Original Article

Predictors of initiation, continuation and transition of drug use in south-eastern Iran

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Abstract

Objectives: To identify factors associated with the initiation continuation, transition and cessation of substance abuse in Zahedan, Iran.

Methods: The retrospective study reviewed the profile of 536 addicts admitted to both public and private outpatient treatment centres in the study area. For each individual, data were collected on socio-demographic characteristics, initiation and patterns of drug abuse and any changes in the patterns. To analyze the data, Kruskal-Wallis, Chi-square, Log-rank test, Logistic regression and Cox proportional hazards models were used.

Results: The median age of the first drug abuse was 20 (95% CI: 19.7 - 20.3) years with significant heterogeneity by gender and marital status ($p < 0.001$). The age of the first drug use and marital status were significant factors for the continuation of drug use ($p < 0.001$). The study also indicated that male gender, single life, low level of education, early onset of substance use and type of first used drug act as facilitators for transition to new drugs ($p < 0.05$). Besides, the present study revealed the significant effect of marital status, education and type of first used drug on personal decisions towards drug use cessation ($p < 0.05$).

Conclusion: A number of predictive factors of substance abuse identified in the study are of utmost important for any preventive effort.

Keywords: Drug use, Initiation, Continuation, Transition, Cessation, Zahedan (JPMA 62: 698; 2012).

Introduction

The epidemic of illicit drug abuse has been a major threat to public health, harming millions around the world due to dependence on such substances or a range of other drug abuse-related health problems. Recent estimates (2009) from the United Nations Office on Drugs and Crime (UNODC) suggest that between 172 and 250 million people aged 15-64 years had used an illicit drug at least once in 2007.[1] The most commonly used illicit drugs were cannabis (3.3 - 4.4% of the population), amphetamines (16 - 53 million people), Cocaine (16 - 21 million people) and opium (16 - 20 million people) respectively.[1]

However, the characteristics and patterns of use differed from country to country and from time to time. For example, cannabis is the most commonly used illicit drug in North America, Western Europe and Oceania; whereas amphetamines and cocaine use are mainly concentrated in South-East Asia and North America.[2,3] In contrast, opium is the oldest and the most widely used narcotic in Asia. More than half of the world's opiate using population is believed to live in this continent, principally along the main drug trafficking routes close to Afghanistan.[1,2] Furthermore, there have been major changes in the pattern of drug use following the introduction and proliferation of new drugs, including smokable crack, ecstasy and other amphetamine-type stimulants.[1-5] Transitions in ways drugs are taken (i.e. from smoking to injection) are also of particular importance that have surfaced over the past several decades.[1-5]

Epidemiological studies examining the predictors of incidence, transition and discontinuation of long-term use of illicit drugs are limited, but studies mainly coming from highly industrialised countries have suggested that risk factors for drug dependence may differ between countries.[6-14] Overall, there is some evidence that age, early onset of drug use, male gender, parent's educational level, drug use pattern and social circumstances surrounding individuals may possibly play a pivotal role in the aetiology of illegal substance use initiation and continuation.[6-14]

Opiates, especially opium abuse, has a long history in Iran and dates back to the 17th century.[15,16] Since then, the number of opium addicts has been on the rise throughout the country, with concentrations in southeastern and business-centred cities located at the transit routes of drug trafficking from Afghanistan towards the European markets.[15,16] According to recent estimates, there are about 4 million individuals who use opioids in Iran, with 1.16 million at the level of dependence.[17] More importantly, amphetamine-type stimulants (ATS), including crack, crystal, ecstasy and others, have recently gained popularity in Iran to the extent that there is a trend of opiate abusers shifting to new types of drugs.[15-18] Thus, Iran's health policy-makers are faced with widespread problems related with opiate abuse. The primary aim of this study, therefore, was to provide information on the characteristics and patterns of drug use, together with information on factors associated with initiation, transition and the intention to quit substance abuse in southeastern Iran.

Patients and Methods

The study design was a retrospective review of drug users admitted to both public and private outpatient treatment centres in Zahedan, the capital of Sistan-Baluchistan province. The city is the most underdeveloped, desolate and the poorest in Iran.[18] It is located in the southeast of the country, bordering Pakistan and Afghanistan, which is the main producer of opium in the world.[18]

The survey population comprised the profile of 536 addicts who were admitted to the treatment centers during the study period. Data reviewed related to all the 700 drug users registered with the centers, but only 536 files had sufficient information to qualify for the purpose of this study. A comparison of demographic characteristics of individuals showed no significant difference between the cases that were included and excluded. Therefore, the study sample can be considered a good representative of those addicts admitted to the treatment centers. However, a sizable minority of addicts might possibly have taken treatment in private centres, but that factor seems not to be influential on the study outcome.

