ResearchGate

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/51502113

A Comparative Study of Characteristics and Risky Behaviors Among the Iranian Opium and Opium Dross Addicts

Article *in* Journal of Addiction Medicine · March 2011

DOI: 10.1097/ADM.0b013e3181db69ef · Source: PubMed

CITATIONS
11

READS
155

10 authors, including:

Ashkan Heshmatzadeh Behzadi
Yale University/Bridgeport Hospital
65 PUBLICATIONS **557** CITATIONS
SEE PROFILE

Mahsa Sedaghati
Stanford University
6 PUBLICATIONS **31** CITATIONS
SEE PROFILE

Sepideh Akbaripanahi
Massachusetts General Hospital
2 PUBLICATIONS **20** CITATIONS
SEE PROFILE

Amirpoya Akasheh
Ludwig-Maximilians-University of Munich
3 PUBLICATIONS **38** CITATIONS
SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Acute Reactions to Gadolinium Based Contrast Agents: a Meta-Analysis View project

Use of image guidance in endoscopic endonasal surgeries: A 5-year experience View project

All content following this page was uploaded by Mahsa Sedaghati on 06 September 2017.

The user has requested enhancement of the downloaded file.

A Comparative Study of Characteristics and Risky Behaviors Among the Iranian Opium and Opium Dross Addicts

Sima Noohi, MD, Mahyar Azar, MD, Ashkan Heshmatzade Behzadi, MD, Mahsa Sedaghati, MD, Sepideh Akbari Panahi, MD, Nasir Dehghan, MD, Yasamin Honarbakhsh, MD, Amirpoya Akasheh, MD, Armin Tahoori, MD, and Denis Wilson, MS

Background: Iran ranks first per capita in the use of opiates, but we have little information about possible differences regarding the 2 most commonly used illicit drugs, namely opium and its dross (residue).

Design: This is a cross-sectional study.

Setting: A cross-sectional study about drug abuse and drug dependence in Iran was conducted from April 2006 to August 2008 in the prisons of 28 Iranian provinces, in the treatment centers, and in the streets.

Participants: To pursue the objectives of this research, participants included 2979 opiate addicts including opium users (n = 2636) and dross users (n = 343), who were not significantly different by gender ($P = 0.269$) or age ($P = 0.452$).

Measurements: An anonymous questionnaire was completed through an interview that gathered sociodemographic characteristics and information about some high-risk behaviors.

Result: By the end of the study, we concluded that dross addicts, in comparison with opium addicts, were mostly immigrants from rural areas to urban areas ($P = 0.031$ χ^2 test, 95% confidence interval [CI]), mostly uneducated, illiterate, or semiliterate ($P = 0.04$ χ^2 test, 95% CI), had illegal occupations ($P = 0.048$ χ^2 test, 95% CI), were cigarette smokers ($P < 0.000$ χ^2 test, 95% CI), and had experienced drug injections ($P = 0.032$ χ^2 test, 95% CI) and drug overdose ($P = 0.007$ χ^2 test, 95% CI). They also had a history of hospital admission within the preceding year because of drug overdose ($P < 0.000$) and a record of being arrested and jailed in the past year ($P = 0.028$ χ^2 test, 95% CI).

Conclusion: These results indicated the need for more intensive and effective care for the opioid addicts in Iran.

From the Department of Psychiatry, Behavioral Research Center (SN), Baqiyatallah University of Medical Sciences, Tehran, Iran; Department of Psychiatry, Shaheed Beheshti University of Medical Sciences and Health Services (MA), Tehran, Iran; Department of Psychiatry, Behavioral Science Research Center (MS), Brunnel University West London, Uxbridge, West London, United Kingdom; Behavioral Research Center, Psychiatry Department, Iran University of Medical Sciences (AHB, SAP, ND, YH, AA, AT), Tehran, Iran; and Psychology Department, San Fransisco State University (DW), San Fransisco, CA.

Received for publication October 11, 2009; accepted March 1, 2010.

