



Profile of Injection Drug Users in Kermanshah, Iran

Hamid Gheibipour¹, Soheila Khodakarim², Asaad Sharhani³, Koorosh Etemad⁴, Abolghasem Shokri^{**}

¹Department of Epidemiology, School of Public Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

²Assistant Professor of Biostatistics, Department of Epidemiology, School of Paramedical Sciences, School of Public Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

³Assistant Professor of Epidemiology, Department of Epidemiology, School of Public Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Student Research Committee, Kermanshah University of Medical Sciences, Kermanshah, Iran.

⁴Assistant Professor of Epidemiology, Department of Epidemiology, Environmental and Occupational Hazards Control Research Center, School of Public Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Abstract

Background and aims: Injection drug use is considered as an international public health threat that can lead to serious health-related outcomes. The aim of this study was to obtain a profile of injection drug users (IDUs) in Kermanshah, Iran, in 2017.

Methods: This cross-sectional study was carried out on 606 male IDUs who were recruited from 2 drop-in centers in Kermanshah using a snowball sampling method. Continuous and categorical variables are expressed as the mean and standard deviation, as well as frequency and percentage, respectively.

Results: The mean age of participants in this study was 36.7 ± 8.51 years and at first drug injection was 29.35 ± 8.04 years. In addition, the highest frequency of injection drugs belonged to heroin (99.00%), methamphetamine (86.00%), and opium (85.00%), respectively. However, the lowest injection drugs were opium syrup (0.50%), ecstasy (0.50%), and amorphine (0.20%).

Conclusion: Based on the findings of this study, heroin, methamphetamine, and opium had the highest frequency injection among male IDUs in Kermanshah, and the age of the first drug injection was low among these individuals. Accordingly, wider coverage prevention programs are highly recommended, including harm reduction programs, counseling centers with improved quality of services, treatment programs, and greater attention to *human resource development*-based counseling and education.

Keywords: Risk behaviors, Injection drug users, Profile, Opium

*Corresponding Author:

Abolghasem Shokri,
Tel: 0098 912 8161097
Email: epidemiology.shokri@sbmu.ac.ir

Received: 29 December 2019
Accepted: 14 July 2020
Published: 28 September 2020



Introduction

Injecting drug use is considered as an international public health threat that can cause serious health-related outcomes such as the transmission of blood-borne viruses resulting from risky behaviors among people who inject drugs (PWIDs).¹ PWIDs are at a higher risk for infectious diseases such as hepatitis C virus (HCV), human immune deficiency virus, and hepatitis B virus,² and more than a second of drug injectors are infected with HCV in some parts of the world.³ According to the annual World Health Organization report for 2008, approximately 200 million people in the world were addicted to opiates and the highest prevalence rate of opiate abuse (2.8%) was observed in the Iranian population aged 15–46 years.⁴ In addition, the injection has increased in two past decades in Iran and has become a major medical concern.⁵ It is estimated that there are approximately 200–300 000 injectors in Iran.⁶ The pattern of drug use is different in the world and hashish has the largest number of consumers, most of whom are in the United States and Western Europe.

Amphetamines in South Asia, cocaine in North America and the West and the Center for Europe, and opium in Afghanistan have the highest levels of use.⁷ Further, opium and its derivatives are the most consumed drugs in Iran.⁸ It seems that the pattern of drug abuse in Iran has changed extensively and the younger generation has been pushed into industrial and semi-industrial materials with higher degradation effects, including glass and heroin.⁹ Therefore, this study investigated the pattern of drug abuse and their hazardous behaviors among the males who inject drugs in Kermanshah. Relevant authorities can be guided for fundamental policy-making and planning through this research in addition to gaining knowledge of the epidemiological situation and pattern of drug use in Kermanshah.

Materials and Methods

Design and Participants

This cross-sectional study was conducted from September to November 2017. A convenience sample including

606 male injection drug users (IDUs) from Kermanshah, within the age range of 18 and over and self-reporting at least 1 drug injection in the month before the interview were recruited from 2 drop-in centers affiliated to Kermanshah University of Medical Sciences, as well as related community outreach sites in Kermanshah (west of Iran). In this study “Drug” refers to any illicit substance except for cannabis. All participants provided a written consent form.

