

High risky behaviors among intravenous drug users in Isfahan, Iran: A study for hepatitis C harm reduction programs

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Date of Submission: May 29, 2011

Date of Acceptance: Aug 1, 2011

How to cite this Article: Hassannejad R, Kassaian N, Ataei B, Adibi P. High risky behaviors among intravenous drug users in Isfahan, Iran: A study for hepatitis C harm reduction programs. *Int J Prev Med* 2012; Special issue, S73-8

ABSTRACT

Objectives: Intravenous drug users (IVDUs) who share needles/syringes and practice sexual behaviors, are the most important group in the transmission of blood-borne infection diseases such as hepatitis C virus (HCV). Therefore identification of prevalent high-risky behaviors among IVDUs to detect the most route of transmission among them is essential to develop harm reduction programs among IVDUs and decrease HCV transmission from them to community.

Methods: The cross-sectional study was carried out on 1510 intravenous drug users from November 2008 to February 2009 in Isfahan province, Iran. After obtaining consent form from participants, information was collected by interviewer-administered validated questionnaire. The data was analyzed with descriptive statistical methods by SPSS software, version 15.

Results: 1510 IVDUs participated in the study with the mean age 32.16 ± 8.26 . 66.4% of participants had a history of illegal sexual activity. Among male IVDUs who had illegal sexual contact, 40.6% reported having homosexual contact and 36.2% of them have used condom in their contact. Also 57.7% had sexual contact with female sex workers. 83.5% of IVDUs reported having multiple sexual partners, and 30.9% had IVDUs sexual partners. The mean number of injection and duration of injection among IVDUs were 75.12 ± 95.51 times per month and 12.34 ± 7.53 years respectively. 36.9% of subjects have reported sharing needles/syringes.

Conclusions: According to the high prevalence of unprotected sexual contacts and unsafe injection among IVDUs, effectiveness interventions and harm reduction programs are necessary to prevent spread of blood-borne infection diseases particularly HCV. With reduction of risky behaviors and consequently decrease of spread of HCV, these programs benefit both drug users and society.

Keywords: Hepatitis C virus, high-risky behaviors, intravenous drug users.

INTRODUCTION

Intravenous drug users (IVDUs) who share needles/syringes and are sexually active, are the most important group in the transmission of blood-borne infection diseases.^[1] According to

the blood-borne infections are behavioral diseases, of all risk factors relevant to spread them, risky behaviors are most important.^[2]

Risky behaviors in individuals reflect social structure fashion risk in their lives and there is strong relationship between them. Spread of infection diseases such as HCV, HBV and HIV in society are dependent to ways that human interact and behave. The act of social scientist should be focused on factors that influence the way in which individuals do risky behaviors.^[2]

One of the risky behaviors that frequently occur among IVDUs is, sharing injecting equipments. They can transmit infection to their drug user partners through sharing drug injecting instruments.^[1] Multiple studies among Iranian IVDUs have reported high frequencies of sharing needle ranged from 48.8% to 75%.^[3-6]

In some countries such as Italy, Spain and United States, sexual activities are cause of transmission from IVDUs to sexual partners who do not inject drugs.^[1] Most of IVDUs are sexually active and put their sexual partners at high risk of infection diseases through unprotected sex. Sexual behaviors are also contributing to the infection diseases epidemic among Iranian IVDUs. Mirahmadizadeh *et al.*^[4] have shown 47.4% of the IVDUs had sexual contact with someone other than their spouse. 19.4% and 41.4% of the subjects had, at least, one homosexual and one heterosexual contact per month, respectively. In study which was done on drug abuse in Iran, one-third of the married respondents, more than half of divorced/separated respondents and more than 70% of unmarried respondents reported to have illegal sexual contact.^[3] In another study 8% of male IVDUs have reported ever having sex with another man.^[7] The results of other studies have shown the rates for condom use among IVDUs is between 32% and 53%.^[3,4,7]

Since the high risky behaviors among IVDUs such as sharing injection equipments and sexual contact are risk factors for blood-borne infection diseases and one of the most important infection diseases is hepatitis C virus (HCV) that became a major public health problem in the world to-

day and causes critical medical consequences such as cirrhosis and liver diseases, developing harm reduction programs among IVDUs, to decrease HCV transmission is essential.^[8]

According to existence evidence and earlier studies, understanding high risky behaviors, characteristics and predictors of it among IVDUs give insight to public health services to identify high risk group of infection transmission and conduct effective prevention policy to reduce spread of HCV infection in public population.^[9] Therefore, chief aim of this study is, mapping the distribution of risky behaviors among IVDUs into setting successful programs to prevent the rise of HCV infection in Iranian's population.

