Review Article

Review of HIV risk factors in prison inmates in Iran

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Abstract: Prisoners are one of the high risk groups for HIV transmission. They are at increased risk for HV infection due to high risk behaviors such as injecting drug using, needle/syringe exchange, tattooing, and unsafe sexual contact. The prevalence of HIV infection in Iran has been increased in recent decades while, the prevention strategies also are widely implemented in Iran. In this review, the results of searched literatures demonstrated that the major risk factor for HIV infection and transmission in prison inmates in injecting drug user, followed by tattooing and even razor sharing. The results showed that history of unsafe sexual contact with men or women inside or outside the prison is not a major risk factor for HIV infection. Whoever, we should consider that the recent risk factor may be under reported by prisoners because of disgraceful behavior.

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Introduction:

Several infectious diseases have been reported to be more prevalent in prisoners. Some of these diseases including HIV infection, hepatitis C and B infections especially in developing countries became as a major problem in public health system (Alizadeh, Alavian et al. 2005; Zamani, Kihara et al. 2006).

Some studies demonstrated that over 75 to 80% of Iranian prisoners have been convicted for drug consumption, trafficking or other drug related crimes (Khani and Vakili 2003). Evidence has been demonstrated that HIV infection has strongly direct association with intravenously drug consumption which is more frequent in prison inmates (Rahimi-Movaghar, Razaghi et al. 2010).

In recent decades HIV infectious has been dramatically increased in Iranian prisoners. some authors recommended that this could be due to lower information about HIV and its transmission ways (Nakhaee 2002; Ghasemzadeh, Piraloo et al. 2013).

Additionally, this population frequently shares their injecting instruments together and expanding the HIV infection in other individuals (Alizadeh, Alavian et al. 2005).. Numerous risk factors have been identified for HIV infection including unsafe sexual contact, male gender, being intravenous drug users (IDUs), STI co-infection, migrant and mobile population (Zamani, Kihara et al. 2005; Todd, Abed et al. 2007).

As mentioned, Prison inmates are at increased risk for HIV infection because of higher HIV risk factors. Several investigators demonstrated that HIV infection in prison inmates has direct association with duration of imprisonment, duration of addiction and number of sexual partners (Razzaghi, Movaghar et al. 2006; Azarkar and Sharifzadeh 2009). In the present review we aimed to evaluate the studies in which HIV risk factors were investigated in prisoners.

Method:

In this review the literature search comprised the most available databases in Iran including Pubmed and Google Scholar. The terms and keywords included prison, prisoner, prison inmate, human immunodeficiency virus (HIV), acquired immune deficiency syndrome (AIDS), risk factors, prevalence, epidemiology and incidence.

The search strategy was limited to available free full text articles in English language and published during January 2000 to September 2013 in Iran. Additionally, unpublished abstract from symposium or conference or only abstract available, clinical trials and review articles did not include in the study.

1. Intravenous drug abusing:

Several investigators have demonstrated that one of the most important risk factors among prisoners for HIV infection and other infectious disease is intravenous drug abusing (Zamani, Kihara et al. 2006; Azarkar and Sharifzadeh 2009). In a study by pourahmad and colleagues in which the seroprevalence and risk factors of prisoners for HIV was evaluated in three provinces in Iran demonstrated that injection drug users (IDUs) had over 4 times increased risk for HIV infection compared to non IDUs (Pourahmad, Javady et al. 2007).

In another study by Navadeh and colleges, prevalence and related risk behaviors among 5530 Iranian prisoner demonstrated that IDUs had significantly at increased risk for HIV infection (Navadeh, Mirzazadeh et al. 2013).

Zamani et al conducted a study among drug users referred to 3 drug treatment centers in Tehran. The authors appraised the prevalence and factors related to HIV-1 infection. The prevalence of HIV-1 infection among IDUs was about 15% while, among non-IDUs reported about 5%. The findings demonstrated that HIV -1 infection among patients who had history of shared injection was over 12 folds higher than other patients. The author concluded that shared injection was the most important risk factor for HIV infection(Zamani, Kihara et al. 2005).

As demonstrated above, many studies have revealed that intravenous drug abusing itself is a major risk factor for HIV infection. Accordingly, some countries considered several harm reduction services in prisons such as methadone maintenance therapy and needle exchange programs.

These strategies dramatically reduced the incidence of HIV infection and even other fatal infectious disease. As well as some other studies demonstrated that increasing knowledge of prisoners regarding HIV and its transmission can reduce the high risk behaviors and consequently incidence of HIV infection among prisoners (Zamani, Kihara et al. 2005).

2. Tattooing:

One of the most common causes of HIV transmission among prisoners is tattooing. Pourahmad and colleagues demonstrated that although the risk of HCV infection and HBV infection by tattooing procedure is higher than HIV infection nevertheless, it is a powerful risk factor for transmission of HIV in especially among prison inmates.