Sampling Method and Data Collection Instrument

Data were collected by trained interviewers during face-to-face interviews. Snowball sampling, estimating the size of hidden populations using a snowball sampling technique, was performed and data were collected using a questionnaire. The applied instrument consisted of demographic information on participants’ age, marital status, occupation, educational level, and the kind of abused drugs, the route of abuse, age at first injection and use, along with the duration of injection and use.

Statistical Analysis

Continuous variables are expressed as the mean \pm standard deviation (SD), and categorical variables are presented as the number and percentage. All data were analyzed using SPSS software, version 21 (IBM Corp, Armonk, NY).

Results

Socio-demographic Profile

A total of 606 male IDUs participated in the study. Table 1 presents the socio-demographic characteristics of the sample population. Although the participants’ ages ranged from 18 to 65 years, the mean \pm SD was 36.7 ± 8.51 years, and 51.30% of participants aged over 35 years. Furthermore, the mean \pm SD years of education was 8.4 ± 3.89 . In this study, 372 participants (61.5%) were single while 135 of them (22.3%) were divorced and widowed. Moreover, 49 participants (8.1%) were illiterate and 6 of them (1.0%) had a college education.

Additionally, 158 participants (26.1%) were homeless, and more than 33.4% of subjects lived alone at the time of data collection. Similarly, the income source of 42.1% of the sample was temporary jobs. Finally, 202 (34.4%), 240 (39.7%), and 95 (15.7%) of them lived alone, with parents, and spouses, respectively.

Pattern of Drug Use

In this study, the age of the first drug use was under 20 years among 408 (67.3%) of participants and 466 (76.9%) of participants had a history of drug use above 10 years.

In addition, the highest age range of the first drug injection of participants was related to the age group of over 30 years and 299 (37.8%) of participants had under 3 years of the injection drug experience while 377 (62.2%) of them had more than 3 years of injection drug experience.

Table 1. Demographic Characteristics of Male IDUs in Kermanshah

Variable (N)		No. (%)
Age (year) (606)	<20	9 (1.5)
	21-25	36 (5.9)
	26-30	101 (16.7)
	31-35	149 (24.6)
	>35	311 (51.3)
Current marital status (605)	Single	372 (61.5)
	Married	98 (16.2)
	Other	135 (22.3)
Years of fulltime education (606)	≤ 5	174 (28.7)
	6-8	90 (14.9)
	≥ 9	342 (56.4)
Main source of income (606)	Illegal income	12 (2.0)
	Temporary work	225 (42.1)
	Permanent work	28 (4.6)
	Other	341 (51.3)
Living with (605)	Alone	202 (33.4)
	Parents	240 (39.7)
	Spouse	95 (15.7)
	Other	68 (11.2)
	Personal	47 (7.4)
Place of residence status (home) (606)	Rented	93 (15.3)
	Father’s home	247 (40.8)
	Shelter	55 (9.1)
	Street	158 (26.1)
	Other	6 (1.0)
Homelessness (606)		158 (26.1)

Note. IDUs: Injection drug users.

In the present study, 219 (36.3%), 160 (26.5%), and 225 (37.2%) of participants had drug injection once, twice, and 3-8 times a day, respectively. Further, 340 (56.1%) of participants had a history of sharing equipment, 11 (1.8%) of them had a history of sharing needle/syringe, and 470 (77.6%) of them had a history of imprisonment. The place of the first injection among 169 (28.2%), 78 (13%), 321 (53.5%), and 32 (5.5%) of participants was home, street/parks, and shelter, respectively. Furthermore, 485 (80/3%) of participants almost injected drugs in parks/shelters and 119 (19.7%) of them approximately injected the drug at home (Table 2).

Profile of Injecting Drugs in Kermanshah

In this study, heroin was the highest used drug. In general, 600 (99%) out of a total of 606 participants used heroin with a mean age of first use (MAFU), a mean year of drug use (MYDU), a mean number of drug use days in the last month (MNDUDLM), and a mean number of drug injection days in the last month (MNDUDLM) of 25.81 ± 7.35 years, 8.91 ± 7.51 years, 29 ± 5.00 times, and 66.87 ± 44.75 times, respectively (Table 3).

