Pattern of illicit drug use in patients referred to addiction treatment centres in Birjand, Eastern Iran

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Abstract

Objective: To evaluate the pattern of use of opioid and other illegal drugs in patients seeking addiction treatment in Birjand, eastern Iran.

Methods: The prospective study was conducted from March 21, 2009 to March 21, 2010, and comprised all patients referred to the seven addiction treatment centres in Birjand. Data was obtained through pre-designed questionnaires and it was analysed using SPSS 16.

Results: Of the 700 substance users referred to the 7 centres and who volunteered to participate, 632 (90.3%) were males and 68 (9.7%) were females. The male/female ratio was ~ 9.3/1. Mean age was 34 ± 10.2 (range: 10-75) years. The type of drugs used included traditional drugs (n= 342; 48.9%) and newer modern drugs (n=314; 44.9 %). The mean age of the first experience with drugs was 21.91 ± 7.1 (range=0-60) years. There was significant different between the type of drugs used and the place of residence (p<0.019), age (p<0.0001), martial status (p<0.0001), occupation (p<0.006) and education (p<0.017).

Conclusion: The prevalence of illicit drug addiction was quite high. There seemed to have been a change in the pattern of drug use and in the type of illegal drugs used in the study area, from traditional drugs to new and modern drugs. As such, identifying risk factors related to addiction and the prevention of addiction should be one of the most important health priorities for the authorities.

Keywords: Iran, Birjand, Substance abuse, Epidemiological research, Drugs. (JPMA 63: 711; 2013)

Introduction

Substance abuse is one of the most preventable health hazards worldwide. Iran appears to have both traditional and modern drug use and abuse problems, and it appears to play an important transit role in the transference of opium and other drugs from Afghanistan to western countries.[1]

In western countries alcohol, cannabis, methamphetamine and heroin are the most common drugs used.[2] However, in Iran opium remains the most commonly used drug,[3] with opium poisoning and overdose being the major cause of drug-related hospital admissions in Iran.[4] There was a time when the elders used opium as an analgesic, but nowadays the younger generation shows greater interest in the use of other drugs such as heroin, hashish, buprenorphine, cocaine and ecstasy.[3] Moreover, Iranian crystal, Iranian crack, and recently tramadol are newer abused drugs by Iranian addicts in this decade.[5-7] In the eastern part of Iran, especially in the South Khorasan Province, there is no difference between crack and crystal in terms of active

ingredient content, because both are heroin.[7] Injection drug use (IDU) has increased during the past two decades in Iran, and has become a major medical concern.[2,8] The annual WHO report for 2008 indicated that approximately 200 million people in the world were addicted to opiates. According to this report, the highest prevalence rate of opiate abuse (2.8%) was observed in the Iranian population aged 15-46 years.[9] The highest percentage of the Iranian addicted population is represented by youth below 25 years of age (~ 60%), and a major portion of this population is students.[10] Surveys have shown an emerging trend of addiction in the country. Due to the United Nations International Drug Control Programme, the rate of addiction in the Islamic Republic of Iran has been increasing at a rate of at least 8% each year.[11] Although studies on substance abuse have been a priority for Iranian institutions, but there is rarely research on outcomes of substance abuse outside of Southern Iran.[3] There are different patterns of substance abuse between various countries, and even differences within a country, due to cultural and economic societal status. However, despite the pattern of substance abuse being well known in some parts of Iran, there is no comprehensive data available for several important regions of the country. One area lacking in information is the province of South Khorasan, located in eastern Iran. Given these facts, prevention of substance abuse has become one of the most important health priorities for Iranian health

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authorities and major medical concern for medical personnel. Using a public health approach, current study was conducted to determine the pattern of substance abuse in the eastern region of Iran.

