

Socio-demographic characteristics of the addicted inmates of Qom and Tabriz prisons in Iran

Sattari Mohammadreza^{1,5}, Islambulchilar Mina^{2,5}, Toluyi Mohsen³, Mashayekhi Siminozar^{4,5*}

¹ Neurosciences Research Centre, Tabriz University of Medical Sciences, Tabriz, Iran.

² Infectious and Tropical Diseases Research Centre, Tabriz, Iran.

³ Students Research Committee, Tabriz University of Medical Sciences, Tabriz 51664-14766, Iran.

⁴ NPMC, Tabriz University of Medical Sciences, Tabriz 51664-14766, Iran.

⁵ Faculty of Pharmacy, Tabriz University of Medical Sciences, Tabriz, Iran.

ARTICLE INFO

Article Type:

Research Article

Article History:

Received: 10 Feb 2012

Accepted: 29 Feb 2012

ePublished: 15 March 2012

Keywords:

Addiction

Inmates

Opiates

ABSTRACT

Purpose: The aim of this investigation was to study the factors responsible for drug addiction amongst the inmates of Tabriz and Qom prisons, to further understand the reasons for drug abuse particularly in the young and find improved methods for combating these widespread problems. **Methods:** A multi-choice questionnaire was provided to inmates to potentially assess the reasons for their drug addiction psychiatric, personal, social, economical, and political factors were thought to be implicated. Two hundred drug addicted prisoners were individually interviewed randomly in both Tabriz and Qom prisons. A questionnaire including questions about the inmates' demographic characteristics and 49 multiple answers questions, was provided to identify the effects of different reasons for drug addiction for instance: psychiatric, personal, social, economical, and political factors. The collected data were analyzed by Student t-test and chi-squared test using SPSS software. **Results:** The results showed that the following factors could lead to drug addiction e.g. company with addicted friends and offenders, curiosity, imitation, illiteracy, family problems, crowded family, poverty, unemployment, and lack of self confidence. There were significant differences between Tabriz and Qom prisoners in relation to age, starting age of addiction, job, income, education, class of addiction, marital status, and hobbies. Mean age, mean starting age of addiction, poverty, alcohol drinking before addiction, marital status, heroin addiction, codeine and benzodiazepines abuse were significantly greater for Tabriz prisoners than those of Qom. **Conclusion:** It is clear that the governmental programs for reducing unemployment, creation of safe hobbies, proper control on drug dispensing in the pharmacies, proper birth control programs, and encouragement to higher education could alleviate addiction problem in Iran.

Introduction

Besides the improvement in technology and science, and in spite of the benefits on socioeconomics and amelioration of life facilities new problems such as new diseases have arisen. Nowadays, we have been able to overcome many problems including eradicating many diseases such as smallpox and polio. However, there are many other obstacles in the way of reaching a healthy lifestyle eg drug addiction and subsequently some incurable diseases like HIV and hepatitis C.

A report has indicated that 87% of Asian countries have had increasing numbers of prisoners over the past twenty years.¹ In Iran, the prison population has increased from about 100,000 in 1993 to 160,000 in 2002, with a rate of 229 inmates per 100,000 of general

population.¹ The recent boom in Afghan opium production, propelled by a resurgent Taliban, has had an increasing impact on Iranians, both young and old, across the border. Although, the police of Iran have been tackling the drug problem for many years, Iran has an estimated 3 million drug users and by many accounts, the world's worst heroin problem.²

Addiction is a psychological and behavioral syndrome characterized by an intense desire for the drug and overwhelming concern about its continued availability. Addiction or substance dependence unlike tolerance and physical dependence is not a predictable response to exposure for reward-producing drugs but may occur in biologically and psychologically susceptible

*Corresponding author: Siminozar Mashayekhi (PHD), Faculty of Pharmacy, Tabriz University of Medical Sciences, Tabriz, Iran.

