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Substance Abuse among Iranian High School Students

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Abstract

Purpose of review—In this study, we reviewed data on drug use among high school students in Iran.

Recent findings—Published epidemiological studies in international and domestic journals show that drug use/abuse is a serious mental health problem in Iran. There is cultural support for opium in Iran, and also there is cultural tolerance for tobacco smoking, especially as water pipe smoking, in Iranian families. Alcohol, opium, and cannabis are the most frequently used illicit drugs, but there are new emerging problems with anabolic steroids, ecstasy, and stimulant substances, such as crystal methamphetamine.

Summary—There is serious drug abuse problem among Iranian high school students. It could be due to role-modeling by parents – mainly fathers – and also cultural tolerance of some substances. Early onset of tobacco smoking, with a daily use rate between 4.4% and 12.8% in high school students, is an important risk factor for other drug abuse problems. Use of all types of drugs, except prescription drugs, is more prevalent among boys. Alcohol is the most frequently abused substance, with a lifetime rate of at least 9.9%. Lifetime rates of opiate use – mostly opium – were between 1.2 and 8.6% in different parts of the country. As drug abuse is a frequent problem among Iranian high school students, it is necessary to design and implement drug prevention programs to protect them. Such programs, including life skills training and drug education, have been operating in recent years for Iranian students from kindergarten to the university level.

Keywords

addiction; drug abuse; high school; Iran; youth

Introduction

There is a long history of opium use in Iran. Opium use as a recreational substance has been recorded for more than four centuries. One of the first scientific descriptions of opium use in Iran was written by Dr. Jacob Eduard Polak (1818–1891), a Jewish Austrian physician who worked in Iran between 1851 and 1860 (1) among teachers of the first Iranian medical school. His detailed description of Iran and Iranians was published as a book with the original title “Persien, das land und seine bewohner.” In this book he wrote: “hashish-cannabis is used by some ethnic groups but opium use is a very popular habit and unlike

cannabis it has no negative social stigma or shame for users. It is not forbidden and every Iranian who can afford its cost uses it daily.” Whereas opiate use is still a very significant public health problem in Iran, as described below, it is not the only substance abuse problem in Iran. Adolescence is a particularly vulnerable period for initiation of drug use (2), and younger age at first drug use significantly increases the likelihood of more serious drug problems (3). As with all societies, a particular concern in Iran is the degree to which young people are involved in substance use/abuse. The purpose of this study is to review the current data that exist on the nature of substance use/abuse among high school students in Iran.

Current status of drug use in Iran

As opium production in neighboring Afghanistan has dramatically escalated over the past decade, Iranian society has been impacted more than any other (4–5**).

Although the vast majority of global opium seizures (83%) take place in Iran, every year tons of opium flow from Afghanistan to the rest of the world, and the biggest share – 40% – is through Iran (5**). Iran faces many problems along its eastern border, and much of the country’s supply reduction efforts are focused in this area. Global consumption of opium is estimated at 1100 tons per year, used by 4 million users; over 42% is estimated to be used in Iran. It is estimated also that Iran consumes 17 tons of heroin annually; this is 5% of global consumption. Iran has the highest rate of abuse of opiates in the world (6,7). In recent years, there has been increased use of heroin, crystal methamphetamine, and ecstasy.

There is no direct standard survey for finding the prevalence of drug abuse in Iran. But there are surveys that help in estimating the drug use situation. The last nationwide survey of drug use in Iran, carried out in 2007, was a rapid situational assessment (RSA 2007). This study is based on interviews with drug abusers in treatment centers, the justice department system and prisons, as well as interviews with key informants. It is not a household survey and, therefore, interpretation of the data should consider their limitations. Unpublished data from this survey (8) showed that there are 1.2 million drug-dependent people in the country out of a total population of 75 million people (1.6%). Although traditional drugs of abuse in Iran are opium and cannabis, in recent years there has been more use of heroin, crystal methamphetamine, and ecstasy. In RSA 2007, it is shown that 47.5% of Iranian drug abusers are married and usually have one or more children. Two recently published studies also showed that in different parts of the country a majority of the drug abusing population is married (9, **10**).