Send correspondence and reprint requests to Ashkan Heshmatzade Behzadi, No. 5/2, Amir Hamzeh, Alamdari Street, Bahar Shomali Avenue, 7th Tir Sq., Tehran 15647-67411, Iran. e-mail: ashkan_hbehzadi@yahoo.com

Copyright © 2011 American Society of Addiction Medicine

ISSN: 1921–0629/11/0501-0074
DOI: 10.1097/ADM.0b013e3181db69ef

Key Words: addiction, opium, opium dross

(*J Addict Med* 2011;5: 74–78)

Substance abuse is one of the most complicated health problems worldwide with a different consumption pattern of substances in each country (Ghodse, 1995). Asian countries continue to be the major producers of illicit opiates, and abuse of those drugs is the main problem in this region (Ghodse, 1999; Ziaaddini and Ziaaddini, 2005).

Indeed, the use of opiates is not a novel issue and has been present in Iran for centuries; it has in modern times become a malignant social phenomenon causing widespread social, psychologic, familial, and economic damage (Razzaghi et al., 1999). Most of the opiate users (estimated approximately 7.5 million or half of the world's total opiate abusing population) are found in Asia, primarily in the countries around Afghanistan and Myanmar. The highest prevalence rates have been reported in Iran, the Lao PDR, and Kyrgyzstan (UNODCCP, 2003). World Health Organization reported that in the Islamic Republic of Iran, 1.7% to 2.8% of the population aged 15 years and older abuse opiates (UNODCCP, 2003). Opiates are the main drugs being abused in Iran. Opium itself is in the first rank, and its residue called "dross" is in the second rank, which contains a large percentage of morphine (Ahmadi et al., 2006). Mixing additional opium with the dross and then evaporating the mixture will heighten the narcotic effects. In South-East Asia, this is the practice among hill-tribes in the northern part of the Laos and in Vietnam (UNDCP 1999a, b, 2001a; UNODCCP 2001). Opium dross or residue, known in Persian as "shireh," is an opium preparation which is known and used in several other countries such as Afghanistan, Pakistan, China, and some Southeast Asia. Moreover, both opium and opium dross are abused by either smoking (smokers would use a specially designed opium pipe) or by ingestion (swallowing of the drug; Dalvand et al., 1984).

Although there are multiple key factors that have been documented as associated with opiate use, little is known about the different patterns of use and behavioral profiles concerning opiate types. This article attempts to compare the baseline and behavioral characteristics of dross addicts versus opium addicts.

METHOD

In a cross-sectional study about drug abuse and drug dependence in Iran, conducted from April 2006 to August 2008, a total of 2979 cases of opioid dependence were identified (based on *Diagnostic and Statistical Manual of Mental Disorders*, Foruth edition, text revision criteria and International Classification of Diseases, 10th revision classification, World Health Organization, 1993). These cases, aged 18 years and older, were interviewed by trained interviewers using a modified version of the questionnaire used in the previous studies in the country (Razzaghi et al., 1999; Ghodse, 1999). In this cross-sectional study, data were obtained from the subjects recruited from all Iranian provinces in 3 different settings: treatment centers patients are actual residents and are provided with methadone. These patients are set in 2 groups: those who volunteer for treatment and those who are coerced to treatment, prisons (data obtained from the prisoners incarcerated for less than 6 months), and patients on the streets. Random number tables were used to select subjects from treatment centers and prisons in proportion to the population of each province, and a snowball sampling strategy was used in the selection of subjects from streets. Interviews were done voluntarily, and in private location, informed oral consent was obtained from the interviewees, assuring confidentiality. These anonymous questionnaires were comprised 3 sets of questions about (a) sociodemographic characteristics, (b) substance abuse patterns, and (c) crime records and high-risk behaviors.

The social and demographic data gathered in our interview included gender, home location, living arrangements (living with family, with flat-mates, or alone), marital status, the most recent scholastic or academic qualification obtained (no education, middle school or secondary school diploma, university degree), employment, and type of occupation. In addition, data were collected regarding cigarette smoking behavior, lifetime drug injection history and drug overdose history, and any case of hospital admission because of overdose in the preceding year.