Drug users seek treatment from these centres voluntarily and they were often accompanied by their family members. In-depth interviews were conducted with drug users and/or their family members attending the outpatient centres. In each institution, trained and experienced staffs were responsible for completing a comprehensive nationally designed questionnaire for each drug user immediately following the admission to the treatment centres. The questionnaire contained several standardised forms which were drafted based on the list of research questions, including the following variables: socio-demographic characteristics of drug abusers, initiation and patterns of drug abuse and any changes in the patterns, expenditure on drugs. The records of sampled cases were then reviewed carefully by the researchers and experienced staff in this field to extract the required information for the purpose of this study. For ethical consideration, confidentiality was ensured and no names or identification information were extracted from the file of the drug users.

Data were stored and analysed using the SPSS Version 15. Descriptive statistics were used to explore the frequency distribution of qualitative data and to provide central and dispersion parameters for quantitative data. Additionally, median, hazard ratio, odds ratio and their 95% confidence interval were given whenever necessary. Kruskal-Wallis, Chi-square, Log-rank test, Logistic regression and Cox proportional

hazards models were used to identify predictive factors for initiation, transition and discontinuation of drug abuse after adjusting for other covariates among the study population. Tests for interaction between covariates were conducted by adding interaction terms to the model.

Results

A total of 536 substance-abusing individuals admitted to the treatment centres were included in the analysis. The majority of them were young (approximately two-third were 30 years or younger), married (63%), and males (91%) either with low level of education or illiterate (about 50%) and without stable jobs (65%). Most of the addicts (76%) had started drug abuse at the age of 25 or younger. Opium was the most commonly used illicit drug with a rate of 78%, followed by heroin and cannabis amongst the traditional drugs, whereas crystal was the most frequent used drug from the new generation of substances. The median amount of money spent daily on drugs was about US $5.

The median age of the first drug abuse was 20 (95% CI: 19.7 - 20.3) years with significant heterogeneity by gender and marital status ($p < 0.001$). The median age of initiation was 26 years for women compared to 20 years for men; and 18 years for single against 21 years for married individuals (Table-1). In a multiple-adjusted analysis, at a given age, men had 90% greater risk of starting drug use than women [HR 1.90 (95% CI: 1.38 - 2.64]. Similarly, singles were twice more likely to initiate substance abuse at any age compared to the married; [HR 1.95 (95% CI: 1.60 - 2.38)]. There was no evidence of interaction between gender and marital status ($p = 0.40$). Moreover, residential status ($p = 0.87$) and educational level ($p = 0.12$) did not show a significant relationship with age of first drug abuse (Table-1).

Time period from the first drug experience to the regular use or addiction was slightly less than a year for approximately half of the participants, and between 1 to 3 years for one-fourth of them. When controlling for covariates, there was a significant main effect of marital status ($p = 0.002$) and the age of the first drug use ($p < 0.001$) in predicting the time gap between onset and dependence. At any point of this time period, singles were more likely than married individuals to become addicted [HR 1.47 (95% CI: 1.20 - 1.82)]. In addition, individuals aged 18 to 30 and older than 30 years had about 40% [HR 1.40 (95% CI: 1.01 - 1.93)] and 80% [HR 1.79 (95% CI: 1.24 - 2.60)] greater risk of being addicted than those aged 18 years or younger at any given time interval, respectively. However, there was no significant relationship ($p > 0.05$) between other factors, including residential status, gender, education and type of drug use with the time interval linking onset of substance and habitual use. We found no evidence of interaction between the age of first drug use and marital status ($p = 0.71$).