As well as, in a study by Pourahmad showed that the main risk factor for HIV transmission among prisoners after sharing needle/syringe is tattooing procedure (Pourahmad, Javady et al. 2007).

Navadeh et al demonstrated among 2041 prisoner with history of tattooing 65 (3.3%) were positive for HIV infection. While, among 2492 prisoner without history of tattooing 23 (1%) were positive for HIV infection. The authors demonstrated that HIV infection was significantly associated with history of tattooing (Navadeh, Mirzazadeh et al. 2013).

Based on the Iranian studies and other European countries, tattooing is a high risk behavior which is frequently conducted among prison inmates and the evidence have shown that peoples who had conducted tattooing inside the prisons were more susceptible for HIV transmission (Hellard and Aitken 2004; Eshrati, Asl et al. 2008).

Unfortunately, there is no written law upon the subject and this procedure may be performed by non professional or non certified persons in illegal or non-specialized centers. Thus, the majority of investigators believe, as the tattooing is an invasive procedure it should be conducted by medical doctors (Pourahmad, Javady et al. 2007).

3. Razor sharing:

In addition to IDU and tattooing several important high risk behaviors have been reported for prisoners. Razor sharing is also reported as a possible high risk behavior among prisoners and widely used in prisons for shaving and even hairdressing (Pourahmad, Javady et al. 2007).

Rahbar and colleagues evaluated the blood born infections among incarcerated and non incarcerated IDUs in Mashhad. The author found that razor sharing was significantly more among HIV positive patients than HIV negative. They also, concluded that razor sharing is an important route of HIV transmission in incarcerated IDUs (Rahbar, Rooholamini et al. 2004).

In a study by pourahmad and colleagues demonstrated that among 515 prisoners with history of razor sharing 58 (11%) were positive for HIV infection. This study indicated that razor sharing was the third most common cause for HIV transmission in prison inmates after IDU and needle sharing (Pourahmad, Javady et al. 2007).

Although some studies revealed that razor sharing is a major risk factor for HIV transmission but, the evidences are limited to be conclusive and more investigations are needed to consider razor sharing as a major risk factor for HIV transmission. As well as, it seems that distribution of disposable plastic razor and increasing the knowledge of prisoners and encourage them to use personal shaving kit may decrease the risk of HIV transmission (Yazdi, Aschbacher et al. 2006).

4. Sexual contact:

Unprotected sexual contact with men or female, multiple sexual partner and homosexuality outside and inside the prison are known as probable

high risk behaviors among prisoners (Gheiratmand, Navipour et al. 2005).

Although unsafe sexual contact are frequently studied in normal population but, evidence regarding that in incarcerated person are limited and unreliable in Iran (Yazdi, Aschbacher et al. 2006).

In a study by Navadeh and colleagues indicated that history of extramarital intercourse in the last year before incarceration, number of heterosexual partners in the past year, using condom in last extramarital intercourse and the number of men who had anal sex with men did not differ dramatically between HIV positive and negative individuals (Navadeh, Mirzazadeh et al. 2013). The author reported that this could be due to under reporting of stigmatized behaviors by prisoners.

In another study by Pourahmad et al. indicated that among prisoners with history of illegal sex contact and homosexuality 5.5% and 2.6% were positive for HIV infection, respectively. The authors concluded that illegal sex and homosexuality were not major risk factor for HIV infection among prisoners (Pourahmad, Javady et al. 2007).

In other hand, some other studies demonstrated that prisoners are at increased risk HIV infection due to high frequency of unsafe sexual activities (Poppen, Reisen et al. 2004). But, in Iranian prisoners this information may be under reported due to stigmatized behaviors and this bias affected the actual results (Navadeh, Mirzazadeh et al. 2013).

Conclusion:

In order to prevent the increasing rate of HIV transmission among prisoners senior, policymakers in Iran had adopted several harm reduction policies.

The prison department health authorities have established nongovernmental organizations in collaboration with Ministry of health. One of the most famous nongovernmental organizations is triangular clinic in which, various critical services are provided for patients with HIV/AIDS, IDUs and even sexually transmitted diseases. This clinic provides HIV testing, counseling, methadone maintenance therapy, syringe/ needle exchange and other medical cares for high risk individuals (Vazirian, Nassirimanesh et al. 2005; Razzaghi, Nassirimanesh et al. 2006). Although the strategies regarding HIV prevention have been increased in recent years, but it seems that it is not enough and increasing the knowledge of general population and especially prison inmates seems to be necessary (Razzaghi, Nassirimanesh et al. 2006).

This study demonstrated that the main risk factor for HIV infection among prison inmates is history of IDUs followed by tattooing. This literature review demonstrated that history of sexual contact inside or outside the prison was not significantly different between HIV positive or negative patients. However, this studies were not enough accurate to be conclusive and the results was influenced by reporting bias.

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