In the next step, methamphetamine was the highest used drug among participants (86%) with a MAFU, MYDU, MNDUDLM, and MNDIDLM of 29.40 ± 7.88 years,

Table 2. Drug* Use Patterns and Injection Behavior Among Male IDUs in Kermanshah

Variable	No. (%)	
Age at first drug use (606)	≤20	408 (67.30)
	21-25	156 (25.70)
	26-30	32 (5.30)
	>30	10 (1.70)
Mean age±SD at first drug use	19.56±4.60	
Years of drug* use (606)	<5	36 (5.90)
	5-10	104 (17.20)
	>10	466 (76.90)
Age at first drug injection (606)	<20	78 (12.90)
	21-25	131 (21.60)
	26-30	181 (29.90)
	>30	216 (35.60)
Mean age±SD at first drug injection	29.35 (8.04)	
Years of injection drug use	≤3	229 (37.80)
	>3	377 (62.20)
Frequency of any drug injection per day (604)	Almost one daily	219 (36.30)
	Almost 2 times a day	160 (26.50)
	3 to 8 times a day	225 (37.20)
Sharing equipment in the last month (606)		340 (56.10)
Sharing needle/syringe in the last month (595)		11 (1.80)
Sharing other injection (594)		5 (0.80)
History of prison (606)		470 (77.60)
Place of the first injection (600)	Home	169 (28.20)
	Street/parks	78 (13.00)
	hangout/ruin	321 (53.50)
	Shelter/residential center	32 (5.50)
Place injecting almost (604)	Home	119 (19.70)
	Park/ruin	485 (80.30)

Note. IDUs: Injection drug users; * "Drug" refers to any illicit substance except for cannabis.

4.83±3.23 years, 25.88±9.30 times, and 0.88±0.34 times, respectively. Subsequently, opium, crack, methadone, hashish, norjissak, alcohol, tramadol, benzo, buprenorphine, opium syrup, ecstasy, and amorphine were the most commonly used drugs while the lowest drug use was related to amorphine, ecstasy, and opium syrup.

Discussion

The present study assessed the demographic characteristics, patterns of drug use, and risky behaviors among male IDUs in Kermanshah.

The assessment of the socioeconomic indicators of male IDUs showed that about half of them have education less than eight years and about one-third of these individuals had no stable residence. Thus, PWIDs are considered as a disadvantaged population throughout the Middle East and North Africa region.¹⁰ The majority of participants in this study were over 35 years old. In another study conducted in Mazandaran and Tehran (two industrial cities located in northern and central Iran), the participants' maximum

age range was 30-34 years.¹¹ This suggests that the geographical area and access to drugs have a significant role in reducing the initiation of illicit drug use. In the present study, the mean age of drug injectors was 36 years and the mean age at the first drug use was 19.56 years, which is consistent with the findings of an earlier study where the corresponding numbers were 35 and 20 years, respectively.¹² The study demonstrated that around 61% of male IDUs were singles, which is in line with the results of a study done by Eskandarieh et al in Birjand.¹³ The average age at the first drug use reported in another study was 22 years.¹⁴

In the present study, most male IDUs had secondary school education and 28.7% of them had primary school level of education. The high preponderance of addiction cases in those with high school or lower education is corroborated with the findings of other studies in Iran.^{12,15}

However, around 22% of participants in this study did not have any history of imprisonment, about half of them had fixed residence and lived with their parents and spouses, and finally, around 47% of them had work and received legal incomes. These characteristics of participants showed that there are some groups of male IDUs who have better socioeconomic status, have a stable life, and are integrated in the society while not having illegal activities. The results of this study and two other studies in Iran demonstrated that PWIDs had different characteristics and may require different services.^{6,16} In the present study, individuals most commonly used drugs such as heroin, methamphetamine, and opium. In the study of Behdani in Mashhad, methamphetamine and opium were commonly used among individuals. Compared to previous studies, the age pattern of our sample (mean = 36.8 years) demonstrated a stable trend of the population who had injected drugs in Iran within the past decades.^{17,18} Despite the increase in the prevalence of injecting drug use in Iran, the age pattern of the population who inject drugs has remained stable.¹⁹

In this study, 26.1% of participants were reported as homeless, which has been recognized as a major determinant of poor health among IDUs.²⁰ Eventually, the majority of these PWIDs had prison history (77.6%), showing that men with a history of imprisonment are much more likely to inject drugs compared to those men without a history of imprisonment.