Tel: +98 (411) 3855905, Fax: +98 (411) 3344798, E-mail: mashayekhis@yahoo.co.uk

Copyright © 2012 by Tabriz University of Medical Sciences

individuals.³ There is a significant increase in the production and use of illicit drugs throughout the world.^{4,5} Dependence on heroin continues to rise for example from one-half million in the 1980s to approximately 750,000 in the 1990s, the numbers now appear to have markedly increased to about 1 million.⁶ Opiate use continues to spread and is an increasing burden especially in developing countries like Iran.⁴ Few reports have shown that the pattern of drug abuse has started to change from opium to other drugs. However, some other studies have shown opium to be the most frequent substance abused in Iran.^{7,8} Less is known about the epidemiology of substance abuse, addiction and therefore its complications in Iran.^{8,9} The cultivation of opium in Iran has been banned since 1979 and since that time, the law has recognized addiction as a social problem. Despite this legislation, the use of illegal substances has continued as a hidden activity associated with social disapproval and stigma. On the other hand a consequence of drug trafficking from the opium producing areas of Afghanistan and Central Asia to Europe through Iran, may be increasing the availability of opium which could influence the prevalence of opium usage in Iran.⁴ The United Nations Office on Drugs and Crime (UNODC) estimates 60 percent of Afghanistan's opium is trafficked across Iran's border (much of it in transit to Europe). A report indicated that Iran had at least 1,200,000–2,000,000 cases of drug dependency or abuse, constituting 1–2% of the general population in 2002.¹⁰ According to the report for 2005, Iran has the highest proportion of opiate addicts in the world, 2.8 percent of the population over age 15.¹¹ The majority of previous studies have demonstrated unemployment, illegal income, drug use by family members, and pleasure/enjoyment as the main reasons for substance abuse in Iran.¹² In a study in the north of Iran, there was a significant correlation between opium use and male sex, unemployment and cigarette smoking.¹³ In another study on 920 professional drivers of Iran, 434 cases (46.8%) and 256 cases (27.6%) were using opium and crack respectively.¹⁴ Of the 3840 participants who were studied in the Fars province of Iran, 689 (17.9%) admitted use of opium once or more times during their lives (28.4% of men and 7.4% of women). Three hundred thirty-nine (8.8%) were current opium users (14.3% of men and 3.3% of women).¹⁵ Of the 153 women, 47.4% had a lifetime history of drug treatment.¹⁶ Heroin is the most frequent cause of fatal intoxication in most countries.¹⁷ Heroin use predominates among urban residents, whilst villagers are more likely to be opium users.¹⁸ Unemployment in Iran is somewhere between 11 percent (the official level) and 25 percent (the estimate given by some outside economists).² One in four Iranians lives in poverty. Experts say because of these dire economic conditions, particularly among those under thirty, who comprise 70 percent of Iran's population; people turn to drugs.²

In a study on the self-admitted illicit drug users in police custody within the Metropolitan Police Service in London, UK in 2003, heroin and crack cocaine were the most frequently used drugs (93% and 87% respectively).⁵ A number of studies have suggested that there are risk factors which can lead adolescents to the abuse of alcohol and other drugs.¹⁹⁻²⁵ Labouvie *et al.*²⁶ described three basic categories of risk factors: demographic, social, and behavioural. Bragger *et al.*²⁷ suggested that individual characteristics of adolescents are also involved in the onset of substance abuse. The objective of this study was to show the differences between the two main cities of Iran regarding demographic, social, and behavioral risk factors.

Materials and Methods

Two hundred drug addicted prisoners (23 females and 177 males), aged between 18 and 65 years (median 30) were individually interviewed at random in both Tabriz and Qom prisons (100 each prison). *Tabriz* is the fourth largest and the second industrial city in Iran and the capital of East Azerbaijan Province in the north-west of Iran, with a population of about 1,400,000 (<http://en.wikipedia.org/wiki/Tabriz>). *Qom* is a religious city of Iran, the capital of Qom Province, in the south of Tehran, with an estimated population of 1,042,309 in 2005. The city is the largest center for Shi'a scholarship in the world, and is a significant destination of pilgrimage (<http://en.wikipedia.org/wiki/Qom>). *Tabriz* and *Qom* prisons comprise of 625 (562 males and 87 females) and 463 (403 males and 60 females) addicted inmates respectively. The majority of the inmates recruited for the study chose not to participate. A questionnaire including questions about the inmates' demographic characteristics and 49 multiple answers questions, was provided to identify the effects of different reasons for drug addiction for instance: psychiatric, personal, social, economical, and political factors. The inmates were selected for participation in the study from May to September, 2007. They were free to choose to attend the survey or not. Demographic and background characteristics of the sample are described in Table 1. The collected data were analyzed by Student t-test and Pearson chi-squared test using SPSS (ver. 17) software.