The use of drugs by parents is a particular concern, as parental drug use is a risk factor for offspring (11). Evidence has shown that family environment and mental health are inter-related in opiate addicts (12). Spousal (13) and child abuse (14) are more frequent in drug abusers than the general population. There are not many studies on women’s drug abuse in Iran, but RSA 2007 has shown that the male to female ratio is about 9:1 (8). Regarding age in this study, 18.9% of drug abusers were under age 24.

Main substances of use were opium (all forms) in 39.9% and heroin (all forms) in 46.3% of drug abusers interviewed in this study. Comparing these results with a previous RSA in

2004, which found that the main substance was opium at 58.1% and heroin was at 19.2%, shows that in recent years there has been a trend from less dangerous opiates toward more dangerous hard opiates. This is the first time in the history of drug use in Iran that heroin use is more prevalent than opium use. In Iran, different forms of opium are smoked, eaten/drunk, or, rarely, injected (15). Heroin is usually smoked, sniffed, or injected. In RSA 2007, the usual way of drug use for 18.7% of drug abusers was injection, and one third of all drug abusers had at least a one-time history of injection drug use. In two other studies, between 23 and 29% of drug users used by injection (16,*17*). Although the average Iranian drug-dependent person is likely to be married and employed, the average Iranian injection drug user is more likely to be unemployed and single or divorced (18). RSA 2007 has shown that, compared with previous reports, there has been a decrease in cannabis use and an increase in crystal methamphetamine use as the main substance used among the total population of drug abusers. Crystal methamphetamine was the main substance in 3.6% of interviewed substance-using persons.

High school students

There has not yet been a nationwide survey among adolescents in Iran like the Monitoring the Future (MTF) study in the United States or the European School Survey Project on Alcohol and Other Drugs (ESPAD). In this article, we review published papers in international and domestic journals as well as existing unpublished data describing substance use by young people in Iran. There are four main studies on drug abuse in high school students in different parts of the country. Drug abuse in these studies is considered to be the use of any illicit substances, including alcohol, cannabis, opiates (opium and heroin), ecstasy, and methamphetamine. Information about tobacco use is also included in these studies.

In 2006, Ziaaddini et al. (19) published a study on drug abuse among high school students in Kerman, a city in Southeast Iran. This city is near the eastern border with Pakistan and Afghanistan and has a traditionally high rate of drug abuse. In this study (Kerman Study), the rate for lifetime use of drugs in 3318 high school students was 26.5 % among boys and 11.5% among girls (19). Findings of this study have shown that the usual place of drug use is friends' home for 42.3% of boys and 70.4% of girls. Also 26.5% of the boys and 16.8% of the girls were using drugs during their attendance in school. In another study, conducted in 2009 in Zanjan, a city in the northwest of the country (Zanjan study), lifetime prevalence of drug abuse in high school students was 11.2% (20). The rate was significantly higher among boys than girls (18.9% versus 7.7%). In this study, poor school performance, depression, and cigarette-smoking parents were associated with higher rates of drug abuse. Ahamdi and Hasani (21) in Shiraz – a large city located in the southern part of the country (Shiraz study) – have found rates of lifetime use and current use of drugs to be significantly higher among boys than among girls. In this study, pleasure seeking, modeling, and tension release were the most common reasons for drug use. In a study in Tabriz – another city in the northeast (Tabriz study) – among 1785 male high school students, 12.7% had a lifetime history of alcohol use and 2.0% for other substances (22).

