



# Descriptive Aspects of Injection Drug Users in Iran's National Harm Reduction Program by Methadone Maintenance Treatment

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## Abstract

**Background:** The Ministry of Health, Treatment and Medical Education of Iran has recently announced an estimated figure of 200,000 injecting drug users (IDUs). The aim of this study was to pilot a national program using demographics, types of drug abuse and prevalence of blood-borne infections among IDUs.

**Methods:** In order to elicit data on demographics, types of drug abuse and prevalence of blood-borne infections among IDUs, a questionnaire was designed in the Bureau of Mental-Social Health and Addiction in collaboration with Iran's Drug Control Headquarters of the Police Department. Therapeutical alliance of addiction in Shafagh Center was based on Methadone Maintenance Therapy (MMT).

**Results:** Among 402 reported IDUs most of them were male, single and in age range of 20 to 39 years old with 72.7% history of imprisonment. Most of them had elementary and high school education and a history of addiction treatment. The majority were current users of opioid, heroin and crack. The prevalence of blood-borne infections was 65.9% and 18.8% for HCV and HIV/AIDS infections, respectively.

**Conclusion:** Prevention programs about harm reduction, treatment and counseling should include young IDUs as a core focus of their intervention structure.

**Keywords:** IDUs, Harm reduction, Methadone maintenance treatment, Iran

## Introduction

It is estimated that there are about 25 million people with drug dependence, while the population of injecting drug users (IDUs) are suggested to be around 15.9 million people worldwide (1). The Iranian Ministry of Health, Treatment and Medical Education has recently announced an estimated figure of 200,000 IDUs in Iran (2). Hence, this country has started a number of harm reduction programs for tackling HIV, HBV, and

HCV epidemics among IDUs (3-6). Studies in US and Saudi Arabia have revealed more prevalence of drug injection among the singles, young, males (7, 8). Concerning blood-borne infections among IDUs, there are several studies, which have shown the relationship between drug injection and HCV, HIV/AIDS prevalence (9, 10). A global study has revealed that the estimated prevalence of HCV among IDUs of 77 countries was between 60-80%

(11). In addition, a survey in US among 20 cities has shown that 9% of IDUs are HIV positive (12). Agonist maintenance programs with buprenorphine or methadone are among the highly successful interventions for limiting the transmission of blood-borne infections in drug users (13-16). Based on this information, it appears that maintenance programs should be expanded immediately, with any delay leading to disastrous consequences.

The objective of this study was to describe the demographics, types of drug abuse, and prevalence of blood-borne infections among IDUs in Tehran.

## **Methods**

A questionnaire was designed in the Bureau of Mental-Social Health and Addiction, Ministry of Health, Treatment and Medical Education, in collaboration with the Iran's Drug Control Headquarters of Police Department in 2008 (17,18).

Therapeutical alliance of addiction in Shafagh Center was based on maintenance therapy by methadone (19). The research team included 4 physicians, 4 psychiatrists, 3 nurses, 3 social workers, and one clinical psychologist who had the responsibility of treating and training the drug abusers. At a temporary detention center, they were screened for urine analysis and a physical examination for injection marks by an expert physician. Those who were recognized as IDUs were transferred to the rehabilitation center for 6 months for mandatory detoxification. A questionnaire was filled out for each individual by interview. The aim of interview was explained and patients who did not want to join the study were excluded. Informed consent was taken from the participants by the interviewers. Blood specimens were collected for HIV/HCV testing (20, 21).

Upon entrance to the rehabilitation center, the detainees were offered the option of participating in our study. After providing informed consent, a questionnaire was completed for each individual via a face-to-face interview by 3 social workers and one clinical psychologist. The questionnaire

included socio-demographic characteristics, imprisonment history, addiction treatment history, substance abuse practices and sero-prevalence of HIV/ HCV in the study population.