Opiate users were categorized according to their current dominant substance (which is defined as the use of the kind of drugs in the last 12 months). Opiate addicts are grouped as opium users (n = 2636) and dross users (n = 343). Neither group differed significantly in terms of gender ($P = 0.269$) or age ($P = 0.452$). The reliability and validity of opiate use self-report has been assessed previously (Abnet et al., 2004). In a large cohort study in a rural Iranian population, they concluded that self-reported opiate use is reliable and valid in the population (Abnet et al., 2004). The statistical analysis of this survey included both descriptive and inferential statistical procedures. Data analysis was performed using SPSS (version 15). In addition, χ^2 test or analysis of variance was used to test the differences in frequencies, and the two-sided t test analysis was used to test the differences in means (opium users vs dross users). These were considered significant at $P < 0.05$.

RESULTS

Among 2979 opiate addicts, 2636 of them used opium and 343 patients used dross. As shown in Table 1, there was no difference in gender and age of the groups (mean ± SD

TABLE 1. Sociodemographic Data, Type of Drug Use, Risky Behavior, and Problems Encountered for Dross and Opium Addicts

No. Subjects (N = 2979)	Opium n = 2636	Dross n = 343	*P*
Gender (male)	2482 (94.1)	328 (95.6)	0.269
Immigration (rural to urban)			
Nonimmigrant	2256 (85.5)	272 (79.3)	0.000
Immigrant	187 (7)	49 (14)	
Education level			
Uneducated or low level education	326 (12.3)	58 (17)	0.04
Primary school diploma	2096 (79.5)	249 (72.5)	
University educated	214 (8.2)	36 (10.5)	
Marital status			
Married	1746 (66.2)	250 (73)	0.012
Single	702 (26.6)	66 (19)	
Widowed/separated	188 (7.2)	27 (8)	
Route of drug abuse			
Smoke	1977 (75)	188 (54.8)	0.000
Ingestion	659 (25)	155 (45.2)	
No. children			
1 or 2	940 (56)	117 (48.5)	0.00 6
3 or 4	504 (30)	81 (33.7)	
>5	230 (14)	43 (17.8)	
Household size			
4 or less	1217 (51.7)	159 (52.6)	0.756
>4	1137 (49.3)	143 (47.6)	
Living place			
Own house	853 (32.3)	135 (39.3)	0.031
Rental house	837 (31.7)	95 (27.7)	
Father's or father in law's house	898 (34.2)	102 (30)	
Homeless or hostel living	48 (1.8)	11 (3)	
Living with spouse (yes)	1667 (63.2)	242 (70.5)	0.013
Living with friends	20 (0.8)	4 (1.2)	0.300
Living alone	161 (6)	16 (4.6)	0.276
Currently employed	2008 (76.2)	273 (79.5)	0.253
Type of Job			
Simple laborer	474 (23.6)	56 (20.5)	0.42
Job Skilled laborer	478 (23.8)	64 (23.5)	0.453
Farmer	136 (7)	20 (7.3)	0.347
Skilled trades	196 (9.8)	37 (13.6)	0.03
Retail store	259 (13)	36 (13.2)	0.392
Other job	465 (23)	60 (22)	0.391
Illegal occupation	227 (9.8)	49 (15)	0.048
Cigarette smoking			
Past smoker	724 (27.5)	135 (39.3)	0.000
Current smoker	2154 (81)	241 (70.2)	0.000
Lifetime drug injection	158 (6)	31 (9)	0.032
Lifetime nonfatal drug overdose	890 (37.6)	148 (45)	0.007
Last year hospital admission due to overdose	272 (11.5)	72 (21)	0.000
Sexual relationship history			
Lifetime extramarital sexual relationship	875 (33.1)	122 (35.5)	0.43
Condom use (usual)	289 (11.6)	41 (12)	0.94
Arrest record			
Arrested in past year	328 (12.5)	82 (23.9)	0.028

Data are presented as n (%).