Tobacco

There are two usual ways of using tobacco among Iranian adolescents: cigarette smoking and a water pipe. The latter has been a common practice for centuries, mostly in the Middle East, but its use appears to be widespread among high school students even in the United States (23) and European countries (24). In the Zanzan study (20), a history of water pipe tobacco smoking in high school students was twice that of cigarette smoking (43.0% versus 21.8%). In Iran, like in most of the Middle Eastern and Islamic countries, there are traditional taboos and social behavioral limitations for girls. For example, in the Zanzan study (20), lifetime history of cigarette smoking was more than three times higher for boys than for girls, but the sex difference for water pipe smoking was less (see Table 1). It seems that smoking a water pipe is more tolerable in families compared with cigarettes, and its use does not bring the same degree of negative stigma for girls. One study in Lebanon has also shown a sex difference in cigarette smoking but not for water pipe smoking (25). Smoking a water pipe is a socially acceptable practice for adolescents in Iran (20), other Middle East countries (25–28), and in western countries, even for athletes, who are traditionally considered at low risk for tobacco use (29), and it appears acceptable for both boys and girls.

Regular (daily) cigarette smoking was more prevalent than water pipe smoking (12.8% and 7.4%, respectively) in the Zanzan Study, suggesting that use of cigarettes is more likely to develop as a significant problem behavior, whereas the water pipe is used more as a leisure hobby. The prevalence of daily smoking ranged from 4.4% and 12.8% across different high school samples (30,31). There is also a study of middle school students (grade 7), with a mean age of 13 years, which shows 7.4% frequency of cigarette smoking (32). Although the purchasing of cigarettes is not allowed in Iran for people under the age of 18, clearly for many youth, the age of smoking onset is much younger. Age of smoking onset was 11.7 years in Tehran (31) and 13.2 years in a multicenter national study (33) in Iran. Studies in Iran (34) and abroad have shown a relationship between youth's smoking and future drug abuse problems, so it is necessary for successful substance abuse prevention programs to address tobacco use in youth. Also there are studies that have shown an association between smoking and mental (35) and physical disorders (36).

Alcohol

In Iran, alcohol is considered an illicit drug and its use is banned for all age groups. Unfortunately this situation does not prevent its use among adolescents, and, in fact, alcohol is the most common illicit substance among Iranian high school students, especially among boys (20–22). Two studies in Kerman have shown lifetime prevalences for alcohol between 11.4% and 18.2% among male high school students and between 5.1% and 8.9% among females (19,37**). In RSA 2007, in a cross-country study, the mean age of first alcohol use was 17.8 years (8). In a study among high-risk grade 11 students in Tehran, 45.7% had lifetime experience of alcohol drinking (38). The rate of alcohol use was similar to the rate for tobacco smoking and much more than the rate for any other substance. In the Zanzan study, the lifetime history of alcohol use was 9.9% (20). The rate was significantly lower in girls (3.7 %) than in boys (16.3%). In this study, 16 boys out of 264 (6.1%) and none of the girls were current alcohol users.

Although alcohol consumption is illegal in Iran (it is banned by Islam and unlike many other countries there is no alcohol advertising (39) to promote use by youth), it is customary to have alcohol at various parties and ceremonies. In the Kerman study, 49.5% of boys and 25.4% of girls who ever used alcohol had used it at wedding ceremonies. It seems that there is a tolerant atmosphere in these situations even for adolescents regarding alcohol use. In the Kerman study, among those students with lifetime experience of alcohol use, 25.6% of boys and 19.4% of girls were using it daily (19). Whereas there is no comparative study between Muslims and other religious groups in Iran, some studies in Iran have shown that there is more tolerance for alcohol consumption among Christians than among Muslims (40).

