



Contents lists available at ScienceDirect

Asian Pacific Journal of Tropical Disease

journal homepage: www.elsevier.com/locate/apjtd



AIDS research

doi: 10.1016/S2222-1808(15)61042-8

©2016 by the Asian Pacific Journal of Tropical Disease. All rights reserved.

HIV-related risk behaviors among male inmates of Tehran, Iran

SeyedAhmad SeyedAlinaghi^{1,2}, Behnam Farhoudi^{3*}, Saeed Ghodrati⁴, Mostafa Hosseini⁵, Minoos Mohraz¹, Ramin Alasvand⁶¹Iranian Research Center for HIV/AIDS, Iranian Institute for Reduction of High Risk Behaviors, Tehran University of Medical Sciences, Tehran, Iran²Tehran Positive Club, Tehran, Iran³Islamic Azad University, Tehran Medical Sciences Branch, Tehran, Iran⁴Shahid Beheshti University, Tehran, Iran⁵Department of Epidemiology and Biostatistics, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran⁶Health and Treatment Office of Iranian Prisons Organization, Tehran, Iran

ARTICLE INFO

Article history:

Received 7 Mar 2016

Received in revised form 23 Mar 2016

Accepted 21 Apr 2016

Available online 28 Apr 2016

Keywords:

HIV

Inmates

Risk behaviors

Sexual relationships

Condom

ABSTRACT

Objective: To investigate the frequencies and types of HIV-related risk behavior among inmates of Tehran, Iran.**Methods:** We used active case finding to assess the prevalence of HIV high risk behaviors. The research was conducted on male prisoners in the Great Tehran Prison from October 2013 to May 2014.**Results:** Two thousand and fifty (19.5%) from 10 492 prisoners who were admitted to “quarantine” of the prison participated in HIV testing and counseling. Of 2050 inmates, our results showed that sexual encounters were the most prevalent risky behavior (89.6%) reported by the prisoners, followed by tattooing (34.7%) and injection drug use (24.2%).**Conclusions:** Although the previous studies reported that the main leading cause of acquiring HIV infection in Iranian prisons was injecting drug use, the prevalence of injecting drug use was less than the prevalence of unsafe sexual relationships and tattooing in the present research among the inmates of Tehran.

1. Introduction

The prevalence of HIV infection is higher among inmates than in the general population[1]. Inmates are more prone to some infectious diseases, such as HIV, due to their participation in high risk behaviors such as injection drug use, unprotected sex, and tattooing[2].

It is estimated that approximately 1.2% of all inmates in Iran are infected with HIV[3]. Iran has experienced several outbreaks of HIV infection inside the prisons, leading to an increase in the establishment of HIV prevention and control programs in the prisons[4].

Some inmates enter prison with a history of high risk behaviors, such as risky sexual behavior and injecting drug use, predisposing them to acquire HIV infection[5]. They may continue this pattern of

high risk behaviors during incarceration and transmit the infections to other inmates. This pattern of risky behaviors may continue after being released from prison and may potentially place them, as well as members of the community, at risk for acquiring HIV. As a result, it is imperative that high risk behaviors in inmates should be addressed through harm reduction programs as a mean to prevent the spread of HIV[6-8].

Although harm reduction programs such as methadone maintenance treatment and Needle and Syringe Exchange Program have reduced the prevalence of HIV among Iranian inmates, some of the inmates persist with high risk behaviors[9]. There is a lack of knowledge regarding the amount and types of prisoners' risk behaviors among inmates of Iran. Therefore, we need to improve our knowledge regarding high-risk behaviors of inmates to further develop HIV prevention strategies. In the present study, we aimed to investigate the characteristics of HIV-related high risk behaviors among inmates of Tehran, Iran.

2. Materials and methods

Upon a prisoner's admission to prison, detection of undiagnosed HIV infection and initiation of antiretroviral therapy should be taken into account as part of the screening process. In the present study, we used active case finding to assess the prevalence of HIV

*Corresponding author: Behnam Farhoudi, Islamic Azad University, Tehran Medical Sciences Branch, Shariati Street, Zargandeh, Tehran, Iran.

Tel/Fax: +98 21 22006660-7

E-mail: b_farhoudi@yahoo.com

The study protocol was performed according to the Helsinki Declaration and approved by Institutional Review Board of Tehran University of Medical Sciences. Informed oral consent was obtained from the prisoners.

Foundation Project: Supported by Tehran University of Medical Sciences (TUMS) (Grant No. 9021598014).

The journal implements double-blind peer review practiced by specially invited international editorial board members.

high risk behaviors. The research was conducted on male prisoners in the Great Tehran Prison from October 2013 to May 2014. Active case finding of HIV high risk behaviors was employed on “reception and identification unit (quarantine)” of the prison by the prison’s clinical staffs who educated the prisoners about HIV-related high-risk behaviors. All prisoners with risky behaviors were then referred to the prison Voluntary Counseling and Testing (VCT) center.

The study protocol was performed according to the Helsinki Declaration and approved by Institutional Review Board of Tehran University of Medical Sciences. Informed oral consent was obtained from the prisoners.

3. Results

Two thousand and fifty (19.5%) from 10492 prisoners who were admitted to “quarantine” of the prison participated in HIV testing and counseling. Of 2050 inmates, the results showed that 496 (24.2%) inmates had the history of injection drug use, 1837 (89.6%) had the history of unsafe sexual relationships, 24 inmates (1.2%) had the history of receiving blood and blood products, 711 (34.7%) had the history of tattooing, and 9 (0.4%) inmates displayed no high-risk behaviors. When asked about condom use in extramarital sexual relationships, 16.3% inmates said that they always used condoms, 45.4% sometimes used condoms, 8.7% inmates rarely used condoms, and 29.6% inmates never used condoms in their extramarital sexual relationships.