Results

Demographic characteristics

The majority of addicts were men in *Tabriz* (90%) and *Qom* (87%). The proportions of men to women in *Tabriz* and *Qom* were 9:1 and 6.7:1 respectively. There was no significant difference between gender in the two cities ($P>0.05$). The average ages of subjects were 34.52 ± 10.68 (SD) and 30.71 ± 7.69 respectively ($P<0.001$). The most common age group in *Tabriz* was 21-25 years (21%), while, it was 26-30 years (40%) in *Qom* ($P<0.001$). About 23% of the addicts of *Tabriz* were illiterate compared to 4% of the addicts of *Qom*.

26 and 49% had primary school, 13 and 15% middle school, 20 and 15% high school, and 7 and 1% of the addicts of Tabriz and Qom had university education respectively ($P<0.001$). There were more single addicts in Tabriz (70%) than in Qom (40%) ($P<0.05$). Only 4% of the addicts of Tabriz and 3% of Qom were employed, while 94% in Tabriz and 79% in Qom were unemployed or false-employed. Most of the addicts (72% in Tabriz and 53% in Qom) in both cities earned less than US\$300 in a month before onset of drug

addiction. Low income addicts in Tabriz were significantly more than Qom ($P<0.05$) (Table 1).

Age at drug addiction commencement

The majority of addicts stated that they commenced drug abuse between 16 and 20 years of age (38% in Tabriz and 34% in Qom). The mean age of drug abuse commencement in Qom (20.03 ± 6.25) was significantly lower than Tabriz (23.72 ± 7.71) ($P<0.01$) (Table 2).

Table 1. Results of demographic characteristics of the inmates of Tabriz and Qom

Demographic Characteristics of the Addicts		Tabriz (%)	Qom (%)
Mean Age (\pm SD)		34.52 \pm 10.68	30.71 \pm 7.69
Sex	Male	90	87
	Female	10	13
Education	Illiterate	23	4
	Primary school	26	49
	Middle school	13	15
	High school	20	15
	Higher education	7	1
	NA*	11	16
Employment status	Employed	4	3
	Unemployed or false-employed	94	79
	NA	2	18
Marital status	Single	70	40
	Married	29	58
	NA	1	2
Monthly income	<\$300	42	29
	\$300 to 600\$	30	24
	\$600 to \$900	8	12
	\$900 to \$1200	3	11
	\$1200 to \$1500	3	10
	\$1500 to \$1800	3	6
	>\$1800	6	8

*Not Acquired

Smoking and drinking alcohol before onset of drug addiction

Smoking and drinking alcohol has already been shown to encourage drug addiction.²⁸⁻³² In Tabriz and Qom 70% and 73% confessed to smoking cigarette respectively and 58% in Tabriz and 49% in Qom confirmed they were drinking alcohol prior to the onset of drug addiction, although drinking alcohol is illegal in Iran after the Islamic revolution in 1978. There were no significant differences between the two cities regarding smoking and drinking alcohol before commencement of drug addiction ($P>0.05$) (Table 2).

Hobbies and friendship before drug addiction

Hobbies and the role of close friends are very important in the development of smoking, alcohol and drug abuse among teenagers.³³⁻³⁸ Twenty seven percent of Tabriz's and 56% of Qom's addicts suggested that they used to spend their spare times with their close friends ($P<0.001$) and 22% of the addicts' hobbies in Tabriz and 12% in Qom were sport ($P<0.001$). Other hobbies e.g. reading, cinema, and doing second job were less important and similar in both cities (Table 2). Most of the addicts in both cities confirmed that they were usually abusing their drugs with friends (39% in Tabriz and 27% in Qom) or alone out of their families' sight (21% in Tabriz and 30% in Qom). In both cities

(Tabriz: 69% and Qom: 64%) the majority of addicts confirmed the importance of the role of close friends in

starting their drug addiction, while family members and relatives were less important in both cities (Table 3).