Factors related to the duration of addiction in a multivariate model were also worked out (Table-2). Overall, the median duration of regular drug use among individuals before treatment was 5 (95% CI: 4.6 - 5.4) years with significant differences by marital status ($p < 0.001$), education ($p = 0.027$) and type of used drug ($p = 0.008$). The duration of drug use was 5 years for married addicts compared to 4 years for singles. Consequently, singles were 1.42 (95% CI: 1.16 - 1.74) times more likely to quit addiction at any given time than married drug users after adjusting for confounders. Moreover, there was an inverse association between the level of education and continuation of drug use. The median addiction period decreased notably from 6 years for illiterate participants to 4 years for high school and 2 years for university graduates. Therefore, the likelihood of drug use cessation at any point of time was higher among educated drug users compared to the illiterate ones - from 30% for secondary school to 80% for university graduates. The type of used drug was another factor contributing to the treatment of substance users in the current study. Approximately, half of the crystal and crack users decided to give up addiction after 2 and 3 years respectively. The corresponding value for opium and opium sap users was 5 years. Hence, crystal [2.11 (95% CI: 1.62 - 2.74)] and crack [1.65 (95% CI: 0.96 - 2.83)] users were about two times more likely to give up drug dependence compared to those using opium and opium sap at any time. Test for heterogeneity showed no evidence of interaction between the abovementioned covariates ($p > 0.05$). Furthermore, we found no evidence of association between gender ($p = 0.49$), residential status ($p =$

Table-1: Hazard Ratio (95% CIs) for the association between risk factors with age of first drug use.

Risk factor	Age of first drug use Median (95% CI)	Unadjusted HR (95% CI)	Multiple-adjusted HR (95% CI)
Gender			
Female	26.0 (22.2 - 29.7)	1.00	1.00
Male	20.0 (19.6 - 20.4)	2.13 (1.55 - 2.93)	1.90 (1.38 - 2.64)
Marital status			
Married	21.0 (20.3 - 21.7)	1.00	
Single	18.0 (17.4 - 18.6)	2.07 (1.76 - 2.53)	1.95 (1.60 - 2.38)
Divorced	19.0 (17.6 - 20.4)	1.25 (0.79 - 1.99)	1.26 (0.79 - 2.01)
Total	20.0 (19.7 - 20.3)	-	-

Table-2: Hazard Ratio (95% CIs) for the factors contributing to drug cessation.

Factor	Duration of addiction Median (year) (95% CI)	Unadjusted HR (95% CI)	Multiple-adjusted HR (95% CI)
Marital status			
Married	5.00 (4.42 - 5.58)	1.00	1.00
Single	4.00 (3.43 - 4.57)	1.43 (1.18 - 1.74)	1.42 (1.16 - 1.74)
Divorced	7.00 (4.24 - 9.76)	0.96 (0.60 - 1.55)	0.96 (0.60 - 1.56)
Educational level			
Illiterate	6.00 (2.98 - 9.02)	1.00	1.00
Elementary	6.00 (4.44 - 7.56)	1.04 (0.72 - 1.49)	1.14 (0.78 - 1.66)
Secondary	5.00 (4.11 - 5.89)	1.22 (0.88 - 1.70)	1.33 (0.94 - 1.89)
High School	4.00 (3.21 - 4.79)	1.44 (1.04 - 1.99)	1.59 (1.13 - 2.24)
University	2.00 (0.79 - 3.21)	1.68 (1.14 - 2.48)	1.77 (1.18 - 2.68)
Type of used substances			
Opium&Opium sap	5.00 (4.37 - 5.63)	1.00	1.00
Crystal	2.00 (1.48 - 2.52)	1.94 (1.50 - 2.49)	2.11 (1.62 - 2.74)
Crack	3.00 (2.54 - 3.46)	1.93 (1.15 - 3.25)	1.65 (0.96 - 2.83)
Heroin	4.00 (0.00 - 17.9)	0.54 (0.26 - 1.09)	0.51 (0.25 - 1.05)
Total	5.00 (4.60 - 5.40)	-	-

Table-3: Odds Ratio (95% CIs) for the factors predicting transition to a new drug.

