a facility-based sampling approach, PWID were recruited from drop-in centres, shelters, drug treatment centres, voluntary counselling and testing centres, and outreach spots in each selected province. Having the inputs from the officers in charge of the HIV surveillance system in each province, we selected a minimum of five different facilities in the capital city and neighbourhood cities (if feasible). Participants were recruited by convenience sampling at the centre regardless of their known or unknown HIV status and their verbal informed consent was requested to participate in the study. Eligible participants were men ≥18 years of age, who had injected drugs at least once during the past 12 months.

Data collection

A structured questionnaire was used to collect data on the demographic characteristics, and the key indicators of injection and sexual risk behaviours. Provincial supervisors trained and monitored the facility's staff to recruit, interview, and collect dried blood samples (DBS) based on a standard protocol. On completion of the behavioural survey, each subject was given an incentive of US$1.5 (US$2.5 in Tehran) in cash, and if agreed to be tested for HIV, they would get an additional US$0.5. DBS samples were tested for HIV antibodies by ELISA (using bioMérieux Vironostika Uni-Form II Ag/Ab). All positives and 10% of the negative samples were rechecked in the Pasteur reference laboratory (using Bio-Rad Genscreen Plus HIV Ag-Ab); the κ coefficient was 95.8%.

Statistical analysis

Multivariate logistic regression models were applied to determine the factors associated with HIV infection. Variables with a p value less than 0.2 in the bivariate analysis were entered into the

multivariate model. In order to adjust for the clustering effects within facilities and provinces, and also to weight for the size of facilities, the survey function in Stata V.10 was used.

RESULTS

A total of 2518 PWID were asked to participate in this study. Of these, 27 individuals did not meet the eligibility criteria, and 11 refused to provide informed consent (overall response rate 97.5%). Out of 2480 PWID, 2417 provided informed consent for HIV testing (response rate 97.5%). We were unable to complete the HIV test on 127 DBS as the specimen was not sufficient for HIV testing.

The overall prevalence of HIV was 15.2% (95% CI 9.7% to 23.1%); the highest and the lowest prevalence in different provinces were 31.9% and 2.2%, respectively. Among subgroups, unemployed PWID had the highest prevalence (20.1%), and those with above high school education had the lowest (4.6%). The mean (SD) age at the time of study, age at first drug use and age at first drug injection were 34.6 (8.9), 18.7 (5.2), and 25.9 (7.2) years, respectively. Over the past month, among those who had injected drugs, 36.9% had used a non-sterile needle and 12.6% had practiced shared injection. Over the past 12 months, 30.4% had sold sex for money, drugs, goods or a favour. In the multivariate model, HIV was significantly associated with current age, level of education and job status. Compared to the

Table 1 Sociodemographic characteristics, risk behaviours and HIV infection among people who inject drugs in Iran, 2010