METHODS

The cross-sectional study was carried out on 1510 intravenous drug users in Isfahan province, Iran. Snowball sampling method was used for selection of study subjects. The study participants filled out informal consent form and study was conducted with understanding and consent of each participant and was approved by research ethics committee of Isfahan University of Medical Sciences, Isfahan, Iran.

Needed information was collected by questionnaire from November 2008 to February 2009. We evaluated age, sex, marital status, education and job among demographic information and injection and sexual behaviors.

The questionnaires were completed by interview with closed questions. Interview was done by a person who was educated and reliable with study participants. Face and Content validity of questionnaire was evaluated by 10 expert persons. Cronbach alpha showed ($r = 0.78$) reasonable reliability. The data was analyzed with descriptive statistical methods by SPSS software, version 15.

RESULTS

1510 IVDUs participated in the study with the mean age 32.16 ± 8.26 . As seen in Table 1, the majority of the participants were male

Table 1. Demographic characteristic

Variable	Frequency	Percent %
Sex		
Male	1482	98.1
Female	28	1.9
Marital status		
Married	790	52.4
Not Married	717	47.6
Education		
illiterate	23	3.5
Primary school	254	38.6
Guidance school	264	40.2
High school	69	10.5
Diploma	7	1.1
College	9	1.4
BSc	31	4.7
Job		
Yes	834	73
No	308	27

(98.1%). The mean age of male and female IVDUs was 32.12 ± 8.21 and 33.75 ± 10.31 , respectively. Regarding marital status, 52.4% of the subjects were married. Most of the participants had job (73%). 3.5% had never attended school, 38.6% had attended primary school, 40.2% had attended guidance school, and 10.5% had reached high school. About 1.1% had finished high school and only 6.1% had more than high school education.

Risky behaviors of participants are described in Table 2. The majority of participants had a history of illegal sexual activity (66.4%). Among male IVDUs who had history of illegal sexual activity, 40.6% reported having sex with men. In addition, 36.2% had used condom in their contact and 57.7% had sexual contact with female sex workers. Of participants with illegal sexual activity, 14.8% reported having one sexual partner, 39.2% two to nine sexual partners and 44.3% more than nine sexual partners. Also 30.9% had sexual contact with IVDUs. The mean number of injection and duration of injection among IVDUs were 75.12 ± 95.51 times per month and 12.34 ± 7.53 years respectively.

36.9% of them have shared needles/syringes. Also, 43.8% of participants smell drugs and 38.6% used drugs orally, too.

DISCUSSION

The fast increase of infection disease among IVDUs can be caused by sharing injection equipments which is very usual among them.^[10] In our study 36.9% of IVDUs had experience of sharing needles/syringes. Also the mean number of injections per month (75.12 ± 95.51) and duration of injection (12.34 ± 7.53) display high frequency of injecting among IVDUs. As found in this and other studies in Iran^[4,6,7] sharing needles/syringes has decreased that may be due to accurate information about cleaning needles/syringes and their infection condition. It is main factor that can ultimately lead to reduce injection risky behaviors.^[10]

Sexual contacts are main cause of infections transmission in the world. Because of unsafe sexual behaviors are common among IVDUs, it is principle way of transmission of infections from them to their families and communities.^[4] Similar to result from other studies,^[3,7,9,10] we

Table 2. Risky behaviors among intravenous drug users

Risky behaviors	Frequency	Percent %
Illegal sex	1000	66.4
Man-Man	403	40.6
Man-Female	879	89.8
Condom use	356	36.2
Number of sex partners		
0	16	1.7
1	142	14.8
2-9	375	39.2
>9	424	44.3
Sex worker partners	517	57.7
Sex with IVDUs partners	287	30.9
Needle-sharing	503	36.9

also found that illegal sexual contacts among IVDUs play important role to transmit infections to non-IVDUs and non-sharing injectors. In accordance with earlier studies^[4,7,9,11] our result indicated that 57.7% of male IVDUs visit female sex workers and 30.9% of participants had sexual contact with IVDUs partners. Most of them have reported having multiple sex partners. Since the having sex worker partners have been reported in IVDUs, the sex workers are another important source of infection in addition to IVDUs. Therefore the risk of blood-borne infections from and to sex workers should be expected.^[10] Homosexual contacts and sexual practice with someone other than spouse have been found in this study in 40.6% and 89.8% of our male participants respectively, like other studies.^[3,4,7,11]

Additionally, most of the male IVDUs who are sexual active, have unprotected sexual practice that confirm results of other studies.^[3,7,9,10] The rate of condom use in our study at time of having sex was 36.2%. Therefore it puts the drug users in high risk of infection through the sexual practice, as well as rise of transmission the virus from them to their sexual partners.^[10] As a results, high level of sexual activity with different types of partners and hardly-ever use of condom

in IVDUs group cause spread the virus to a large number of other people.