Table 2. Other information acquired from the inmates of Tabriz and Qom

Other Characteristics of the Addicts		Tabriz (%)	Qom (%)
Age at drug addiction commencement	<15	7	26
	16-20	38	34
	21-25	14	15
	26-30	13	14
	31-35	11	4
	36-40	7	1
	>41	2	0
	Mean	23.72±7.71	20.03±6.25
	NA	8	6
Smoking before drug addiction	Positive	70	73
	Negative	26	25
	NA	4	2
Drinking alcohol before drug addiction	Positive	58	49
	Negative	37	47
	NA	5	4
Hobbies before drug addiction	Reading	4	7
	Sport	22	12
	Being with friends	27	56
	Cinema	6	5
	Second job	9	7
	Others	23	9
	NA	9	4
Causes of returning to drug addiction	Humiliation by others	11	6
	Unemployment	30	30
	Intolerability to physical and psychiatric problems	24	44
	Intolerability to social problems	15	8
	NA	20	12
Usual time for drug abuse	At home near family	16	18
	At home out of sight of family	21	30
	Work place	3	11
	After work	16	7
	With friends	39	27
	NA	0	1
Awareness about drug adverse events	None	12	14
	Little	29	23
	Much	18	27
	Very much	37	32
	NA	4	4

Causes of returning to drug addiction

All of the inmates who were interviewed had given up their addiction at least once. The majority of them said they could not find any proper job (30% in both cities) or they were intolerable to physical and psychiatric

problems (24% in Tabriz and 44% in Qom) after giving up their addiction and leaving jail (Table 2). Therefore, they found drugs the "best friend" again, although, most of them (77.1%) said they had decided to stop abusing drugs (Table 3).

Table 3. Other information acquired from the inmates of Tabriz and Qom

Other Characteristics of the Addicts		Tabriz (%)	Qom (%)
Decision to give up drugs	Positive	73	82
	Negative	17	14
	NA	8	4
First drug abuse offered by:	Family member	9	4
	Relatives	7	11
	Friends	69	64
	Others	10	16
	NA	5	5
The first motivation to addiction	Curiosity	26	28
	Pleasure	17	20
	Analgesic effects	19	9
	Missing a dear one	5	10
	Treatment of a psychological disease	16	16
	Family problem	7	11
	Other	6	4
	NA	4	2
Causes of arrest	Robbery	10	12
	Trafficking drugs	30	35
	Fighting	1	1
	Drug addiction	42	43
	Smuggling illegal materials	5	0
	Other	4	5
	NA	8	4

Usual time for drug abuse

Addicts usually like to enjoy abusing drugs in private or with friends. The majority of our subjects declared that they were regularly using their drugs with friends (30%) or at home in private (25.5%) (Table 2).

Awareness about drug adverse events

Only 12% in Tabriz and 14% in Qom were aware of adverse drug events, whereas, 29% in Tabriz and 23% in Qom had little information and 55% in Tabriz and 59% in Qom were approximately aware of such adverse events. The question remains “Why abuse drugs knowing what is likely to occur?”

Influence of people and reason for commencement of drug addiction

Addicts are not encouraged by television or radio programs nor by magazines advertisements but often their friends are involved in offering the first drug to them. Many of our subjects believed that their friends had offered them drugs for the first time (66.5%). They said they started drug abuse because they were curious about them (27%), wanted to be delighted (18.5%), to treat a psychological disease (16%) or pain (14%), to remove sadness about missing a dear person (7.5%) or a

family problem (9%), and/or some other reasons (Table 3).

Reasons of arrest

A large proportion of addicts have no employment or income, so they earn money from illegal or criminal acts such as robbery, smuggling, and shoplifting. According to Iranian law and our subjects’ beliefs, the majority of them (42.5%) were in jail because of their addiction. Despite that, 30% and 11% of them were arrested in relation to smuggling and robbery respectively.