© 2011 American Society of Addiction Medicine

age: opium group, 34.7 ± 15.1; dross group, 36.8 ± 12.1, $P = 0.45$).

User Characteristics

As shown in detail in Table 1, the education level was different between opium addicts and dross addicts—opium addicts had higher educational levels than the dross addicts. Dross addicts had more than 5 children, compared with opium addicts, which showed a significant relationship between the family extension and the type of opium abuse ($P = 0.006$). Regarding the occupational categories of the individuals in these groups, there were no differences between the 2 groups in rates of employment ($P = 0.253$), but the difference was significant only in the skilled trades (such as plumber, auto mechanic, etc.): simple laborer ($P = 0.42$), skilled laborer ($P = 0.453$), farmer ($P = 0.347$), skilled trades ($P = 0.03$), retail store clerks ($P = 0.392$), and other occupations ($P = 0.391$).

About the rate of consumption way of drug abuse, smoking was more prevalent manner in both groups of opium 1977 (75%) and dross addicts188 (54.8%) but dross addicts had higher rate of ingesting (swallowing) the dross compared with opium addicts (45.2% vs 25%) ($P = 0.000$).

Marriage was more common among dross addicts compared with the other group. There was a significant relationship between marital status and type of opium addiction ($P = 0.01$).The living situation had some significant relationship with the type of addiction ($P = 0.031$). There was no significant difference regarding the solitary life between the 2 groups of addicts ($P = 0.276$). Looking at the conjugal life of addicts, the number of dross addicts living with their spouses was more than opium addicts ($P = 0.013$). A history of cigarette smoking was reported more in dross addicts ($P < 0.001$), but current cigarette smoking was more prevalent in opium addicts ($P = 0.000$).

Behavioral Profile

There was no significant difference in risky sexual behavior between 2 groups of dross and opium users, including nonspouse sexual contact ($P = 0.43$) and condom use ($P = 0.94$).

The dross addicts tended to earn their living through illegal activities, such as drug trafficking, burglary, and smuggling, compared with the opium addicts ($P = 0.048$). The history of intravenous (IV) drug injection was observed more in the dross group compared with the opium addicts ($P = 0.032$). The records of violating the law was higher for dross addicts than for the other group during the past year ($P = 0.028$). In addition, dross addicts had experienced a higher number of drug overdoses in their lifetime ($P = 0.007$) and a higher incidence of hospital admission because of drug abuse in the past year, compared with the opium group ($P = 0.000$).

DISCUSSION

Our study is the first that compares the baseline characteristics and behavioral profiles of opium dross users in Iran with the users of raw opium. Although the difference in prevalence is very different, opium and dross are the 2 most prevalent opiates used in Iran. Among those who sought treatment at urban addiction recovery centers, the major drug being abused was opium (varying between 50% and 97%). A recent study of Iranian addicts reported that dross addiction had the second prevalence rank (16%) after opium addiction (65%) among Iranian addicts (Ahmadi and Hasani, 2003).

A rise in poppy cultivation in Afghanistan affects the consumption of opium in Iran. The world's largest opiate seizures since 1988 are reported in Iran. Despite an overall decline of 54% in opiates seizures in 2001 (a consequence of Afghanistan's opium ban), Iran by itself accounted for 27% of the world's opiate seizures in that year, ahead of China (18%), Pakistan (12%), Turkey (7%), and Tajikistan (6%) (UNODCCP, 2003). These seizures are an indicator of an increased prevalence of opiate use in Iran, which has the world's highest per capita incidence of opium addiction (Rahimi-Movaghar et al., 2004).

Our data about individual characteristics of addicts showed that dross addicts were socioeconomically worse off than opium addicts. A greater number of dross addicts were seen among migrants from rural areas to cities. Dross addicts were less educated and had more children. Such findings indicate that dross addicts were living at a lower socioeconomic level than opium addicts. Some previous reports showed that the use of some drugs such as heroin and "crack" is correlated with the lower socioeconomic level of addicts (Williams and Latkin, 2006).