After accomplishment of the interview, blood samples were collected by a professional phlebotomist for HIV and HCV antibody analysis for those who agreed to take part in the blood test. Serological specimens were analyzed with an Enzyme Linked Immuno Sorbent Assay (ELISA) for HIV antibodies (Biotest AG, Germany) and confirmed by Western blot analysis (Diagnostic, Germany). HCV antibodies screening test were also performed (DiaSorin, Spain). HCV RNA testing was not conducted due to cost restrictions. While it is recognized that HCV antibody sero-positivity may not indicate present infection, the term HIV/HCV co-infection was used for simplicity (22, 23).

## **Statistic analysis**

Data was evaluated in the software package for social science (SPSS, version 16). Descriptive indices were calculated and reported. Chi square was used to analyze the history of treatment. P values lower than 0.05 were considered significant.

## **Results**

From a total number of 402 reported IDUs, 386 (96.5%) of the subjects were men and the majority 295 (76.2%) were single and male. Most of subjects were in age range of 20 to 39 years old. The mean age was 28.78 years old with a minimum and maximum of 13 and 62 years old, respectively. Concerning the hometown of the subjects, 161 (60.8%) were from Tehran and 143 (37.0%) were homeless. The majority, 339 (87.1%) had elementary and high school education and 15 (3.9%) subjects were illiterate. Among the subjects, 328 (85.2%) were employed.

The beginning age of addiction in most participants was  $\leq 20$  years old and the mean age was 21.21 years old with a minimum and maximum of 17 and 53 years old, respectively (SD = 6.363). 213 (57.1%) participants had had an addiction for

more than 5 years. Most of them had history of addiction treatment (316 (82.5%),  $P < 0.05$ ) and 104 (30.7%) were under physician observation (24). The majority of these IDU's had prison history, i.e. 277 (72.7%) subjects (Table 1).

Most subjects were current users of cigarettes followed by opioid and heroin (Table 2). Totally 258 subjects took the voluntary HIV/HCV tests. Among them 50 (18.8%) had HIV/AIDS, 168 (65.9%) were screen positive for HCV antibody.

**Table1:** Sociodemographic variables among IDUs <sup>a</sup>

| Variables                   | Total<br>n =402(%) |
|-----------------------------|--------------------|
| <b>Sex</b> (399)            |                    |
| Male                        | 386 (96.5)         |
| Female                      | 14 (3.5)           |
| <b>Age (years)</b> (382)    |                    |
| 20-29                       | 148 (38.7)         |
| 30-39                       | 164 (42.9)         |
| ≥ 40                        | 70 (18.3)          |
| <b>Marital Status</b> (387) |                    |
| Single                      | 295 (76.2)         |
| Married                     | 92 (23.8)          |
| <b>City</b> (265)           |                    |
| No Tehran                   | 104 (39.2)         |
| Tehran                      | 161 (60.8)         |

|  |            |
|--|------------|
| <b>Educational level</b> (389)                         |            |
| Illiterate   | 35 (9.0)   |
| Primary/ Secondary school                              | 239 (61.4) |
| High school  | 100 (25.7) |
| University   | 15 (3.9)   |
| <b>Status of home</b> (386)                            |            |
| Having home  | 234 (63.0) |
| Homeless   | 143 (37.0) |
| <b>Occupation</b> (385)                                |            |
| Yes  | 328 (85.2) |
| No   | 57 (14.8)  |
| <b>Addiction beginning age</b> (382)                   |            |
| ≤ 20   | 220 (57.6) |
| 21 – 30  | 129 (33.8) |
| ≥ 31   | 33 (8.6)   |
| <b>Addiction duration</b> (years) (370)                |            |
| ≤ 5  | 160 (42.9) |
| 6≥   | 213 (57.1) |
| <b>Addiction treatment history</b> (383)               |            |
| No   | 67 (17.5)  |
| Yes  | 316 (82.5) |
| <b>Treatment history Under physician observe</b> (339) |            |
| Yes  | 104 (30.7) |
| No   | 235 (69.3) |
| <b>Prison history</b> (381)                            |            |
| Yes  | 277 (72.7) |
| No   | 104 (27.3) |