Replaced drugs

Though most abused drugs can cause some degree of physiologic dependence, the severity of withdrawal varies considerably among these drugs. Some of these symptoms are; nausea, vomiting, diarrhoea, yawning, restlessness, rhinorrhea, lacrimation, tachycardia, and hypertension. Addicts regularly replace some other drugs to eliminate the above symptoms³⁹. The majority of addicts in Tabriz and Qom said that they used codeine (36% and 19%) or alcohol (14% and 26% respectively) to eliminate the withdrawal symptoms of the main abused drug. Other drugs used for this purpose

included: diphenoxylate, barbiturates, benzodiazepines, phenothiazines, and amphetamines. There was not any

significant difference in the variety of substituted drugs between the two cities ($P>0.05$) (Table 4).

Table 4. Other information acquired from the inmates of Tabriz and Qom

Information about Drugs Abused by the Addicts	Tabriz (%)	Qom (%)	
The first experience in drug abuse	Heroin	19	16
	Opium	44	62
	Hashish or Marihuana	32	15
	LSD	0	2
	Ecstasy	0	1
	Amphetamine	5	4
	NA	19	16
Effects following the first abuse of drugs	Drowsiness	13	14
	Pleasure	48	43
	Hyperthermia	4	1
	Analgesia	12	8
	Amnesia	5	10
	Physical effects	1	6
	Psychological effects	0	2
	Headache	5	1
	Dizziness	8	7
NA	0	5	
Type of addiction	Heroin	43	29
	Opium	40	58
	Hashish or Marihuana	11	29
	LSD	0	1
	Ecstasy	0	2
	Amphetamine	1	1
	NA	5	5
Replaced drugs	Alcohol	14	26
	Barbiturates	1	1
	Amphetamines	1	0
	Diphenoxylate	3	2
	Codeine	36	19
	Phenothiazines	3	0
	Benzodiazepines	9	0
	Other drugs	9	0

Discussion

The influence of demographic characteristics on drug addiction has already been demonstrated in different societies.^{19,22,25,40-44} We showed in this study that men are usually at higher risk of getting addiction to drugs compared to women probably because they are more curious, bolder, more interested in variety, and less tolerable under social or familial stresses compared to women. We also showed that the addicted inmates of Tabriz were significantly older than those of Qom. Possibly, according to our data (Tab. II), the prison inmates of Tabriz commenced their drug abuse when

older in age compared to those Qom. Research has indicated that certain younger people are more prone to drug abuse⁴⁵ and lifetime prevalence of abuse is higher between the ages of 18 and 29 than other cohorts for both men and women.⁴⁶ We showed that around 64% in both cities had started their drug abuse between 16 and 30 years of age that confirms Young et al's findings. Younger people have inadequate knowledge on illicit drugs and their attitudes become more liberal as age increases. They are also more curious, bolder, and less timorous than other ages. Like other countries,⁴⁷⁻⁴⁹ unemployment and low income, singleness, low

education, looking for fun, being trained in a violent area with rough families or friends are other reasons for the high prevalence of addiction commencing at a young age in Iran. The effect of families, relatives and friends on drug abuse has already been demonstrated in previous studies.⁵⁰⁻⁵⁵ In the present study, the majority of subjects (66.5%) said that they have been offered their drugs by their friends for the first time. These addicts usually had less control from their parents during their childhood. Single addicts of Tabriz (70%) were significantly more than those of Qom (40%). This difference might be because of the low age of marriage in villages and small cities compared to the large cities in Iran. We revealed that only 17.5% of inmates had high school education or above, and the rest were illiterate or had primary or middle school education. We also showed that the most of our subjects (62.5% in both cities) had under \$300 income in a month and 86% in total were unemployed or false-employed. Therefore, organization of job opportunities, encouragement of singles to get married, establishment of leisure centres, and raise in knowledge of teenagers about the adverse effects of drugs will help the drug abuse prevalence among teenagers in Iran to be diminished.