The mean age of study subjects (32.16 ± 8.26) shows they are young as found in other studies.^[4,6] Young age is more likely to use drug and this group is more able to be affected by consuming and injecting drugs and they need programs that particularly focus on them.^[4,10]

According to the high prevalence of unprotected sexual contacts and unsafe injection among IVDUs that put them in high risk for transmission [Figure 1], effectiveness interventions and programs are necessary in Iran.

Preventing the transmission of the virus among IVDUs and from them to other population involves to conduct proper intervention programs.^[10] Those programs should be concentrated on motivating drug users to give up the consumption of illicit drugs; great efforts should be made to inform young people especially, of the dire consequences of taking up the habit. In addition IVDUs should be educated with appropriate information about blood infections and different ways of transmission. Sterile injection instruments should be provided and presented through needles/syringes exchange programs.^[12] Sexual risk reduction programs are also essential to prevent transmission of infections among

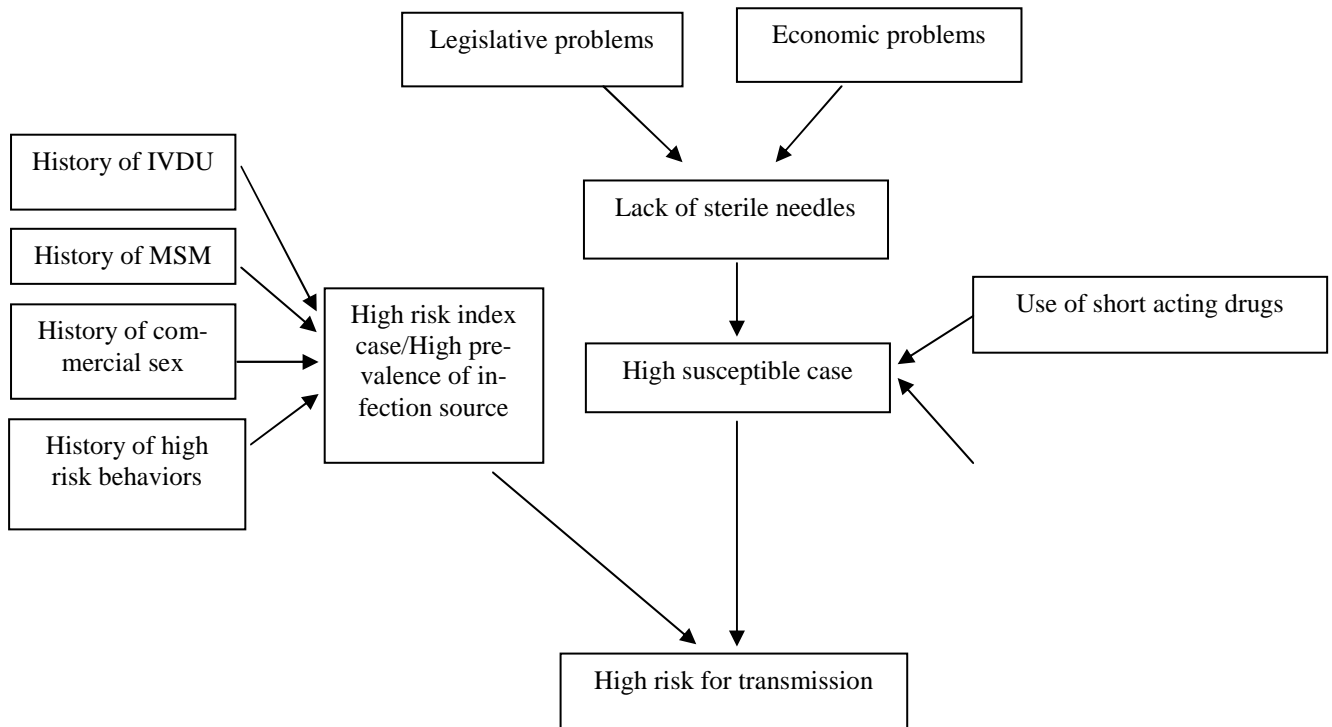


Figure 1. Theoretical model for increased risk of HCV transmission among IVDUs

IVDUs who are sexually active, as well as spread from them to public population.^[10] Consequently, IVDUs should be considered for intervention efforts including distribution of condom use.

In conclusion, harm reduction policy and related effective efforts toward intravenous drug users should be conducted to prevent spread of blood-borne infection diseases particularly HCV that associated with liver diseases which are often hidden for decades. Ultimately, with reduction of risky behaviors and consequently decrease of spread of HCV, these programs benefit both drug users and society.

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Source of Support: Nil **Conflict of Interest:** None declared