



**Original Article:**

**Risky Behaviors of Injecting Drug Users (IDUs) Referred to Addiction Rehabilitation Centers in Khuzestan Province in 2014**

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**Abstract:** Aim: In the last decade, the prevalence of injecting drugs has been increasing rapidly. Injecting drug use puts one at the risk of risky behaviors that affect the health of individual and society. The present study aims at evaluating and comparing risky behaviors of injecting and non-injecting drug users. Methods: In this cross-sectional descriptive study, 4400 addicts referred to public, private and drop-in-centers (DICs) in 2014 were enrolled. The addicts were divided into injecting and non-injecting drug users. A researcher-made questionnaire was used to collect demographic data and the pattern of drug use and risky behavior. Data were analyzed by SPSSV21, chi-square test and ANOVA. A significance level of less than 0.05 was considered. Results: Among the addicts, 4% were injecting drug users (IDUs) and 96% non-injecting drug addicts (non-IDUs). The age of the first injection was  $24.68 \pm 6.45$  years old. The age of onset of drug use in IDUs was significantly lower than in non-IDUs ( $P < 0.001$ ). Risky behaviors including the use of shared needles, risky sexual relations, a history of sexually transmitted infections and a history of imprisonment and suicide were significantly higher in IDUs. Addiction relapse and slip during treatment were higher in IDUs ( $P < 0.001$ ). Conclusion: Injecting drug addiction significantly increases the risk of relapse and risky behaviors. Priority should be given to risky behavior prevention programs.

**Key Words:** Risky behaviors, Injecting drug users (IDUs), Addiction

**Introduction:**

Drug abuse is one of the newest human problems in recent years and one of the most complex human phenomena [1] that threatens the social welfare and security while increasing crimes and risky behaviors that disrupt social security.[2] According to official statistics, there are more than two million

drug users in Iran. In addition, eleven millions suffers from drug abuse by themselves or their relatives.[3]

According to literature, when the body needs drugs, the addict does any action to satisfy his/her need and this increases the risk of committing risky behaviors.[4] In Iran and especially in Khuzestan province, traditional pattern of drug use is fumigation and the use of injectable drugs is a new phenomenon showing a growing trend in recent years.[5-7] The results of Amani *et al.* indicate a change in drug use pattern from fumigation to injection.[8]

Committing risky behaviors, especially the use of shared needles and risky sexual behaviors among IDUs put the individual and community at the risk of infections, particularly sexually transmitted diseases.[9-11] This group of addicts are more prone to viral infections caused by hepatitis B and C and HIV.[12] Several studies have shown that HIV is mainly transmitted by the use of shared needles and unprotected sexual contact.[13,14]

Non-recognition of IDUs, especially those with risky behaviors can lead to the spread of disease and irreversible complications. Thus, it is of great importance to examine drug use patterns and the prevalence of risky behaviors which can predispose individuals to diseases, especially sexually transmitted infections. This study aimed at determining the prevalence of risky behaviors in IDUs referred to public and private drug rehabilitation centers and drop-in-centers (DICs) in Khuzestan province.

**Materials and Methods**

The cross-sectional descriptive study was conducted on drug users referred to public and private and drop-in (DIC) addiction rehabilitation centers in Khuzestan province from April 2014 to March 2015.

### Data collection tool

A researcher-made questionnaire was used for data collection. The questionnaire consisted of three parts. The first section on demographic data includes age, education level, occupation, income, family size and residence. The second section on drug abuse includes the type of drug, duration of use, age at first use, drug use motivation, the reason for addiction treatment and the prevalence of IDUs. The third part evaluates risky behaviors of drug users including alcohol use, multiple risky sexual behaviors, history of imprisonment, etc.

### Population

Drug users referred to addiction rehabilitation centers were enrolled with informed consent. The addicts were divided into injecting and non-injecting drug users based on the type of drugs.

### Sample size and sampling

To conduct the study, 4,400 drug abusers referred to addiction rehabilitation centers in Khuzestan province were selected. The sample was selected by convenience sampling.

### Ethical considerations

This study was approved by ethics committee of Ahvaz Jundishapur University of Medical sciences with reference number of: IR.AJUMS.REC.1394.419. After presenting the objectives of the study and ensuring confidentiality, informed consent form was completed by the subjects.

### Data analysis

The descriptive statistics including the mean and standard deviation for continuous variables and frequency and frequency percentage for classified and nominal variables were calculated. In analytical statistics was X<sup>2</sup> tests to determine relationship between qualitative variables and t-test or nonparametric equivalent was used to relate binary qualitative variable. A level of significance was less than 0.05.

### Results

The average age of IDUs and non-IDUs was 37.42 ± 9.19 and 38.25 ± 10.85 years, respectively. The family size of IDUs and non-IDUs was 4.30±1.7 and 4.51±1.7 persons, respectively. No statistically significant difference was observed between the IDUs and non-IDUs in terms of age and family size (P>0.05). The majority of subjects were male in urban areas and most of them were under diploma (Table 1).