<sup>a</sup> Significant at  $P < 0.05$

**Table2:** Drug reported among IDUs

| Drugs reported (local name) (402) | Yes<br>n (%) | No<br>n (%) |
|-----------------------------------|--------------|-------------|
| Cigarette                         | 385 (99.0)   | 4 (1.0)     |
| Opioid                            | 321 (82.3)   | 69 (17.7)   |
| Heroin                            | 259 (66.4)   | 131 (33.6)  |
| Crack                             | 228 (63.2)   | 133 (36.8)  |
| Cannabis                          | 174 (44.6)   | 216 (55.4)  |
| Sedative                          | 117 (30.0)   | 273 (70.0)  |
| Shireh                            | 64 (16.4)    | 326 (83.6)  |
| Hollocinogen                      | 18 (4.6)     | 372 (95.4)  |
| Norchizak                         | 17 (4.3)     | 381 (95.7)  |
| Cocaine                           | 11 (2.8)     | 379 (97.2)  |
| Amphetamine                       | 11 (2.8)     | 379 (97.2)  |
| Illegal Methadone                 | 8 (2.1)      | 382 (97.9)  |
| Shishah                           | 4 (1.0)      | 386 (99.0)  |

## Discussion

Descriptive aspects of demographic and behavior characteristics among IDUs who took part in MMT program was addressed in this study. Concerning demographics, the gender, age and marital status were analyzed. Drug injection was more prevalent in males of young age with single marital status. This indicates that in Iran, women are less likely substance abusers (25, 26). Other studies also have shown that men have a higher risk behavior (27).

The age-specific analysis of the subjects suggested that prevalence of drug injections are increasing when the age group reaches 39 years old. The study has demonstrated that young people and singles are at higher risk for drug injection (28). Young male and female drug abusers had higher patterns of initiation (29). Another study in Saudi Arabia among 116 addicts who had referred to the clinical and rehabilitation centers, found that the age range of the abusers was between 21 to 32 years old (8). Socioeconomic status was the other objectives of this survey. In our study, only 9% of subjects were illiterate. Most of them had a primary/secondary school degree, which can be result of quitting the education before high school (61.4%). In addition, 25.7% had high school degree. A study in New York demonstrated that 52% of drug abusers had at least a high school degree or the equivalent (30). In this study 37% of the cases were reported as homeless, which has been recognized as a major determinant of poor health among IDUs (31). The majority of these IDU's had prison history, showing that men with a history of imprisonment are much more likely to inject drugs than men without history of imprisonment had.

Blood-borne infection was another problem facing IDUs. The HCV infection in our consecutive samples of IDUs on entry into detention was astonishingly high: overall 65.9%. Our estimates are among the highest in the world and, to our knowledge, the highest recorded in Iran, to date (32, 33). For example, in the late 1990s, HCV prevalence among drug-using prisoners in Hamadan, Iran, was 7.3% with higher prevalence among

IDUs (34). Opium was the first drug of use among 46.4% of the subjects. IDUs are at risk of HIV and display more instances of criminal and antisocial behaviors. Many studies, demonstrate a significant link between HIV infection and injection drug use (35). In a study by Rahimi-Movaghar in Tehran, the prevalence of HIV in IDUs was reported 10.7%. The risk of HIV infection in IDUs was 13.27 times higher than the control group (36).

World experience has shown that rapidly starting a comprehensive program comprised of extensive psycho-education, needle exchange and low threshold maintenance treatment will effectively blunt and limit HIV epidemics in countries with similar drug scenes (37). In addition, participating in MMT has been shown to reduce the risk of acquiring blood-borne infection in communities experiencing high rates of transmission (33). In 2004, Iran's Ministry of Health, Treatment and Medical Education launched a pilot program that integrated harm reduction into the existing primary healthcare services in a rural area. The evaluation suggested that distribution of harm reduction materials had a great potential as an HIV prevention intervention in rural areas of Iran. (38). Thus, the reduction in the incidence rate among IDUs suggests that harm reduction measures initiated from the late 1980s were effective in reducing HIV transmission in this risk group (39, 40).

## Conclusion

We conclude with some suggestions for action: (1) Prevention programs including harm reduction programs, treatment programs, and counseling centers should include young IDUs as a core focus of their intervention structure; (2) Funding of such programs should be increased.

## Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submis-

sion, redundancy, etc) have been completely observed by the authors.

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