Factor	Transition No. (%)	Unadjusted OR (95% CI)	Multiple-adjusted OR (95% CI)
Gender			
Female	7 (14.6)	1.00	1.00
Male	155 (31.8)	2.73 (1.20 - 6.21)	2.49 (0.99 - 6.27)
Marital status			
Married	87 (26.2)	1.00	1.00
Single	66 (37.7)	1.71 (1.15 - 2.52)	1.85 (1.14 - 3.00)
Divorced	8 (40.0)	1.88 (0.74 - 4.75)	2.14 (0.74 - 6.22)
Educational level			
Illiterate	21(41.2)	2.80 (1.21 - 6.51)	5.20 (1.87 - 14.4)
Elementary	25 (29.8)	1.70 (0.77 - 3.72)	2.26 (0.91 - 5.60)
Secondary	54 (35.8)	2.23 (1.09 - 4.55)	2.38 (1.06 - 5.34)
High School	50 (27.2)	1.49 (0.73 - 3.04)	1.62 (0.73 - 3.59)
University	12 (20.0)	1.00	1.00
Age of first drug use			
? 18 (years)	83 (44.1)	9.22 (2.74 - 31.0)	7.86 (2.22 - 27.9)
18.01 - 25.0	59 (26.9)	4.30 (1.28 - 14.5)	4.66 (1.32 - 16.4)
25.01 - 30.0	14 (26.4)	4.19 (1.11 - 15.8)	4.72 (1.20 - 18.6)
> 30	3 (7.9)	1.00	1.00
Substances first used			
Opium & Opium sap	156 (37.4)	11.3 (4.84 - 26.2)	11.8 (4.97 - 28.2)
Crystal, Crack, Heroin	6 (5.0)	1.00	1.00
Total	162 (21.8)	-	-

0.75) and age of first drug abuse (p = 0.65) with the duration of addiction.

Independent variables associated with transition in addictive consumption pattern among the study population was also noted (Table-3). Generally, vast majority (78%) of habitual drug users in the study had started with opium or opium sap from which 62% stayed on the same pattern during their addiction period. The remaining opium users moved to other drugs, including heroin (10%), crystal (24%) and crack (4%). Similarly, 5.6% crystal users shifted to crack. Conversely, the minority which had started off with heroin (1.9%) and crack (3.5%) had continued with the same drugs during their dependence. Examination of multiple adjusted odds ratios suggested that marital status (p = 0.026), education (p = 0.014), age at first drug use (p =0 .005) and type of first used substances (p < 0.001) were potential risk factors for transition to other drugs in the study. After adjusting for other factors, singles were 85% [OR = 1.85 (95% CI: 1.14 - 3.00)] more likely to move on to new drugs than the married ones. On the contrary, there was an inverse association between the level of education and the

age of participants at first drug use with their subsequent transition to new drugs. Compared to the subjects who initiated drug use at age 30 years or older, the likelihood of moving to a new drug decreased considerably from 7.86 (95% CI: 2.22 - 27.9) for those started at age 18 or younger to 4.72 (95% CI: 1.20 - 18.6) for individuals who used drugs for the first time between 25 to 30 years. Similarly, the risk of transition dropped from 5.20 (95% CI: 1.87 - 18.6) among illiterate addicts to 1.62 (95% CI: 0.73 - 3.59) for high school participants compared to the university graduates. Furthermore, opium and opium sap users were approximately 12 times (95% CI: 4.97 - 28.2) more likely to switch to a new drug during their dependence compared to crack, crystal or heroin users. Again, test for heterogeneity showed no evidence of interaction between the aforementioned covariates ($p > 0.05$).

Discussion

The results from this study comprise a picture of predictive factors for drug use initiation, continuation, transition as well as cessation. Five domains of predictors were examined, including gender, marital status, educational level, age of first drug use and the type of first used substance. Male gender as well as marital status had an important bearing on the initiation of substance use. Additionally, the age of the first drug use and marital status were significant factors for the continuation of drug use. The study also suggested that male gender, single life, low level of education, early onset of substance abuse and the type of first used drug acted as facilitators for transition to new drugs. Regarding factors influencing personal decisions on drug use cessation, there were significant main effects of marital status, education and the type of first used drug when taking other variables into account.

Results from epidemiological studies have generally suggested that the use of illicit drugs is a preliminary male problem. For example, a study in Venezuela[6] has shown that the age of first use differed by gender to the extent that females initiated drug use later than did males. Similarly, another study in Mexico City[8] found that the likelihood of early initiation of drugs was four times greater among males than females. Two more recent studies[14,19] have also shown that males are more likely to use substance or become long-term users. Consistent with these findings, our study has confirmed the essential role of gender in the initiation of use and transition to new drugs. The present study suggests 90% excess risk of early initiation of substance abuse among men compared to women. Additionally, the study found that males are 2.5 times more likely to switch to new drugs compared to females. It has been speculated that males initiate and continue to use drugs to increase social bonding with other male drug users, enhance their sense of self esteem, and for seeking sensation and relief from general boredom.