Subjects and Methods

After approval by the Birjand University of Medical Sciences Review Board the prospective cross-sectional study was conducted from March 21, 2009 to March 21 2010, in the province of South Khorasan located in eastern Iran. There are 7 treatment addiction centres in Birjand; 3 in the public sector and the rest being private (Naji, Shafa, Rahayee, Nedaye salamat). The sample subjects were selected based on the date of referral to the addiction treatment centres. Data was collected via an anonymous structured questionnaire that had been previously validated by an academic expert and was filled out by a research assistant who was blinded to the outcome. The questionnaire documented demographic data that included age, gender, marital status, occupation, educational level, and the kind of drugs abused, the route of abuse, and the onset of drug abuse. The illicit drugs were divided into three groups: first traditional drugs (opium, shireh, or both); new drugs (crystal with heroin base); and other drugs (methadone, tramadol, diphenoxylate and cannabis, or ingested processed cannabis, Majoon Birjandi, the solid and traditional form of cannabis which is restricted to this part of the world).[12] Data was coded, and analysis was performed using SPSS version 16. The relationship between variables was examined using Chi-square and Fisher's exact test.

Results

During the study period, substance users volunteered to participated in the study from all those who were referred to the 7 treatment centres; 632 (90.3%) male and 68 (9.7%) female subjects. The male/female ratio was ~ 9.3/1.0. Mean age was 34.0±10.2 (range: 10-75) years. The majority of cases related to the inhabitants of urban areas (n=634; 90.6%). Self-employed individuals represented the largest group (n=304; 43.4%), followed by unemployed (n=153; 21.9%) and other workers (n=97, 13.9%) (Table-1).

The majority of subjects did not have college education, with only 9.4% (n=66) of cases having evidenced attainment of a university education. The majority of cases (n=467; 66.7%) involved married individuals. Traditional drugs were the most common type of drugs (n=342; 48.9%) abused, followed by newer or modern drugs (n=314; 44.9%), and other drugs were minimally abused (n=44; 6.3%). The majority of the abusers were in their third decade of life (n=264; 37.7%).

The pattern of drug use for different ages showed that age <30 years was associated with a highly significant

Table-1: Demographic characteristics of addicted participants.

	Variable	Number	Percent (%)
Gender	Male	632	90.3
	Female	68	9.7
Marital Status	Single	170	24.3
	Married	467	66.7
	Widowed/Separated	50	7.1
	Missing	13	1.9
Residence	Urban	634	90.6
	Rural	58	8.3
	Missing	8	1.1
Education	Illiterate	42	6
	Primary school	164	23.4
	Secondary school	229	32.7
	Diploma	185	26.5
	University	66	9.4
	Missing	14	2
Occupation	Students	24	3.4
	House wife	67	9.6
	Self-employee	304	43.4
	Worker	97	13.9
	Unemployment	153	21.9
	Office worker	33	4.7
	Missing	22	3.1
Illicit Drug Form	Traditional drugs[1]	342	48.9
	New drugs[2]	314	44.9
	Others	44	6.3
Method of drug administration	Smoking	315	45
	Ingestion	179	25.6
	Injection	15	2.1
	two or more routes	191	27.3
Age (Years)	20 year>	10	1.4
	20-29	264	37.7
	30-39	244	34.9
	40-49	122	17.4
	50≤	60	8.6

1: Shireh, Thariac, or Both.
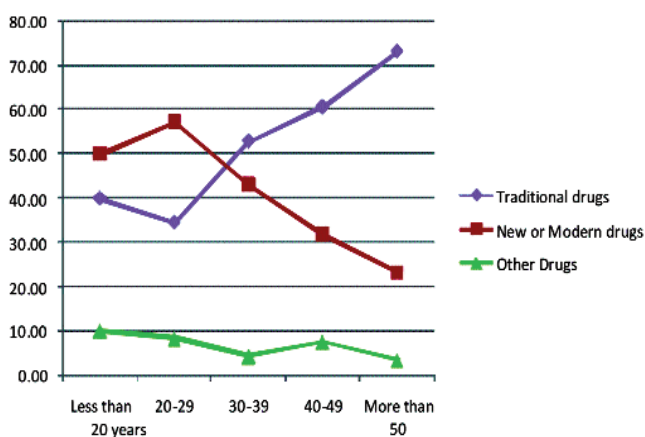2: Iranian Crystal alone or with other dependent drugs.

Figure: Comparison between ages in various substances users.

Table-2: Relationship between kind of drugs and demographic data.