			Bivariate model		Multivariate model	
	%	HIV prevalence, N (%)	OR (95% CI)	p Value	OR (95% CI)	p Value
Current age (years)						
18–25	13.9 (11.6–16.6)	7.8 (3.3–17.4)	Ref	–	Ref	–
26–35	46.6 (43.9–49.3)	15.8 (10.1–23.8)	2.3 (1.2 to 4.4)	0.017	3.1 (1.6 to 6.1)	0.001
≥36	39.5 (35.8–43.3)	17.0 (10.5–26.4)	2.4 (1.2 to 5.1)	0.018	4.1 (1.7 to 9.5)	0.002
Age at first drug use (years)						
≤18	56.7 (51.5–61.8)	14.2 (9.9–19.9)	Ref	–	*	*
>18	43.3 (38.2–48.5)	16.1 (8.5–28.4)	1.2 (0.6 to 2.1)	0.617	*	*
Age at first drug injection (years)						
≤25	57.0 (52.9–60.9)	16.4 (10.1–25.6)	Ref	–	Ref	–
>25	43.0 (39.0–47.1)	13.2 (8.6–19.6)	0.8 (0.6 to 1.1)	0.164	0.7 (0.5 to 1.1)	0.106
Marital status						
Currently married	31.2 (27.4–35.3)	13.2 (7.1–23.2)	Ref	–	Ref	–
Ever been married (divorced and widowed)	21.5 (18.7–24.6)	16.7 (10.4–25.9)	1.3 (0.1 to 1.9)	0.164	1.1 (0.7 to 1.9)	0.605
Single	47.3 (43.6–51.0)	15.9 (10.2–23.8)	1.3 (0.8 to 2.1)	0.339	1.4 (0.7 to 2.6)	0.259
Education						
Above high school	4.5 (3.1–6.6)	4.6 (1.4–13.7)	Ref	–	Ref	–
Secondary and high school	65.2 (60.6–69.6)	15.6 (9.6–24.4)	3.8 (1.2 to 12.1)	0.024	3.2 (1.1 to 9.4)	0.039
Primary school	24.6 (21.3–28.2)	16.2 (9.6–26.0)	3.9 (1.2 to 12.6)	0.024	3.1 (1.1 to 8.7)	0.036
Illiterate	5.7 (3.5–9.2)	14.7 (7.9–25.6)	3.4 (0.9 to 12.6)	0.063	2.7 (0.7 to 9.8)	0.125
Job status						
Permanent job	12.3 (7.5–19.7)	5.1 (1.9–12.5)	Ref	–	Ref	–
Temporary job	48.9 (43.7–54.1)	13.8 (9.6–19.6)	3.3 (1.2 to 8.7)	0.020	3.1 (1.2 to 8.1)	0.025
Unemployed	38.8 (31.9–46.2)	20.1 (10.9–33.9)	5.2 (1.6 to 16.4)	0.006	4.6 (1.6 to 13.6)	0.007
Having at least one injection in the last month						
No	38.2 (29.2–48.1)	11.0 (6.8–17.2)	Ref	–	Ref	–
Yes	61.8 (51.8–70.8)	17.8 (10.1–29.4)	1.7 (0.8 to 3.8)	0.178	1.7 (0.8 to 3.6)	0.184
Using a used needle or syringe for injection in the last month†						
No	63.1 (55.0–70.6)	17.9 (9.6–30.9)	Ref	–	*	*
Yes	36.9 (29.4–44.9)	17.6 (10.1–28.9)	0.9 (0.6 to 1.5)	0.903	*	*
Using a sterile needle or syringe at last injection						
No	11.1 (8.3–14.6)	19.0 (10.6–31.5)	Ref	–	*	*
Yes	88.9 (85.4–91.7)	14.7 (9.1–22.9)	0.8 (0.5 to 1.3)	0.368	*	*
Sharing injection tools with others over the last month†						
No	87.4 (83.2–90.7)	18.5 (10.2–31.4)	Ref	–	*	*
Yes	12.6 (9.3–16.8)	13.5 (7.9–22.2)	0.7 (0.3 to 1.5)	0.353	*	*
Sold sex during last 12 months						
No	69.6 (64.6–74.1)	15.1 (9.3–23.6)	Ref	–	*	*
Yes	30.4 (25.9–35.4)	13.6 (9.5–21.3)	0.9 (0.6 to 1.2)	0.392	*	*
Condom use at last sexual intercourse‡						
No	61.7 (55.1–67.9)	13.4 (8.9–19.5)	Ref	–	*	*
Yes	38.3 (32.0–44.9)	13.2 (6.1–26.2)	0.9 (0.5 to 2.1)	0.976	*	*

*Not entered into the multivariate model (p value in bivariate model was >0.2).
†Among those who had at least one injection in the last month.
‡Among those who sold sex in exchange for money, drug, goods or any favour during the last 12 months.

18–25 age group, the adjusted ORs (AORs) of infection were 3.1 and 4.1 in the 26–35 and >35 years age groups, respectively. Regarding the education level, $AOR_{(secondary\ and\ high\ school/above\ high\ school)}$, $AOR_{(primary/above\ high\ school)}$ and $AOR_{(illiterate/above\ high\ school)}$ were 3.2, 3.1 and 2.7, respectively. Having a temporary job, and unemployment increased the AORs as well (3.1 and 4.6, respectively) (table 1).

DISCUSSION

This survey showed that the prevalence of HIV among PWID in Iran is still alarmingly high, and behaviours for acquisition and transmission of HIV are common. The prevalence of HIV in BBSS1 (2008) and what we observed in this survey was remarkably similar (15.3% vs 15.2%).[4] However, the apparently stable prevalence of HIV must be considered as a dynamic balance of several competing or offsetting factors, including new infections against mortality of HIV-infected PWID, in against out migration, initiation against discontinuation of injection, and other factors such as incarceration and improved survival with antiretroviral therapy. Nonetheless, our data make a strong case that HIV transmission will remain a major health problem throughout Iran for the years to come.