Conclusion

Based on the findings of this study, heroin, methamphetamine, and opium had the highest frequency of injection among male IDUs in Kermanshah, and the age of the first drug injection was low among them. According to the results of the present study, single, educated, and young individuals, those with a history of imprisonment, and those whose age range was low at the first drug use are at the risk of drug injectors and are considered as vulnerable

Table 3. Drug of Use, MAFU, MYDU, MNDUDL, and MNDIDL Among Male IDUs in Kermanshah

Type Substance Use (N=606)	No. (%)	MAFU (SD)	MYDU (SD)	MNDUDLM (SD)	MNDIDL (SD)
Heroin	600 (99.00)	25.81 ± 7.35	8.91 ± 7.51	29 ± 5.00	66.87 ± 44.75
Methamphetamine	521 (86.00)	29.40 ± 7.88	4.83 ± 3.23	25.88 ± 9.30	0.88 ± 0.34
Opium/sookhteh crack	515 (85.00)	20.21 ± 4.10	4.95 ± 6.17	0.68 ± 4.26	-
Methadone	271 (44.70)	29.28 ± 8.25	2.77 ± 1.67	0.35 ± 3.15	0.77 ± 8.33
Hashish/grass	231 (38.10)	32.74 ± 8.12	2.59 ± 6.10	4.32 ± 9.50	-
Norjissak	192 (31.70)	17.88 ± 3.34	3.36 ± 4.59	1.03 ± 4.87	-
Alcohol	116 (19.10)	26.62 ± 5.52	1.79 ± 1.03	0.77 ± 4.78	0.77 ± 4.78
Tramadol	105 (17.30)	17.69 ± 8.19	5.28 ± 9.82	0.43 ± 2.44	-
Banzo	67 (11.20)	23.30 ± 7.18	4.70 ± 14.85	2.64 ± 7.92	0.44 ± 3.63
Buprenorphine	18 (3.00)	23.88 ± 8.82	10.72 ± 19.92	10.27 ± 13.11	-
Opium syrup	12 (2.00)	25.00 ± 9.22	2.75 ± 4.35	2.58 ± 8.63	-
Ecstasy	3 (0.50)	33.3 ± 3.05	1.33 ± 0.57	-	-
Amphorphine	3 (0.50)	22.00 ± 3.00	3.33 ± 3.21	10.00 ± 17.32	-
	1 (0.20)	25.00 ± 0.00	1.00 ± 0.00	30.00 ± 0.00	60.00 ± 0.00

Note. MAFU: Mean age of first use; MYDU: Mean years of drug use; MNDUDLM: Mean number of drug use days in the last month; MNDIDL: Number mean of injection days in the last month; SD: Standard deviation.

people in society. Therefore, these people should receive more attention, and thus further prevention programs are highly recommended, including harm reduction programs, counseling centers with improved quality of services, and treatment programs.

Conflict of Interest Disclosures

The authors declare that they have no conflicts of interests.

Ethical Approval

This study was obtained from a master's thesis in epidemiology, which was conducted by a grant (No. IR.SBMU.PHNS.REC.No,95519.) given by Sahid Behesti University of Medical Sciences. The Ethics Committee of Sahid Behesti University of Medical Sciences approved the study.

Authors' Contributions

All authors equally contributed to this project and read and approved the final manuscript.

Acknowledgements

The authors would like to thank all participants in addition to reviewers and the editor for their helpful comments that substantially improved the manuscript.