The results regarding the last risky behaviors also revealed that the average time elapsed after the last drug use was 130.8 days and the average time elapsed after the last risky sexual behavior was 249.2 days among the inmates.

4. Discussion

Based on these findings, it was found that approximately 50% of the admitted inmates used condoms sparingly, less than one-fifth always used condoms and about one-third of the inmates never used condoms in their extramarital sexual relationship. Of 2050 prisoners, ninety percent of inmates reported engaging in unsafe sexual relationships, which is one of the main leading causes of acquiring HIV infection. While some of the inmates are unaware of the potential adverse consequences of risky sexual behaviors, some of them continue these behaviors despite knowing the risks attributed to these behaviors. Although extramarital sexual relationship is highly stigmatized in Iran, the great majority of the inmates have reported unsafe extramarital sexual relationships. We need to focus more deeply on addressing the prevention strategy to reduce risky sexual behaviors among inmates in the future plans.

Tattooing was found to be the second leading HIV risk behavior among the prisoners in this study. Inmates need to be educated on the potential risks of acquiring HIV and blood borne infections through tattooing in prison, which commonly uses shared tattooing equipment. The risk of acquiring HIV by tattooing could be greatly reduced by providing tattooing equipment for this practice.

Previous studies have reported that incarceration is related to the increased spread of HIV^[10,11]. Despite the previous reports, the main leading cause of acquiring HIV infection in Iranian prisons was reported to be injecting drug use^[12], the prevalence of injecting drug use was less than the prevalence of unsafe sexual relationships and tattooing in the present research among the inmates of Tehran. They might have underreported injecting drug use because of the fear of the criminal conviction.

One of the limitations of this study was that our sample group did not include incarcerated women. Another limitation was that our data

were self-reported and inmates might have underreported these HIV-related risk behaviors due to the stigmatized and illegal nature of these activities. Despite these limitations, our study provided useful knowledge concerning types and frequencies of HIV-related risk behaviors, which will be useful for the future planning of prevention strategies.

Conflict of interest statement

We declare that we have no conflict of interest.

Acknowledgments

This study was part of a PhD dissertation supported by Tehran University of Medical Sciences (TUMS) (Grant No. 9021598014). This project was funded by UNODC in Iran. We also thank all staffs in the Great Tehran Prison for their help.

References

- [1] Ghasemzadeh I, Shahri RZ, Namazi SA, Sadeghi P, Namazi SS, Ghasemzadeh A. Review of HIV risk factors in prison inmates in Iran. *Life Sci J* 2014; **11**(4s): 236-9.
- [2] Butler T, Boonwaat L, Hailstone S, Falconer T, Lems P, Ginley T, et al. The 2004 Australian prison entrants’ blood-borne virus and risk behaviour survey. *Aust N Z J Public Health* 2007; **31**(1): 44-50.
- [3] SeyedAlinaghi SA. Comparison of TB/HIV indicators after implementation of clinical protocol for TB and TB/HIV management in Iranian prisons [dissertation]. Tehran University of Medical Sciences; 2016.
- [4] Joint United Nations Programme on HIV/AIDS (UNAIDS). *2006 report on the global AIDS epidemic: a UNAIDS 10th anniversary special edition*. Geneva: World Health Organization; 2006.
- [5] Liu T, Bazerman L, Pinkston M, Nunn A, Rana A, Beckwith CG. Co-occurring HIV risk behaviors among males entering jail. New York: Cornell University; 2013. [Online] Available from: <http://arxiv.org/abs/1303.6169> [Accessed on 12th January, 2016]
- [6] Chandler RK, Fletcher BW, Volkow ND. Treating drug abuse and addiction in the criminal justice system: improving public health and safety. *JAMA* 2009; **301**(2): 183-90.
- [7] Morrow KM; Project START Study Group. HIV, STD, and hepatitis risk behaviors of young men before and after incarceration. *AIDS Care* 2009; **21**(2): 235-43.
- [8] Milloy MJ, Buxton J, Wood E, Li K, Montaner JS, Kerr T. Elevated HIV risk behaviour among recently incarcerated injection drug users in a Canadian setting: a longitudinal analysis. *BMC Public Health* 2009; **9**(1): 156.
- [9] Shahbazi M, Farnia M, Moradi G, Karamati M, Paknazar F, Mirmohammad Khani M. Injecting drug users retention in Needle-Exchange Program and its determinants in Iran prisons. *Int J High Risk Behav Addict* 2015; **4**(2): e23751.
- [10] Kheirandish P, Seyedalinaghi SA, Hosseini M, Jahani MR, Shirzad H, Foroughi M, et al. Prevalence and correlates of HIV infection among male injection drug users in detention in Tehran, Iran. *J Acquir Immune Defic Syndr* 2010; **53**(2): 273-5.
- [11] Zamani S, Kihara M, Gouya MM, Vazirian M, Nassirimanesh B, Ono-Kihara M, et al. High prevalence of HIV infection associated with incarceration among community-based injecting drug users in Tehran, Iran. *J Acquir Immune Defic Syndr* 2006; **42**(3): 342-6.
- [12] Dibaj R, Ataei B, Yaran M, Nokhodian Z, Tayeri K, Ali Z. Prevalence of HIV infection in inmates with history of injection drug use and evaluation of risk factors, in Isfahan, Iran. *Pak J Med Sci* 2013; **29**(1): 399-402.