In other high risk groups in Iran such as female sex workers, rather low levels of HIV prevalence (below 5%) are found compared to PWID.[5] Our findings confirm that PWID are still the most affected high risk group by HIV in Iran, with a prevalence of about 15%. Though this level of prevalence among PWID is rather high compared to other countries in the Middle East and North Africa, it is still lower than that found in other countries including Libya and Pakistan.[6 7] This might be partly explained by our method of sampling, recruiting PWID from the facilities; however, other studies which recruited individuals through respondent driven sampling have also reported a high prevalence of HIV (25%) among PWID.[8]

Although there has been a history of prevention efforts among PWID in Iran, our findings potentially point to a sustained level of risky injection among PWID. While a large proportion of participants reported the use of sterile needles and syringes in their last injection, a considerable fraction still practice shared injections. Indeed, almost 40% of participants reported a history of using previously used needles during the month before the interview. Possible explanations may be peer pressure among PWID[9 10] or having poor access to harm reduction services where and when they are needed the most.

In addition to risky injecting behaviours, sexual risk behaviours were relatively common among PWID. We found that selling sex in exchange for money, drugs, goods or a favour during the previous year were common; an issue that is difficult to address in the Iranian context. Iranian law outlaws male–male sex, which makes any explicit intervention regarding this behaviour even harder. Compounding the situation is that more than 60% of the participants reported not having used a condom in their last sexual encounter with a client. We think practical approaches are needed to slow down this potential mode of transmission among this population.

We acknowledge the limitations of our study. Our main sampling method (convenience sampling of those who seek services at the facilities) may limit the generalisation of the findings to all PWID in Iran, particularly those who are hidden and not linked to services. However, we tried to address such bias by recruiting from venues and hotspots of PWID through outreach activities. This method of sampling and recruitment is feasible given the geography and time constraints (more than 10 provinces over 4 months). It is also similar to that used in BBSS1 in 2008, thereby facilitating comparison with the results of that round.[4] As is common in behavioural surveys, social desirability may have affected the reporting of sensitive behaviours. Some sort of calibration may be needed to address this issue.[11]

In conclusion, injection and sexual risks are common among PWID and they still have the highest prevalence of HIV infection among the key populations in Iran. This high prevalence of HIV and its associated risky behaviours among PWID raise an alarm for the health authorities in Iran to design and implement effective and timely interventions to prevent further transmission among this population and to their partners.

Key messages

- People who inject drugs (PWID) continue to have the highest HIV prevalence in Iran.
- Unsafe injection and sex are still common among Iranian PWID.
- Targeted HIV interventions tailored for the specific needs of PWID are critical to prevent further transmission of HIV among this high risk group and to other subpopulations.

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Handling editor Jackie A Cassell.

Acknowledgements The authors are grateful to the following people for their scientific and administrative contributions to the study: Dr Omid Zamani, Dr Ali Mirzazadeh, Ms Soodeh Arabnejad, Dr Soodabeh Navadeh, Dr Kianoosh Kamali, Dr Mohammad Reza Aghasadeghi, Mr FarhangVahabpour, Dr Kayhan Azadmanesh and Dr Farzaneh Zolala. Special thanks are also due to the field supervisors and interviewers for their valuable work and to Dr Majid Rezazadeh from the State Welfare Organisation of Iran and the staff of the AIDS and Sexually Transmitted Diseases Office of the Ministry of health for providing logistics support and expert opinions. In addition, we highly appreciate the significant contributions of Dr Laith Abu-Raddad and Dr Willi McFarland in editing the manuscript.

Contributors AH supervised the project and led the analysis and manuscript development. MO participated in writing the proposal, project management, and drafted the first version of the manuscript. RK and MK carried out the statistical analysis and contributed to the development of the manuscript. All authors contributed to the data collection process. All authors read and approved the final version of this manuscript.

Funding The study was funded by the United Nations Development Programme (UNDP), the primary recipient of funds from the Global Fund for AIDS, Tuberculosis, and Malaria projects in Iran (grant number IRN-202-G01-H-00).

Competing interests None.

Ethics approval The ethics committee of Kerman University of Medical Sciences reviewed and approved the study's protocol.

Provenance and peer review Commissioned; externally peer reviewed.

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عنوان: تعیین شیوع عفونت HIV و رفتارهای پرخطر در میان مصرف کنندگان مواد به روش تزریقی: پیمایش کشوری مراقبت سرولوژیکی و رفتاری در ایران، 89-1388

نویسندگان: راضیه خواجه کاظمی، مهدی اصولی، لیلی سجادی، محمد کارآموزیان، عباس صداقت، نوشین فهیم فر، افشین صفایی، احسان مصطفوی، علی اکبر حقدوست

هدف: این مطالعه به منظور بررسی شیوع عفونت اچ آی وی و رفتارهای پرخطر مرتبط با آن در میان مصرف کنندگان مواد به روش تزریقی در ایران در سال 89-1388 انجام شد.