The criminal records and high-risk behaviors of dross addicts, such as the illegal occupations, the prevalence of cigarette smoking, the incidence of drug injection, the occurrence of drug overdose and hospital admission because of such overdose, and the record of being arrested in the previous year, were higher than opium addicts and show that dross addicts have a more dangerous lifestyle than opium addicts in the society.

We found that in both types of opium addiction, males were much more common than females. The male dominance of substance abuse in Iran is reported by several previous studies. For example, it is reported that the males are at a greater risk of opium use and dependency (Agahi and Spencer, 1981; Dalvand et al., 1984; Max, 1999; Abnet et al., 2004). This pattern was also reported in India that more than 90% of opium abuse is carried out by men (UNODCCP, 2003). This pattern may be different in Western countries with less male predominance in substance abuse (Coleman et al., 1997).

In this study, we also evaluated the prisons and especial treatment centers for women. It seems that several issues limit a scientific and reasonable estimate of opium use among women in Iran and most other developing countries. Male dominance of programs and more stigmatization and shame related to opium use among women can be named among the most important reasons. Women are less likely to express their substance use behaviors and are less likely to participate in such researches, and that lower rate of substance use among women in such studies may be caused by such barriers and participation bias (Agahi and Spencer, 1981; Dalvand et al., 1984; Max, 1999).

© 2011 American Society of Addiction Medicine

In our study, there was a link between a lower level of education and dross use. The previous studies indicate the possibility that a predisposing factor for illicit drug use is poor education (Kassay et al., 1999). But our finding shows that not only education level is one of the important factors in drug abuse, but also education level differs in various types of opium abuse cases.

It can be suggested that those at lower income levels have a higher incidence of opium use and dependency. However, those at higher income levels also have substantial addiction figures. As with the occupations, opium use and dependency is sporadic across users income (Ahmadi et al., 2006; Jafari et al., 2009). This is also the case with educational background. Similarities are to be expected, of course, because occupation, education, and income are interconnected (Wu et al., 1996; Kassay et al., 1999).

Illegal occupations such as smuggling, burglary, or drug trafficking were more prevalent among dross addicts, indicating that these subjects are more problematic for the society.

Our data show that dross addiction was more prevalent among migrants to urban areas. Migration to urban areas is an activity undertaken primarily by young adults (Guest, 2003) and characterized by exposure to stressful life events, social difficulties, and a reduction in the social network and support, with the clear potential for deviant behaviors and mental problems (Harpham, 1994). The associations between migration, mental, and behavioral problems are complex. Although the previous study has suggested some possible links between rural-to-urban migration and illicit drug use (Harpham, 1994; Guest, 2003; Jafari et al., 2009), our findings indicate a significant relationship between rural-to-urban immigration and type of opium abuse.

Acute opiate overdose is one of the most severe complications of drug abuse and addiction. It is also an important cause of death in opiate users (Ahmadi et al., 2006; Jirapramukpitak et al., 2008; Jafari et al., 2009). Our findings shows that the drug overdose and hospital admission because of overdose were more prevalent in the dross addiction group. Although both opium and dross are mostly used through smoking, this occurs because the consumption of the drug through ingestion is more prevalent among dross abusers. The most common route of overdose was ingestion, highlighting the importance of ingestion as a potential mechanism of fatal overdose as opposed to the popular belief that only the smoking of opium is harmful (Jirapramukpitak et al., 2008).

Our findings also demonstrate that the practice of drug injection was more common among dross addicts. The risk of taking up IV drug abuse is more notable among dross addicts. Most heroin users begin with opium consumption and for controversial reasons they eventually convert to heroin consumption after a few years, which multiplies its potency to approximately twice that of morphine, can be taken by IV injection, and is easier to smuggle (Mojtahedzadeh et al., 2008; Jafari et al., 2009). Data about Human Immunodeficiency Virus (HIV) in Iran show a rapid increasing trend (Zamani et al., 2006; Ziaaddini et al., 2005). Injection drug users comprise more than 82% of the reported HIV cases for which the route of transmission is known (Gouya, 2006). Recent studies shows HIV prevalence rates ranging from 15% to 25% in injection drug users living in Tehran, Iran's major urban center (Zamani et al., 2005, 2006; Mojtahedzadeh et al., 2008). This findings indicate the special Primary Health Care integrated HIV prevention programs designed for these patients.