Variable	Traditional Drugs (Shireh, Theriac,Both) Number (%)	New Drugs (Iranian Crystal alone or with others) Number (%)	Other drugs (Such as Illegal methadone, tramadol, diphenoxylate) Number (%)	P-value
Gender				
Male	309(48.9)	281(44.5)	42(6.6)	>0.05
Female	33(48.5)	33(48.5)	2(3)	
Residence				
Urban	299(47.2)	292(46.1)	43(6.8)	<0.05
Rural	38(65.5)	19(32.8)	1(1.7)	
Martial Status				
Married	265(56.7)	177(37.9)	25(5.4)	
Single	48(28.2)	109(64.1)	13(7.7)	<0.05
Widowed/Separated	20(40)	25(50)	5(10)	
Education Status				
Illiterate	27(64.3)	13(31)	2(4.7)	
Primary School	86(52.4)	71(43.3)	7(4.3)	<0.05
Secondary School	92(40.2)	121(52.8)	16(7)	
Diploma	94(50.8)	82(44.3)	9(4.9)	
University	35(53)	23(34.8)	8(12.2)	
Occupation				
Student	9(37.5)	13(54.2)	2(8.3)	
House Wife	33(49.2)	32(47.8)	2(3)	
Self employed	163(53.6)	121(39.8)	20(6.6)	<0.05
Worker	44(45.4)	47(48.5)	6(6.1)	
Un-employed	55(35.9)	88(57.5)	10(6.6)	
Office worker	24(72.7)	7(21.2)	2(6.1)	
Age(Years)				
<20	4(40)	5(50)	1(10)	
20-29	91(34.5)	151(57.2)	22(8.3)	
30-39	129(52.9)	105(43)	10(4.1)	<0.05
40-49	74(60.7)	39(32)	9(7.3)	
50≤	44(73.3)	14(23.3)	2(3.4)	

tendency for abusing newer drugs such as heroin and crystal, but beyond that, the interest moved to traditional drugs such as opium and shireh (Figure).

The mean age of first experience of drug use was 21.9±7.1 (range=0-60) years. Our study further revealed that 11.7% (n=82) of the participants started drug use at less than 15 years of age. The most common route of abused drug administration was smoking (n=315; 45%), followed by ingestion (n=179; 25.6%), and IDU (n=15; 2.1%). A total of 509 (72.7%) cases involved use of only a single method of drug administration, while 191 (27.3%) showed the use of more than a single drug administration route for abuse. In terms of comparison of the epidemiological data between two major kinds of drugs used, traditional and newer drugs, there were significant differences between the type of drugs abused and the addict's place of residence (p<0.019), age (p<0.0001), marital status (p<0.0001), occupation (p<0.006), and level of education (p<0.017) (Table-2).

However, there was no significant difference between the form of substance abuse and gender (p<0.456).

Discussion

The results showed that more than 90% of the study group were male, a finding similar to other studies carried out in other parts of Iran, which reported male predominance of addiction.[3,5,13]

This is in contrast with western countries which have shown no significant correlation between addiction and gender.[14] Limited information on the prevalence of drug abuse among Iranian women is available, and it is unclear whether the small number of female drug users in the current study sample is due to a very low prevalence of problematic drug use among women in Iran, or the sociocultural situation in Iranian society which surrounds women participants, making their roll unclear.[15] Thus, they are more likely to constitute a 'hidden' population, and are unwilling to seek treatment.[1] Reports from western countries have shown that drug abuse in women has been associated with greater stigmatisation, reduced service utilization,[16] and different treatment-seeking behaviours when compared to men.[17]

The groups with greatest drug addiction and abuse were those comprising individuals who were self-employed with low income (43.4%), followed by unemployed individuals (21.9%). The relationship between low income and the presence of addiction has been demonstrated by others.[18] These findings are in contrast with another study in Iran, which found addicted subjects more likely to be male, married, and employed.[13] The high prevalence of addiction in the low-income population and unemployed people in our study may be due to minimally available entertainment, poor culture, lack of hope and economical poverty, and the use of opiates as a pain-killer.[18]

However, other studies have shown compelling evidence suggesting that abusive drug use, particularly the use of opiates, cocaine and crack cocaine, is associated with an increased risk of unemployment, regardless of age or gender.[15] In a study in southern Iran, two-thirds of the participants were unemployed.[5] The relationship between addiction and unemployment is definitely clear. However, it cannot be called the only reason for addiction.[19] Addiction is obviously a multi-dimensional problem.[20]

The majority of cases that were referred for treatment in the study region were living in urban areas (more than 90%), which is similar to other reported studies.[13] There is limited data concerning the population of addicted people who live in rural areas in Iran. Economic reasons, long distance to urban clinics, cultural matters,[21] long duration of treatment, and urbanisation itself may all potentially contribute to the low percentage of rural cases in this study.