روش کار: این مطالعه، یک پیمایش کشوری مراقبت سرولوژیکی و رفتاری می باشد که بین اسفند 1388 تا مرداد 1389 در میان مردان مصرف کننده مواد به روش تزریقی انجام شد. نمونه های مورد مطالعه از لحاظ جغرافیایی پراکنده بودند، به روش مرکز محور (facility-based) در میان نمونه ای از استان های کشور انتخاب شدند.

نتایج: تعداد 2480 مرد مصرف کننده مواد به روش تزریقی در این مطالعه وارد شده و مورد مصاحبه قرار گرفتند. از این تعداد، 2290 نمونه خون نیز بدست آمد. شیوع کلی عفونت اچ آی وی 15.2% (با 95% فاصله اطمینان: 9.7% تا 23.1%) بدست آمد. حدود 36.9% از افرادی که در ماه گذشته سابقه تزریق مواد داشتند، از سرنگ غیر استریل برای تزریق استفاده کرده بودند و 12.6% هم تزریق مشترک را گزارش کردند. در طی 12 ماه گذشته، 30.4% از شرکت کنندگان در ازای دریافت پول، مواد مخدر، کالا یا خدمت اقدام به برقراری رابطه جنسی نموده بودند. نتایج بدست آمده از مدل رگرسیون لجستیک چندگانه نشان داد که "سن فعلی" یک عامل خطر برای عفونت مثبت اچ آی وی بود در حالیکه داشتن سطح تحصیلات بالاتر از دیپلم و داشتن شغل دائم از عوامل پیشگیری کننده عفونت اچ آی وی بودند.

بحث: تزریق های پرخطر و رفتارهای پرخطر جنسی همچنان در میان مصرف کنندگان مواد به روش تزریقی شایع می باشند و شیوع عفونت اچ آی وی

بر اساس نتایج به دست آمده از این مطالعه بالا است. جهت پیشگیری از گسترش بیشتر عفونت اچ آی وی در میان مصرف کنندگان مواد به روش تزریقی در ایران و شرکای جنسی آنها اقدامات پیشگیرانه بیشتری نیاز است

معدل انتشار فيروس نقص المناعة البشرية والسلوكيات المحفوفة بالمخاطر لدى متعاطي المخدرات بواسطة الحقن في إيران: المسح الرصدي الوطني للعام 2010.

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ملخص

الأهداف: قياس معدل انتشار فيروس نقص المناعة البشرية والسلوكيات المحفوفة بالمخاطر المتصلة به لدى متعاطي المخدرات بواسطة الحقن في إيران

المنهجية: قمنا بإجراء مسح بيولوجي-سلوكي وطني خلال الفترة الممتدة ما بين آذار وتموز 2010 حيث أجرينا مقابلات مع رجال يتعاطون المخدرات بواسطة الحقن من ضمن عيّنة تم اختيارها من مناطق جغرافية متعددة وباستخدام منهجية إختيار المشاركين القابعين في المرافق المختصة.

النتائج: قمنا باختيار 2480 فرداً وأجرينا الفحوصات المخبرية ل2290 منهم. بلغ معدل انتشار فيروس نقص المناعة البشرية العام 15.2% (فاصل الثقة 95%: 9.7%-23.1%). من بين الأشخاص الذين قاموا بتعاطي المخدرات عبر الحقن خلال الشهر الماضي، 36.9% استخدموا حقنة غير معقّمة و12.6% منهم تشاركوا الحقنة مع آخرين. خلال العام الذي سبق المقابلة، 30.4% كانوا قد مارسوا الجنس مقابل المال أو المخدرات أو متاع معيّنة أو خدمات. وبيّن تحليل البيانات المتعدد المتغيرات أنّ معدل انتشار فيروس نقص المناعة البشرية مرتبط بعلاقة إيجابية مع العمر في حين تبيّن أنّ متغيرات "درجة التحصيل العلمي التي تتخطى التعليم الثانوي" و "وجود الوظيفة الثابتة" هما عاملان وقائيان.

الخلاصة: لا تزال معدلات استخدام الحقن بالطرق غير المأمونة والسلوكيات الجنسية المحفوفة بالمخاطر وانتشار فيروس نقص المناعة البشرية مرتفعة عند متعاطي المخدرات بواسطة الحقن. تبرز الحاجة إلى تكثيف المجهود للحؤول دون انتشار الفيروس بشكلٍ أكبر في إيران بين متعاطي المخدرات بواسطة الحقن وشركائهم الجنسيين.