The monthly income of IDUs and non-IDUs was 8875800 ± 67357900 and 9807800 ± 5811570 IRR, respectively. There was no significant difference between the groups in terms of monthly income (P>0.05). The average monthly cost for drugs by IDUs and non-IDUs was significantly different (2630500± 2474790 and 2084400 ± 1735510, respectively) (P<0.001).

The average age of onset of drug use among IDUs was significantly lower than non-IDUs (18.91 ± 6.14 and 24.83 ± 8.40 years old, respectively) (P<0.001). The duration of drug use among IDUs and non-IDUs respectively was 195.56 ± 26.45 and 139.60 ± 95.55 months which was significantly different (P<0.001).

Addiction relapse and slip during treatment in IDUs referred to drug rehabilitation centers was 23.83% and 49.71%, respectively. Addiction relapse and slip in non-IDUs was 59.66% and 24.96%, respectively. There was a significant difference between the two groups in terms of relapse and slip during treatment (P<0.001).

In both groups, the first choice was to treat drug addiction in drug rehabilitation centers using agonist. Drug treatment in camps was the next choice.

Pleasure, family and psychological problems and curiosity were three motives for drug use in both groups. The main motivations of IDUs to refer drug rehabilitation centers include the treatment of psychiatric, financial and physical symptoms. However, the main reasons of non-IDUs include psychological side effects and physical problems and financial problems.

In both groups, the subjects experienced the first drug use in a friendly party. IDUs started drug use outdoor such as street and park while non-IDUs started drug use at home and family parties.

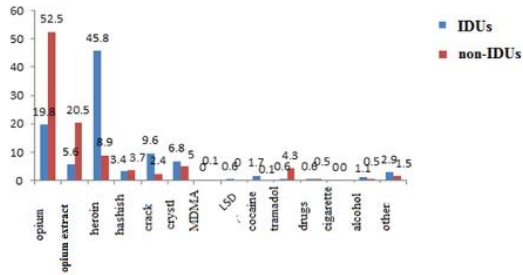
Variable	Non-IDUs Number(%)	IDUs Number(%)	P value
<b>Gender</b>			
Male	4088 (97.4)	173 (97.7)	<0.001
Female	107 (2.6)	4 (2.3)	
<b>Residence</b>			
Urban	3834 (91.4)	(9/49) 168	<0.001
Rural	350 (8.3)	9 (5.1)	
Nomadic	11 (0.3)	0	
<b>Education level</b>			
Illiterate	175 (4.2)	10 (5.7)	<0.001
Elementary	618 (14.9)	38 (21.8)	
Middle school	1264 (30.4)	61 (35.1)	
High school	1522 (36.3)	52 (29.9)	
Academic	572 (13.8)	13 (7.5)	
Religious	9 (0.2)	0 (0)	
<b>Marital status</b>			
Single	924 (22.2)	77 (44.3)	<0.001
Married	3078 (74)	80 (46)	
Divorced	109 (2.6)	11 (6.3)	
Dead spouse	42 (1)	6 (3.4)	
Sexual relation without marriage	8 (0.2)	0 (0)	

The history of shared injection, imprisonment, risky sexual behaviors, viral infections and suicide was 27.1, 54.3, 14.8, 23.2 and 11.93%, respectively. A seen in Table 2, there is a significant difference between IDUs and non-IDUs in terms of risky behaviors (P<0.001).

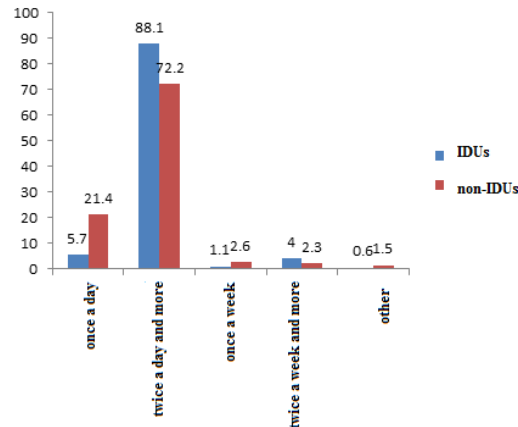
Variable	Non-IDUs Number (%)	IDUs Number (%)	P Value
<b>History of shared injection</b>			
Yes	0	48 (27.1)	<0.001
No	4192 (100)	129 (72.9)	
<b>History of imprisonment</b>			
Yes	140 (3.3)	95 (54.3)	<0.001
No	4052 (96.7)	80 (45.7)	
<b>Risky sexual behaviors</b>			
Yes	151 (3.6)	26 (14.8)	<0.001
No	4034 (96.4)	150 (85.2)	
<b>Suicide</b>			
Yes	123 (2.94)	21 (11.93)	<0.001
No	4054 (97.05)	155 (88.07)	
<b>Sexually transmitted infections</b>			
Yes	25 (0.6)	41 (23.2)	<0.001
No	4161 (99.4)	136 (76.8)	

According to the results, the most common drugs used by IDUs include opium (52.5%), opium extract (20.5%) and heroin (8.9%). However, the most common drugs used by non-IDUs include heroin (45.8%), opium (19.8%) and crack (9.6%) (Figure 1).