In our study the majority of addicts were married (approximately 70%). In an earlier study, the number of married drug abusers was slightly greater than singles.[5] In our study a much smaller group of about 7.1% consisted of widows, and divorced or separated subjects. The predominance of the married, addicted population in our study was similar to that reported in other studies.[13,15] One study revealed a relationship between the abuse of illicit drugs and divorce or separation, and it also reported that marriage provided a primary social support for reduced drug abuse in the married population.[22] The reasons for this group (separated, divorced, or widowed) representing only a small part of our study are: the spouses have greater motivation to obligate their partner to quit abusing drugs; addiction is acceptable in the traditional society of this area due to long historical use of opium in this region; and there is less education, and financial dependence on husbands[13] in this segment of society.

In our study the largest drug abuse group comprised people with secondary school education, with 6% being illiterate, and only 9.4% having had a university education.

The high preponderance of addiction cases in those with high school, or lower education, is similar to that observed in other studies (90%).[5,8,23]

In the present study, the mean age of substance abusers was 34 years, and the mean age of onset of drug consumption was 22 years. These findings correlated well with an earlier study where the corresponding numbers were 33 and 24 years respectively.[20] In another study, the numbers were 35 and 20 years respectively.[5] The average age of initiation of drug use reported in other studies has varied from 19 to 24 years.[8,24]

One of the surprising findings in our study was the earliest age of drug dependence during the gestational period prior to birth in 4 participants who became addicted during the pregnancy period from their addicted mother. In an earlier study, the youngest age of initiation of drug abuse was 8 years.[25]

Our study further revealed that 11.7% of participants started drug use at less than 15 years of age, similar to the study which showed that 22% of its cases started drug use less than 15 years of age.[26]

The majority of participants in this study were in their third decade of life. In other studies which were conducted in Tehran and Mazandaran (two industrial cities located in northern and central Iran), the participants maximum age range was 30-34 years.[15] This suggests that geographical area and access to drugs have a significant role in reducing the initiation of illicit drug use.

The most common route of drug administration in our study was smoking followed by ingestion. Very few cases involving intravenous drug abuse were observed, and there was a greater tendency towards other routes of drug administration.[14] These findings are in contrast with the study which found that 37% of its participants were intravenous drug abusers.[5]

The pattern of route of drug administration varies from culture to culture. In a study, it was noted that the addicted population thought that the intravenous route was a dirty and dangerous method. They also believed that injection was the path of sickness and that smoked opium is much safer.[18]

In eastern Iran, crystal is referred to as crack, a misunderstanding of the American slang for cocaine-rocks. So it is more correctly called Iranian crack, which mainly contains heroin. The available crack in Iran is totally different than the western crack. In the other parts of the world, the main ingredient of crack is cocaine, but in Iran it is heroin which may also contain morphine, caffeine, codeine, noscapine, papaverine, dextromethorphan, and acetyl

codeine or corticosteroids in varying amounts. Moreover, it is important to know that the slang word of drug abusers Crystal in the eastern part of Iran is a misunderstanding of the crystal meth (methamphetamine) and it is in fact heroin. Iranian Crystal is made in illegal laboratories using varying methods with no standardisation of preparation.[7]

Shireh is the term for the Iranian narcotic user who also abuses a preparation of opium called shireh. It is prepared by extracting the alkaloids from opium, followed by condensation and concentration by means of evaporation.[13]

In the current study illicit drugs were divided into three groups based on the prevalence of use of traditional drugs, versus newer modern drugs, and other drugs. It was found that there was no significant difference between traditional and newer modern drug usage classes. The consumptive pattern of abuse is variable in different parts of the world. It is known that in Africa, cannabis is the most commonly abused drug, and heroin, cannabis and crack (with cocaine base) abuse are the most common drug forms abused in North America.[27] However, in South and Central America cocaine abuse is a major concern 27, while in European countries cannabis, heroin, amphetamine and ecstasy (methylenedioxymethamphetaime) are the main abused drugs. In Asia, opium and cannabis have been the most commonly abused drugs for decades.[27] Opium has been used in Iran for approximately 300 years.[1]