Prior studies have suggested that low educational aspirations, academic failure and poor school adjustment are risk factors for adolescent substance abuse.[11,20,21] According to these findings, higher education was also significantly associated with drug use cessation. We also observed a significant association between education and drug use continuation/cessation as well as transition to new drugs. Data from the current analysis illustrated that college-educated addicts were 80% more likely to quit substance abuse compared with illiterate drug users. Besides, the likelihood of switching to new drugs was five times greater among illiterate drug users compared with college-educated addicts.

Several studies have emphasised the buffering role of the family environment against substance abuse.[9-11,13] These studies indicated that being married predicts a greater decrease in drug use over time, relative to being single, being separated or cohabiting. Moreover, they suggest that marriage is not only a protective factor against drug abuse, but it is also associated with better outcome over time amongst drug users or treatment-seeking users. It has been said that marital satisfaction and closeness might possibly be a protective factor during the course of interventions for those with substance use disorders. In line with these findings, our study demonstrated that being single is one of the most consistent predictors of initiation and continuation of illicit drugs as well as of switching to new drugs during the course of addiction.

Moreover, the type of first used drug has been shown as a predisposing variable influencing the chance of later substance problems and transition. The results of Cox proportional hazards model in the current study suggested that opium abusers were more likely to switch to crystal, crack, and heroin use. Conversely, people who used new generation of drugs, including crystal and crack, had a greater likelihood of entering treatment in the current study. A study by Rounsaville and Kleber[22] revealed that those individuals seeking treatment were more likely than those not seeking treatment to have legal problems related to their drug use, poor social functioning, and affective psychological disorders. Similarly, Kessler et al.[9] have suggested that cocaine and heroin users are more likely than those using other substances to lead to impairments or symptoms that promote treatment seeking. Therefore, the type of used drug, its severity and social and health consequences associated with these forms of drug abuse might be possibly an essential factor influencing treatment entry among drug users or transition to new drugs. Another reason for switching from opium to new generation of drugs might possibly be the fact that opium does not give a comparable 'high'. Furthermore, opium is costly and not easily available, while crystal, crack and heroin are available and affordable in the region.

Additionally, the findings indicated that people initiating drug abuse at an older age had a greater likelihood of continuing with habit. Consistent with our findings, Siegal et al.[23] showed that older people were significantly less likely to get into

treatment than younger people. It is not clear why older people were more likely to continue with drug abuse. Younger people were possibly less trapped in the drug use or more frightened by it, and then feel the need for treatment and/or discontinuation of drugs. Secondly, the fear of stigmatisation and impaired disability to fulfill social role functioning due to drug use might be another factor influencing younger people to discontinue drug abuse. On the other hand, we found that the odds of transition to new drugs were greater among individuals who had commenced drug use at adolescence and easly adulthood. This may contradict the abovementioned argument, but it reveals the fact related to the availability and affordability of new drugs at study setting. In the study area as well as other parts of the Iran, new generation of drugs could be found frequently at very low prices compared to opium which is costly and unavailable.

Finally, the median age of the initiation of drug use estimated from the substance users was 20 years which was in line with some of the previous studies[24] which demonstrated that about half of drug users had commenced use in adolescence and early adulthood. Therefore, greater attention for reducing social access to substances is needed for prevention efforts prior to and during high school.

There were several limitations that should be considered while interpreting these findings. Firstly, the study used self-reported information which might have introduced some reporting biases. Secondly, the data have been collected for other purposes than the aims of this study that preclude further analysis on other possible predictor variables. However, to our knowledge, this is the first study to explore some of the factors that may influence the pattern of drug use in Iran.

Conclusion

The findings of the study have clear public health implications. Firstly, comprehensive efforts ought to be made to delay the onset of drug use in general. Secondly, an interventionist approach based on local information is required to decrease individual risk for drug dependence, its continuation and transition to new drugs in southeastern Iran.