The addicts in both groups used drugs two or more times per day (Chart 2).



**Chart 1: The frequency of opioid drugs used by IDUs and non-IDUs**



**Chart 2: The frequency distribution of drug use intervals in IDUs and non-IDUs**

### Discussion

Risky behaviors refer to those behaviors that increase the risk of physical, psychological and social devastating consequences.[15] Currently, about 5-7% of Iranians use opioids. Of this, 5-10% are injecting drug users (IDUs). [16] Four percent of addicts in the present study and respectively 15.1, 21 and 37.3% of patients referred to addiction rehabilitation centers in studies conducted by Motakker [17], Karimi [18] and Haideri [19] were IDUs.

According to studies over the past two decades, the age of onset of drug use has declined in Iran and reached 20 years and sometimes even 8 years old.[20] According to Jalilian [21] and Mirhaidari [22], the age of onset of drug use is 14.36±4.97 and 17 years, respectively. In a study conducted by Shoghli on IDUs, the average age of onset of drug use was 24±5.4 years old. In our study, the age of onset of drug use by IDUs was 18.91±6.14 years old, i.e. about 6 years lower than non-IDUs. There is a significant difference between the two groups in terms of age of onset of drug use.

The most common drug used by IDUs in this study was heroin. The same result was reported by Shoghli [23] and Motazakker.[17] About half of IDUs in this study injected opium in the lack of access to heroin or crack. This is consistent with the results of Shoghli.[23]

According to Shoghli [23] and Motazakker [17], 93.4 and 23.5% of IDUs had a history of alcohol use. In the present study, IDUs reported a higher consumption rate than non-IDUs. In general, the frequency of alcohol use was minimal probably because of the lack of access to alcohol or due to cultural and social differences of the subjects.

Shared injection is a risky behavior among IDUs that puts addicts and those around them at the risk of infectious diseases, especially AIDS. In the current study, 27.1% of IDUs had a history of injection with shared needles. This is consistent with the results of Rafei [24]. Other studies show a

higher frequency of injection with shared needles among IDUs [16, 19, 27-25]. However, Motazakker [17] reported a very lower frequency of injection with a sharing syringe (1.5%).

Rapid Situation Assessment as the largest study on drug addiction in Iran shows that at least half of addicts had a history of a risky sexual intercourse with the opposite sex [28, 29]. In the present study, 14.8% of IDUs and 3.6% of non-IDUs had risky sexual behaviors. Karimi [18] found sex relationships outside the family in 19.8% of samples. Of this, 78% had an unprotected contact. According to Heidari et al., despite the use of MMT centers for reducing sexual risk behaviors, this reduction is less than reducing injection-related risky behaviors. Thus, MMT centers not only should focus on addiction rehabilitation, but also must consider harm reduction.[19] It seems that healthy and protected sexual behaviors (using condoms) should be trained.[28] In this regard, The World Health Organization introduces health education as the only effective method to prevent AIDS, especially in vulnerable groups.[22]

Literature indicates a high prevalence of drug abuse among offenders which can be a wakeup call to officials. On the one hand, drug abuse can be grounds for crime and on the other hand, drug use in prison can result in numerous health problems [21]. In the present study, 54.3% of IDUs had a history of imprisonment. The frequency of imprisonment in studies conducted by Motazakker [17] and Kafashian [30] was lower. According to Mardani *et al.* [31], more than 80% of prisoners had a history of drug injection.[31]

In this study, the majority of IDUs (88.1%) used drugs more than twice daily. According to Shoghli, 55.7% of IDUs used drugs four or more times daily.[23]

Several studies indicate that the rate of transmission of viral diseases such as hepatitis B and C and HIV is higher among prisoners with a history of injecting drug use.[32-34] A significant difference was found between IDUs and non-IDUs in terms of viral infections of hepatitis B, C and HIV ( $P<0.001$ ).

According to Amani [8] and Shoghli [23], the average duration of drug use was 10.7 and 12.1 years, respectively. In our study, the average duration of drug use by IDUs was significantly higher than non-IDUs (16.33 and 11.63 years, respectively) ( $P<0.001$ ).

### Conclusion

The prevalence of injecting drug use in Iran shows a growing trend in recent years. The results of various studies including the present study show that the change in the pattern of drug use puts individuals at the risk of committing risky behaviors such as the use of shared needles, risky sexual behaviors and sexually transmitted diseases. This not only threatens individual health, but also endangers public health. It is therefore essential that anti-drug policies pay special attention to harm reduction in addition to encouraging addicts to quit drugs.

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