Experience from other Asian countries that have endemic opium smoking habit shows that reckless campaigns against opium consumption may ironically lead to a disastrous heroin injection habit (Rhodes et al., 1999). The fact that currently the number of opium smokers in Iran is 4 to 5 times greater than the number of heroin dependents (Rahimi-Movaghar et al., 2004) and emphasizes the necessity of trying to prevent such transition. There is a dormant giant that should not be awakened.

Based on aforementioned evidence, the overall difference between the opium and the dross addicts regarding the particular form of opium may be related to characteristics such as socioeconomic level (dross addicts had worse socioeconomic characteristics) or it may be due to the effect of the different types of opioid (dross and opium), although this is less probable because of more or less the similar effects of these 2 forms of drugs. Another explanation may be that dross addiction is often the next stage after opium addiction because of its higher concentration of morphine and its lower price.

One possible limitation of this survey, shared by many other epidemiological studies of drug use, is underreporting. In Iranian culture, substance use is widely considered to be harmful and shameful. In addition, in Iran, there are legal penalties for addiction. Accordingly, some subjects may deny the use or dependency and may also deny some elements of our questionnaire such as illegal income and the high-risk behaviors such as drug injection. The participants are selected mostly from the high-risk populations (prisoners, street youth, and treatment centers). This sample does not represent the general population of substance users in Iran. The results have to be interpreted with caution.

Some faults could perhaps be found in our categorization of occupations. However, this subject was given much thought, and the chosen categories best suited the population under consideration.

Another limitation of our study is that our work provides no causal inference. This is the nature of single cross-sectional epidemiologic studies. However, this work is one of the first scientific population-based studies of opium and dross use and dependency taking place in our country. Therefore, this study may serve as a basis for education, prevention, and treatment strategies for future studies.

CONCLUSIONS

In short, besides a number of individual differences between opium addicts and the dross (residue) abusers, the risk of drug injection, drug overdose, hospital admission due to overdose, illegal occupation, and the incidence of being jailed in the previous year are more likely to be observed among the dross addicts. In addition, we concluded that dross addicts pose more danger to the society than opium addicts, a fact that requires more specific and careful attention.

© 2011 American Society of Addiction Medicine

REFERENCES

Abnet CC, Saadatian-Elahi M, Pourshams A, et al. Reliability and validity of opiate use self-report in a population at high risk for esophageal cancer in Golestan, Iran. *Cancer Epidemiol Biomarkers Prev* 2004;6:1068–1070.

Agahi C, Spencer C. Drug abuse in prerevolutionary Iran. *J Psychoactive Drugs* 1981;13:39–46.

Ahmadi J, Fallahzadeh H, Salimi A, et al. Analysis of opium use by students of medical sciences. *J Clin Nurs* 2006;4:379–386.

Ahmadi J, Hasani M. Prevalence of substance use among Iranian high school students. *Addict Behav* 2003;28:375–379.

Coleman EA, Honeycutt G, Ogden B, et al. Assessing substance abuse among health care students and the efficacy of educational interventions. *J Prof Nurs* 1997;13:28–37.

Dalvand S, Agahi C, Spencer C. Drug addicts seeking treatment after the Iranian revolution: A clinic-based study. *Drug Alcohol Depend* 1984; 14:87–92.

Ghodse H. Addiction. A matter of substance. *Health Serv J* 1995;105:31.

Ghodse H. Guiding principles of drug demand reduction: an international response. *Br J Psychiatry* 1999;175:310–312.