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References

1. World Drug Report 2009 [Internet] [Vienna]: United Nations Office on Drugs and Crime (UNODC), United Nations; 2009; pp 307. (Online) (Cited 2011, March 10). Available from URL: http://www.unodc.org/documents/wdr/WDR_2009/WDR2009_eng_web.pdf.
2. World Health Organization. Psychoactive substance use: epidemiology and burden of disease. In: ATLAS on substance use (2010) - Resources for the prevention and treatment of substance use disorders. Geneva. Switzerland, 2010, pp 7-22.
3. Substance Abuse and Mental Health Services Administration. Results from the 2009 National Survey on Drug Use and Health: Volume I. Summary of National Findings. (Office of Applied Studies, NSDUH Series H-38A, HHS Publication No. SMA 10-4856 Findings). Rockville, MD: Substance Abuse and Mental Health Services Administration.
4. Uchtenhagen A. Substance use problems in developing countries. Bull World Health Organ 2004; 82: 641-2.
5. Guide to Drug Abuse Epidemiology. [Internet]. [Geneva]: World Health Organization, Department of mental health and substance dependence non-communicable diseases and mental health cluster; 2000; 124 p. (Online) (Cited 2011, March 10). Available from URL: http://whqlibdoc.who.int/hq/2000/a58352_PartA.pdf.
6. COX RB, BLOW AJ, MAIER KS, PARRA CARDONA JR. Covariates of Substance-Use Initiation for Venezuelan Youth: Using a Multilevel Approach to Guide Prevention Programs. J Stud Alcohol Drugs 2010; 71: 424-33.
7. Kokkevi A, Gabhainn SN, Spyropoulou M. Early Initiation of Cannabis Use: A Cross-national European Perspective. J Adolesc Health 2006; 39: 712-9.
8. Bojorquez I, FernÁNdez-Varela H, Gorab A, SolÍS C. Factors associated with illegal substance use initiation among young students in Mexico City. Drug Alcohol Rev 2010; 29: 286-92.
9. Kessler R, Aguilar-Gaxiola S, Berglund P, Caraveo-Anduaga J, DeWit D, Greenfield S, et al. Patterns and Predictors of Treatment Seeking After Onset of a Substance Use Disorder. Arch Gen Psychiatry 2001; 58: 1065-71.
10. Hayatbakhsh MR, Najman JM, Bor W, O'Callaghan MJ, Williams GM. Multiple Risk Factor Model Predicting Cannabis Use and Use Disorders: A Longitudinal Study. Am J Drug Alcohol Abuse 2009; 35: 399-407.
11. Kim IJ, Zane NWS, Hong S. Protective factors against substance use among Asian American youth: A test of the peer cluster theory. J Community Psychol 2002; 30: 565-84.
12. Isralowitz R, Rawson R. Gender differences in prevalence of drug use among high risk adolescents in Israel. Addict Behav 2006; 31: 355-8.
13. Heinz AJ, Wu J, Witkiewitz K, Epstein DH, Preston KL. Marriage and relationship closeness as predictors of cocaine and heroin use. Addict Behav 2009; 34: 258-63.
14. Wang J, Deng XJ, Wang JJ, Wang XW, Xu L. Substance use, sexual behaviours, and suicidal ideation and attempts among adolescents: findings from the 2004 Guangzhou Youth Risk Behaviour Survey. Public Health 2009; 123: 116-21.
15. Jafari S, Movaghar A, Baharlou S, Spittal P, Craib K. Trends of Substance Use in Southern Iran: a qualitative study. The Internet J Epidemiol 2008; 6.
16. Mokri A. Brief overview of the status of drug abuse in Iran. Arch Iranian Med 2002; 5: 184-90.
17. Hjk Yassami MT, Shahmohammadi D et al. Epidemiology of Drug Abuse in I.R. Iran; Ministry of Health and Medical Education; Drug Control Headquarters 2002; (not published, In Persian).
18. Koushesh H, Afshari R. A new illicit opioid dependence outbreak, evidence for a combination of opioids and steroids. Drug Chem Toxicol 2009; 32: 114-9.
19. Fang S-Y, Chen C-Y, Chang IS, Wu EC-H, Chang C-M, Lin K-M. Predictors of the incidence and discontinuation of long-term use of benzodiazepines: A population-based study. Drug Alcohol Depend 2009; 104: 140-6.
20. Galea S, Nandi A, Vlahov D. The social epidemiology of substance use. Epidemiol Rev 2004; 26: 36-52.
21. Stronski SM, Ireland M, Michaud PA, Narring F, Resnick MD. Protective correlates of stages in adolescent substance use: A Swiss national study. J Adolesc Health 2000; 26: 420-7.
22. Rounsaville BJ, Kleber HD. Untreated Opiate Addicts: How Do They Differ From Those Seeking Treatment? Arch Gen Psychiatr 1985; 42: 1072-7.