In this study we found that most of the addicts, who had given up drug abuse and left the prison, were arrested again after a short term. Unemployment, humiliation, intolerability to social problems, and hopelessness for their future were the most important reasons for their returning to the drugs. There is easy access to drugs in Iran because of the many dealers who are looking for customers among these people and encourage them with exciting offers. Therefore, rehabilitation programs should coincide with combating drug dealers. Accepting that opioid use and crime are associated and develop together, amongst opioid-using criminals the need for opioids may cause crime on a day-to-day basis or both may tend to be determined by some other set of factors. A study showed that heavy opioid users committed crimes significantly more frequently than did moderate opioid users, non-opioid polydrug users, cannabis users or alcohol users.⁵⁶ There is a correlation between imprisonment and problematic drug use. Many people are imprisoned for possession or distribution offences, many commit crimes while under the influence of drugs and commit astounding amounts of property crime to pay for their regular supply.⁵⁷ The majority of our subjects were in jail because of addiction or related crimes e.g. drug trafficking and smuggling.

Some of our subjects (15%) mentioned the role of pain-killer drugs in their addiction to drugs. Previous studies have shown that the increasing prescription of opioids is associated with a rise in aberrant drug-related behaviour. The causes of this behaviour are multifactorial. Some pharmacotherapeutic, but in particular psychosocial risk and etiologic pain factors have been identified. The indication for the prescription of opioids must be very carefully evaluated in the

presence of any risk factor. In the absence of successful opioid therapy, the treatment must be discontinued to avoid iatrogenic damage, substance abuse and illegal diversion.⁵⁸ Furthermore, strategies to help identify the early signs of addiction and the best clinical practices for use of these agents will help minimize the likelihood of addiction.⁵⁹

Acknowledgments

We wish to thank to Dr. Derek Buss (Cardiff University) for his collaboration in writing this paper and the personnel of the prisons of Tabriz and Qom for their cooperation.

Conflict of interest

The authors report no conflicts of interest in this work.

References

1. Assadi SM, Noroozian M, Pakravannejad M, et al. Psychiatric morbidity among sentenced prisoners: prevalence study in Iran. *Br J Psychiatry* 2006;188:159-64.
2. Afghanistan's Role in Iran's Drug Problem Council on Foreign Relations; 2006. http://www.cfr.org/publication/11457/afghanistans_role_in_irans_drug_problem.html. Accessed January 28, 2011.
3. Hojsted J, Sjogren P. Addiction to opioids in chronic pain patients: a literature review. *Eur J Pain* 2007;11(5):490-518.
4. Karbakhsh M, Salehian Zandi N. Acute opiate overdose in Tehran: the forgotten role of opium. *Addict Behav* 2007;32(9):1835-42.
5. Payne-James JJ, Wall IJ, Bailey C. Patterns of illicit drug use of prisoners in police custody in London, UK. *J Clin Forensic Med* 2005;12(4):196-8.
6. Kelber HD. Future advances in addiction treatment. *Clinical Neuroscience Research* 2005;5(2):201-5.
7. Rajabizade G, Ramezani MA, Shakibi MR. Prevalence of opium addiction in Iranian drivers 2001-2003. *Journal of Medical Sciences* 2004;4:210-3.
8. Ziaaddini H, Ziaaddini MR. The household survey of drug abuse in Kerman. *Journal of Applied Sciences* 2005;5:380-2.
9. Ahmadi J, Arabi H, Mansouri Y. Prevalence of substance use among offspring of opioid addicts. *Addict Behav* 2003;28(3):591-5.
10. Mokri A. Brief overview of the status of drug abuse in Iran. *Archives of Iranian Medicine* 2002;5:184-90.
11. Vick K. Opiates of the Iranian People. *Despair Drives World's Highest Addiction Rate* 2005; <http://www.washingtonpost.com/wpdyn/content/article/2005/09/22/AR2005092202287.html>. Accessed October, 2010.
12. Rafiey H, Narenjiha H, Shirinbayan P, et al. Needle and syringe sharing among Iranian drug injectors. *Harm Reduct J* 2009;6:21.