Gouya MM. National Report on HIV and AIDS Cases. Disease Management Center, Ministry of Health and Medical Education. Tehran, Iran: Islamic Republic of Iran; 2006.

Guest P. Bridging the Gap: Internal Migration in Asia. Bangkok: Population Council; 2003.

Harpham T. Urbanization and mental health in developing countries: A research role for social scientists, public health professionals and social psychiatrists. *Soc Sci Med* 1994;39:233–245.

Jafari S, Movaghar AR, Craib K, et al. Socio-cultural factors associated with the initiation of opium use in Darab, Iran. *Int J Ment Health Addict* 2009;7:1557–1882.

Jirapramukpitak T, Prince M, Harpham T. Rural-urban migration, illicit drug use and hazardous/harmful drinking in the young Thai population. *Addiction* 2008;103:91–100.

Kassay M, Sherief HT, Fissehaye G, et al. Knowledge of 'drug' use and associated factors as perceived by health professionals, farmers, the youth and law enforcement agencies in Ethiopia. *Ethiop J Health Dev* 1999;13:141–149.

Max M, ed. Pain: An Updated Review (Refresher Course Syllabus). 9th World Congress on Pain. Seattle, WA: International Association for the Study of Pain Press; 1999.

Mojtahedzadeh V, Razani N, Malekinejad M, et al. Mandel injection drug use in rural Iran: Integrating HIV Prevention into Iran's Rural Primary Health Care System. *AIDS Behav* 2008;12(4 Suppl):S7–S12.

Rahimi-Movaghar V, Rakhshani F, Mohammadi M, et al. Opioid use in patients presenting with pain in Zahedan, Islamic Republic of Iran. *East Mediterr Health J* 2004;10:082–089.

Razzaghi EM, Rahimi-Movaghar A, Hosseini M. Rapid situation assessment (RSA) of drug abuse in Iran (1998–1999). Teheran, Iran: Prevention Department, Ministry of Health, Islamic Republic of Iran and United Nations International Drug Control Program [in Persian]; 1999.

Rhodes T, Ball A, Stimson GV, et al. HIV infection associated with drug injecting in the Newly Independent States, eastern Europe: The social and economic context of epidemics. *Addiction* 1999;94:1323–1331.

UNDCP. Community Drug profile 2: Opium and other problem drug use in a group of Afghan refugee women—Afghanistan. Islamabad, Pakistan; 1999a.

United Nations International Drug Control Programme (UNDCP). Community Drug Profile 1: Problem drug use in Afghan Communities: An initial assessment—Afghanistan. Islamabad, Pakistan; 1999b.

UNDCP. Community Drug Profile 4: An assessment of problem drug use in rural Afghanistan: The GAI target districts—Afghanistan. Islamabad, Pakistan; 2001b.

United Nations Office for Drug Control and Crime Prevention (UNODCCP). Global Illicit Drug Trends 2001, Afghanistan statistics. Report commissioned by the United Nations Office for Drug Control and Crime Prevention. New York; 2001.

UNODCCP. Global Illicit Drug Trends 2003, Opiates: Seizures, 1996–2001; 2003:213–243.

Williams CT, Latkin CA. Neighborhood socioeconomic status, personal network attributes, and use of heroin and cocaine. *Am J Prev Med* 2007;32(6 Suppl):S203–S210.

World Health Organization (WHO). The ICD-10 Classification of Mental and Behavioral Disorders—Diagnostic Criteria for Research. Geneva: World Health Organization; 1993.

Wu Z, Zhang J, Detels R, et al. Risk factors for initiation of drug use among young males in south west China. *Addiction* 1996;91:1675–1685.

Zamani S, Kihara M, Gouya M, et al. Prevalence of HIV infection associated with incarceration among community-based injecting drug users in Tehran, Iran. *J Acquir Immune Defic Syndr* 2006;42:342–346.

Ziaaddini H, Ziaaddini MR. The household survey of drug abuse in Kerman, Iran. *J Appl Sci* 2005;5:380–382.

© 2011 American Society of Addiction Medicine

View publication stats