Opiates

Iran has a long border with Afghanistan, the biggest producer of opium in the world, and opium use has a centuries-old tradition in Iran (41). Although there is negative stigma for heroin use, there is a traditional supporting culture for opium. In a household survey of 3840 people aged 15 and over, 17.9% admitted using opium at least once during their lives (42). As Agahi and Spencer reported nearly three decades ago, the problem for Iranian adolescents is exposure to role models of drug abuse; such models are more likely to be an adult family member than an adolescent peer, a reversal of what is usually found in western countries (43). They also found that in a sample of 14–18-year-old youth, 11% had used drugs, mostly opium (44). Modeling is the second most common reason for drug use in the offspring of opium dependents (11). Lifetime prevalence of opium and heroin use was 1.9% and 0.2%, respectively, in the Zanzan study. In this study, none of the high school students were current opiate users (20). Ahmadi et al. (21) reported that 2.3% and 0.8% of students were current users of opium and heroin in the Shiraz study. In Kerman study, one fourth to one third of high school students who had lifetime experience of opiate use – opium or heroin – were daily users of it (19). Although there is no cross-country study of youth drug use, it seems that the southeastern parts of the country, which border Pakistan and Afghanistan, show larger numbers of opioid users. In all studies, the rate of heroin use was far lower than the rate of opium use (Table 2).

Studies on the epidemiology of drug use in Iran show that all drugs are used more often by males than females (19–22, 45). The situation is the same for high school students. The Zanzan study reported that the lifetime prevalences of opium and heroin use in 264 male students were 3.8% and 0.4%, respectively. None of 273 female students had a lifetime history of opium or heroin use. In the Kerman study, among 3318 high school students, lifetime history of opium use rates were 11.7% in boys and 5.1% in girls. The numbers for heroin use were 5.5% and 0.2% for boys and girls, respectively.

Cannabis

Cannabis is used in Iran in both the form of grass (marijuana) and hashish. Studies have reported lifetime history of cannabis use at 0.2% in secondary school boys aged 12–14 (32) and 8.2% for high school boys aged 15–17 (20). The Zanzan study showed a 2.8% lifetime use of cannabis in high school students. The rate was 5.7% among boys, and none of girls had history of cannabis use (20).

In the Kerman study, lifetime history of cannabis use was 8.3% among high school boys and 2.8% among girls. Prevalence of daily cannabis use in this study was reported as 3.1% in male and 0.43% in female students (19).

Other drugs

There is a lack of studies on methamphetamine or cocaine. Although the four most common substances used by high school students in Iran are tobacco, alcohol, cannabis and opium (19–22), there have been some studies in recent years about other substances.

Prescription drugs

Rates of lifetime and daily use of prescription sedatives (mostly benzodiazepines) were 2.7% and 3.8%, respectively, in high school boys and 4.4% and 0.44%, respectively, in girls in the Kerman study (19). In the Zanzan study, lifetime use rates for prescription narcotic drugs, including codeine and tramadol, were 9.5% among high school boys and 16.8% among girls (20).

Codeine is usually supplied and consumed as codeine-containing pain-killer tablets that mostly also contain acetaminophen. Both acetaminophen-codeine tablets and tramadol tablets are prescription drugs, but some pharmacies sell them without a prescription. Codeine-containing tablets are among the most requested prescription drugs in Iran (46*). Actually there are reports that acetaminophen-codeine tablets are one of the best selling drugs in Iran.

Significant rates of use of prescription drugs by girls, who report very low rates of illicit drug use, suggest that prescription drug use is less stigmatized than illicit drug use.

It is also an important concern that, like in other countries (47), many users of these tablets are also abusing other substances.

Anabolic steroids

In the Zanzan study, the rate of lifetime and daily use of anabolic steroids was 6.3% and 0.56%, respectively, among high school students. Lifetime anabolic use was 11.0% among male students and 1.8% among girls. Shakeri et al. (48**) have shown that 11–20-year-old athletes who use anabolic steroids had a lower sense of self-efficacy and a more dysfunctional attitude than nonusers (48). Sepehri et al. (49**) showed that 23.7% of bodybuilding athletes under the age of 20 have used anabolic steroids, mostly oxymetholone.