13. Meysamie A, Sedaghat M, Mahmoodi M, Ghodsi SM, Eftekhar B. Opium use in a rural area of the Islamic Republic of Iran. *East Mediterr Health J* 2009;15(2):425-31.
14. Narenjiha H, Rafiey H, Jahani MR, Assari S, Moharamzad Y, Roshanpazooch M. Substance-dependent professional drivers in Iran: a descriptive study. *Traffic Inj Prev* 2009;10(3):227-30.
15. Ahmadi J, Pridmore S, Alimi A, et al. Epidemiology of opium use in the general population. *Am J Drug Alcohol Abuse* 2007;33(3):483-91.
16. Walton-Moss B, McCaul ME. Factors associated with lifetime history of drug treatment among substance dependent women. *Addict Behav* 2006;31(2):246-53.
17. Preti A, Miotto P, De Coppi M. Deaths by unintentional illicit drug overdose in Italy, 1984-2000. *Drug Alcohol Depend* 2002;66(3):275-82.
18. Dalvand S, Agahi C, Spencer C. Drug addicts seeking treatment after the Iranian Revolution: a clinic-based study. *Drug Alcohol Depend* 1984;14(1):87-92.
19. Beman DS. Risk factors leading to adolescent substance abuse. *Adolescence* 1995;30(117):201-8.
20. Bennett EM, Kemper KJ. Is abuse during childhood a risk factor for developing substance abuse problems as an adult? *J Dev Behav Pediatr* 1994;15(6):426-9.
21. Brown SA. Life events of adolescents in relation to personal and parental substance abuse. *Am J Psychiatry* 1989;146(4):484-9.
22. Danielson CK, Amstadter AB, Dangelmaier RE, Resnick HS, Saunders BE, Kilpatrick DG. Trauma-related risk factors for substance abuse among male versus female young adults. *Addict Behav* 2009;34(4):395-9.
23. Hernandez JT. Substance abuse among sexually abused adolescents and their families. *J Adolesc Health* 1992;13(8):658-62.
24. Maltzman I, Schweiger A. Individual and family characteristics of middle class adolescents hospitalized for alcohol and other drug abuse. *Br J Addict* 1991;86(11):1435-47.
25. Newcomb MD, Maddahian E, Skager R, Bentler PM. Substance abuse and psychosocial risk factors among teenagers: associations with sex, age, ethnicity, and type of school. *Am J Drug Alcohol Abuse* 1987;13(4):413-33.
26. Labouvie EW, Pandina RJ, White HR, Johnson V. Risk factors of adolescent drug use: an affect-based interpretation. *J Subst Abuse* 1990;2(3):265-85.
27. Bragger U, Schurch EJr, Gusberty FA, Lang NP. Periodontal conditions in adolescents with cleft lip, alveolus and palate following treatment in a coordinated team approach. *J Clin Periodontol* 1985;12(6):494-502.
28. Biener K. Problems of smoking, alcohol and drug addiction in prisoners (author's transl). *Offentl Gesundheitswes* 1980;42(2):55-8.
29. Butters JE, Smart RG, Mann RE, Asbridge M. Illicit drug use, alcohol use and problem drinking among infrequent and frequent road ragers. *Drug Alcohol Depend* 2005;80(2):169-75.
30. Hafner H. Epidemiology of alcohol and drug addiction. Report on a WHO conference. *Fortschr Med* 1973;91(14):617-21.
31. Kryspin-Exner K. Relationship between alcohol and drug addiction. *Offentl Gesundheitswes* 1971;33(9):548-55.
32. Schmidt L. Relation between smoking, alcoholism, and drug addiction. *Rehabilitation (Bonn)* 1972;25(1):53-4.
33. Ghanizadeh A. Shiraz University students' attitude towards drugs: an exploratory study. *East Mediterr Health J* 2001;7(3):452-60.
34. Mohammad Poorasl A, Vahidi R, Fakhari A, Rostami F, Dastghiri S. Substance abuse in Iranian high school students. *Addict Behav* 2007;32(3):622-7.
35. Urberg KA, Degirmencioglu SM, Pilgrim C. Close friend and group influence on adolescent cigarette smoking and alcohol use. *Dev Psychol* 1997;33(5):834-44.
36. Miller P, Plant M. Truancy and perceived school performance: an alcohol and drug study of UK teenagers. *Alcohol Alcohol* 1999;34(6):886-93.
37. Miller P. Family structure, personality, drinking, smoking and illicit drug use: a study of UK teenagers. *Drug Alcohol Depend* 1997;45(1-2):121-9.
38. Chanin A. Toward an understanding of teenagers. Alternatives to drug abuse. *Clin Pediatr (Phila)* 1969;8(1):6-10.
39. Guthrie SK, Brower KJ, Karam-Hage M. Substance-Related Disorders. In: Chisholm-Burns MA, Wells BG, Schwinghammer TL, et al., eds. *Pharmacotherapy, Principles & Practice*. New York: McGraw-Hill, 2008:525-48.
40. Aytacilar S, Erkiran M, Kirisci L, Tarter R. Substance abuse and associated psychosocial risk factors among Turkish male adolescents. *Addict Behav* 2003;28(8):1419-29.
41. Bandason T, Rusakaniko S. Prevalence and associated factors of smoking among secondary school students in Harare Zimbabwe. *Tob Induc Dis* 2010;8:12.
42. Christensen H, Low LF, Anstey KJ. Prevalence, risk factors and treatment for substance abuse in older adults. *Curr Opin Psychiatry* 2006;19(6):587-92.
43. Gil AG, Vega WA, Turner RJ. Early and mid-adolescence risk factors for later substance abuse by African Americans and European Americans. *Public Health Rep* 2002;117 Suppl 1:S15-29.
44. Weinberg NZ. Risk factors for adolescent substance abuse. *J Learn Disabil* 2001;34(4):343-51.
45. Royo-Bordonada MA, Cid-Ruzafa J, Martin-Moreno JM, Guallar E. Drug and alcohol use in