References

- Mathers BM, Degenhardt L, Phillips B, Wiessing L, Hickman M, Strathdee SA, et al. Global epidemiology of injecting drug use and HIV among people who inject drugs: a systematic review. *Lancet*. 2008;372(9651):1733-45. doi: 10.1016/s0140-6736(08)61311-2.
- Workowski KA, Berman S. Sexually Transmitted Diseases Treatment Guidelines, 2010. Atlanta, GA: Centers for Disease Control and Prevention; 2010.
- Nelson PK, Mathers BM, Cowie B, Hagan H, Des Jarlais D, Horyniak D, et al. Global epidemiology of hepatitis B and hepatitis C in people who inject drugs: results of systematic reviews. *Lancet*. 2011;378(9791):571-83. doi: 10.1016/s0140-6736(11)61097-0.
- United Nations Office on Drugs and Crime (UNODC). World Drug Report 2008. 13th ed. Vienna: UNODC; 2008.
- Rahimi-Movaghar A, Rad Goodarzi R, Izadian E, Mohammadi MR, Hosseini M, Vazirian M. The impact of Bam earthquake on substance users in the first 2 weeks: a rapid assessment. *J Urban Health*. 2005;82(3):370-7. doi: 10.1093/jurban/jti089.
- Razzaghi EM, Rahimi-Movaghar A, Green TC, Khoshnood K. Profiles of risk: a qualitative study of injecting drug users in Tehran, Iran. *Harm Reduct J*. 2006;3:12. doi: 10.1186/1477-7517-3-12.
- United States Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Office of Applied Studies. Results from the 2002 National Survey on Drug Use and Health: National Findings. Rockville, MD: HHS, SAMHSA, Office of Applied Studies; 2003.
- Ziaaddini H, Ziaaddini MR. The household survey of drug abuse in Kerman, Iran. *J Appl Sci*. 2005;5:380-2. doi: 10.3923/jas.2005.380.382.
- Shariat SV, Elahi A. Symptoms and course of psychosis after methamphetamine abuse: one-year follow-up of a case. *Prim Care Companion J Clin Psychiatry*. 2010;12(5). doi: 10.4088/PCC.10l00959gry.
- Rahimi-Movaghar A, Amin-Esmaeili M, Aaraj E, Hermez J. Assessment of Situation and Response to Drug Use and its Harms in the Middle East and North Africa, 2012. (<http://www.mei.edu/content/map/drug-use-and-harmreduction-mena-region-and-lebanon>). Accessed May 2016, 16.
- Meysamie A, Sedaghat M, Mahmoodi M, Ghodsi SM, Eftekhari B. Opium use in a rural area of the Islamic Republic of Iran. *East Mediterr Health J*. 2009;15(2):425-31.
- Goodarzi F, Mehrpour O, Eizadi-Mood N. A study to evaluate factors associated with seizure in tramadol poisoning in Iran. *Indian J Forensic Med Toxicol*. 2011;5(2):66-9.
- Eskandarieh S, Nikfarjam A, Tarjoman T, Nasehi A, Jafari F, Saberi-Zafarghandi MB. Descriptive aspects of injection drug users in Iran's national harm reduction program by methadone maintenance treatment. *Iran J Public Health*. 2013;42(6):588-93.
- Karrari P, Mehrpour O, Afshari R, Keyler D. Pattern of illicit

- drug use in patients referred to addiction treatment centres in Birjand, Eastern Iran. *J Pak Med Assoc.* 2013;63(6):711-6.
15. Ahmadi J, Hasani M. Prevalence of substance use among Iranian high school students. *Addict Behav.* 2003;28(2):375-9. doi: 10.1016/s0306-4603(01)00246-5.
 16. Amin-Esmaeili M, Rahimi-Movaghar A, Gholamrezaei M, Razaghi EM. Profile of people who inject drugs in Tehran, Iran. *Acta Med Iran.* 2016;54(12):793-805.
 17. Rafiey H, Narenjiha H, Shirinbayan P, Noori R, Javadipour M, Roshanpajouh M, et al. Needle and syringe sharing among Iranian drug injectors. *Harm Reduct J.* 2009;6:21. doi: 10.1186/1477-7517-6-21.
 18. Malekinejad M. *Assessment of The Use of Respondent-Driven Sampling for Studying Populations Most at Risk of HIV Infection.* University of California, Berkeley; 2008.
 19. Rahimi-Movaghar A, Mohammad K, Razaghi EM. Trend of drug abuse situation in Iran: a three-decade survey. *Hakim Res J.* 2002;5(3):171-81.
 20. Galea S, Vlahov D. Social determinants and the health of drug users: socioeconomic status, homelessness, and incarceration. *Public Health Rep.* 2002;117(Suppl 1):S135-45.