Ecstasy

In the Tabriz study, lifetime history of ecstasy (MDMA) use was 0.83% (22). The prevalence of ecstasy use among 15–25-year-old people in Tehran was 18.5%, and it was higher among boys than girls (50). In another study on ecstasy use among 2328 high school students in Lahijan in the north of Iran, 2.4% had a lifetime history of ecstasy use (51). The rate in boys (3.35%) was significantly higher than in girls (1.25%). There is also one study

that has shown that a large number of ecstasy users were high school or university students (52).

Substance use and adolescent mental health

There are a large number of studies that have shown that various mental health disorders can be concordant with drug abuse problems. Zanganeh (53) stated that social isolation and lower socio-economic status can be associated with psychiatric disorders, including drug abuse. Emami et al. (54) have shown that 19.5% of 4599 high school students in Tehran have had mental health problems. The frequency of such problems was higher in girls than in boys. Alcohol and drug use can be associated with high risk sexual behavior (55) and other risk-taking behaviors in Iranian adolescents (56) and can be a risk factor for HIV transmission.

There is evidence that substance-using adolescents in Iran (19) and other countries (57) have greater psychological dysfunction. Childhood and family adverse events are also associated with more drug abuse problems in Iran and other countries (58–60). Drug abuse is also reported in association with impulsivity (30) and delinquent antisocial behaviors in Iran (22) as well as other countries (61–64). Adolescent drug use in Iran shows co-morbidity with mental disorders, especially depression and anxiety disorders. (20,37**).

The Zanjan study, using the Beck depression inventory, found that 26.7% of students with a drug abuse history have shown clinical (moderate to severe) depression, whereas this rate was 10.1% among students without a history of drug abuse, which is significantly lower ($P = 0.0001$). Pathological anxiety was also more prevalent in high school students with a history of drug abuse, but it did not reach the significance threshold. Drug abuse also has been shown to be associated with academic problems (20).

Conclusion: Implications of alcohol and drug use data

There are very important drug problems among youth in Iran. As drug abuse and addiction are biopsychosocial problems, we should keep in mind relevant cultural factors and co-morbidities. It seems that parents and schools fail to play a significant role in primary prevention in Iran, and families in which the father is a drug user pose a very significant risk factor.

Studies have shown that, for many adolescents in Iran, age of drug use onset is under age 18, and many of them used drugs for the first time in schools or friends' homes (37**). Many adolescent drug users had intra-familial (65*) and/or emotional problems (49*). Nearly half of drug-using university students in one study had been familiar with drugs since their adolescence (66). Considering this fact and also the rule that earlier first drug use leads to more drug problems later in life, it is necessary to initiate preventive programs as early as possible.

Adaptive motivational structure is important (67), and it has been shown that behavioral control can help Iranian adolescents to resist drugs (68). There are youth and family counseling programs in Iran that can be effective for behavior problems and, as DeJong et

al. (69) stated, these programs can be useful models that are culturally acceptable in other countries of the region (69). Although in Iran there are not yet comprehensive family-based or school-based drug prevention programs as in developed countries, some recent programs appear promising. Such programs include drug related life-skills training in kindergartens and primary schools, life skills training and drug education packages in high schools and universities, and parenting skills training programs promoting family bonding.

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Table 1

Lifetime history (%) of cigarette and water pipe smoking in Iranian high school students

	Cigarette	Water pipe
Girls	10.3	34.4
Boys	33.7	51.9
Total	21.8	43.0

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Table 2

Lifetime prevalence (%) of opium and heroin use in different studies

Study	Place/time	Population sex	Opium	Heroin
Ziaaddini et al. [19]	Kerman/2006	Both	8.6	3.2
Mohammadpoorasl et al. [22]	Tabriz/2007	Male	2.65	-
Nakhaee et al. [37**]	Kerman/2009	Both	5.2	1.5
Montazi et al. [20]	Zanjan/2009	Both	1.2	0.2

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