- Spain: consumption habits, attitudes and opinions. *Public Health* 1997;111(5):277-84.
46. Young SE, Corley RP, Stallings MC, Rhee SH, Crowley TJ, Hewitt JK. Substance use, abuse and dependence in adolescence: prevalence, symptom profiles and correlates. *Drug Alcohol Depend* 2002;68(3):309-22.
47. Iliev Y, Akabaliev V, Doychinov I. Characteristics of adult acute poisoning mortality in a large industrial-agrarian region of Bulgaria during socioeconomic transition and crisis (1990-1998). *Vet Hum Toxicol* 2000;42(6):366-9.
48. Lamontagne Y, Garceau-Durand Y, Elie R, Blais S. [The young homeless of Montreal: a longitudinal study]. *Can J Psychiatry* 1988;33(8):716-22.
49. Ruiz-Perez I, Olry de Labry-Lima A. [Suicide in Spain today]. *Gac Sanit* 2006;20 Suppl 1:25-31.
50. Beauvais F. Drug use of friends: a comparison of reservation and non-reservation Indian youth. *Am Indian Alsk Native Ment Health Res* 1992;5(1):43-50.
51. Diaz CJ, Brands B, Adlaf E, Giesbrecht N, Simich L, Wright Mda G. [Drug consumption and treatment from a family and friends perspectives: Guatemala]. *Rev Lat Am Enfermagem* 2009;17 -:824-30.
52. Knight DK, Simpson DD. Influences of family and friends on client progress during drug abuse treatment. *J Subst Abuse* 1996;8(4):417-429.
53. Lacy WB. The influence of attitudes and current friends on drug use intentions. *J Soc Psychol* 1981;113(First Half):65-76.
54. Lagu T, Anderson BJ, Stein M. Overdoses among friends: drug users are willing to administer naloxone to others. *J Subst Abuse Treat* 2006;30(2):129-33.
55. Smart RG, Stoduto G. Interventions by students in friends' alcohol, tobacco, and drug use. *J Drug Educ* 1997;27(3):213-22.
56. Hammersley R. Drug addiction and crime. *Br J Addict* 1988;83(4):445-6.
57. Trace M. Tackling drug use in prison: a success story. *Drug Policy* 1998;9(4):277-82.
58. Jage J, Willweber-Strumpf A, Maier C. [Risk factors for substance abuse and dependence in opioid therapy for chronic noncancer-related pain]. *Schmerz* 2005;19(5):434-436, 437-40.
59. Compton WM, Volkow ND. Major increases in opioid analgesic abuse in the United States: concerns and strategies. *Drug Alcohol Depend* 2006;81(2):103-7.