The main reasons for drug abuse variation in different parts of the world are due to both economics, and geographic locality. For instance, LSD (lysergic acid diethylamide) and American crack are rare in Iran because of their high price. A changing pattern from opium smoking to heroin injection is a documented trend in South and East Asia.[15] Given this close prevalence between traditional drugs and newer more modern drugs of abuse, it seems that the general population of substance abusers in this area of Iran has shifted from opium to crystal (heroin).

There was a statistically significant difference between the form of substance abuse and place of residence: abusing traditional drugs in rural areas is predominant, while urbanisation makes less traditional drugs more easily available for numerous reasons. Urbanised areas are places of business, an environment affording good opportunity and convenient contact for buying and selling drugs. Thus, people in these urbanised areas are vulnerable populations that are in greater danger of exposure to illicit drugs than others. The pattern of abuse drug use in rural areas is dependent on lack of appropriate entertainment facilities,[18] lifestyle, low population density, poor access to treatment centres, poverty, and the high cost of transportation.[21]

Correlation between the form of substance abuse and

occupation was also statistically significant. Students, common workers, and the unemployed had a greater tendency to abuse newer drugs, but office workers and housewives favoured the use of traditional drugs. There is a traditional supporting culture for opium, but in contrast there is a negative stigma for heroin use.[28] We assume that less stigmatisation, an active role in society and family, and the non-supervision by others makes this group (office workers and housewives) prefer traditional drugs over new drugs. Common workers and the unemployed are not confined by such limitations. Tendencies for drug abuse in student groups are often due to temptation by friends and peer pressure, curiosity, modelling, seeking pleasure, and the feeling of self-confidence, prompting them to take greater risks to experience drugs with high potency and a high degree of dependence (new drugs).

With respect to age there was a surprising difference between those aged less than 30 years and over 30. The age of less than 30 years was associated with a highly significant tendency for abusing newer drugs such as heroin and crystal, but after this age the interest moved towards using traditional drugs such as opium and shireh. There is a long history of extensive use of traditional substances and self-administered remedies such as a pain-killers in Iran,[18] while drugs such as heroin, buprenorphine, cocaine and ecstasy are new to the Iranian population. These have found acceptance among youth and young adults,[3] and this trend is consistent with results in our study. The collective findings of the current study should serve as a warning for Iran's medical personnel to be more aware and responsive to medical complications associated with drug abuse by the younger generation.

In the light of its findings, it sounds practical to establish clinical treatment centres specifically for women for gender-based assessment, prevention, and treatment modalities. Besides more in-depth drug abuse prevention programmes are required. Investment in education within schools may be more effective. On the other hand prevention of the diversion of drug trafficking may reduce the excitement and enjoyment of youth towards of the evils of drug abuse. Finally, a well-designed, population-based investigation, with economic support to further evaluate substance use in rural areas, should be performed to better design appropriate treatment strategies and programmes for the rural drug abuse population.

The study, however, had its limitations. For instance, the small number of female dependent users may not be representative of all women in the study area. Besides, our findings may not be representative of the entire Iranian society, as our research focused on dependent users who were seen in clinical treatment centres. We evaluated all

patients who were referred to treatment clinical centers, those that predominantly were youngsters, those that were to get married or in the employment process, and so on. Logically, elders do not prefer to seek treatment unless there is financial problem. We selectively chose our subjects, and sampling was not done randomly. Thus, there are expected differences between those who accepted referral voluntarily and those who did not.

Finally, minor data was missing due to incomplete records of patients or lack of interest of the subjects in answering some minor questions. However, the missing data was inconsequential in nature and had no impact on the validity of our results.

Conclusion

There has been a change of pattern in terms of drug abuse in the study region of Iran from traditional drugs to new and modern ones. The shift is being led by the younger Iranians.

The region should take an active role with respect to reducing and restricting the transit of illicit drugs to other parts of Iran because it is a province neighbouring Afghanistan, which supplies approximately 90% of the opioid drugs to Iran.

Acknowledgments

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