

Original Article

The Effects of Demographic Factors and Cigarette Smoking Status on Drug Treatment Success Rate in Outpatient Treatment and Rehabilitation Centers

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Abstract

Background: This was an analytical historical cohort study based on an existing data base study conducted in different areas of Tehran. The present study determined the effect of demographic factors and cigarette smoking status on success rate of addiction treatment in outpatient treatment and rehabilitation clinics for substance abusers.

Methods: We accomplished our study in outpatient clinics authorized by the “welfare organization,” which included three governmental treatment centers and private centers among those located in 22 regions of Tehran. Data were collected using a checklist, which contained demographic characteristics, personal information and information about prevention, treatment and follow-up records of 1372 patients. Factors associated with addiction treatment success rate were reviewed using multiple logistic regression tests.

Results: Our study showed that addiction treatment was successful in only 258 cases (18.8%). The final multiple regression model showed that single and married patients were 2.18 times ($P=0.033$) and 2.70 times more successful in quitting than divorced, or separated cases ($P=0.005$). In addition, patients who lived in rental or mortgaged houses were 1.43 times more successful than homeowners ($P=0.036$). More than 90% of participants in this study were daily smokers at the time of the study. Patients who did not have a history of smoking were 1.69 times more successful than ex-smokers ($P=0.007$).

Conclusion: Based on our study results only a few people were successful in addiction treatment; marital status, type of housing, residential status and smoking status were the most important factors associated with the outcome of addiction treatment.

Keywords: addiction treatment, dependency, drug, smoking

Introduction

Human health and community development have an inseparable relationship. Whatever threatens health is a danger for community development and welfare, too.¹ Substance abuse is one of the most important public health problems worldwide. Globally, the United Nations Office on Drugs and Crime in 2010 estimated that 155 to 250 million people (3.5% to 5.7% of the population aged 15 – 64) used illicit substances at least once in 2008, and in 2006 28% smoked tobacco.² Iran has high rates of illicit drug abuse in the world and the rate of consumption of illicit drugs in country seems to be alarming.³ According to accessible estimations, approximately 1.8 to 3.3 million people use drugs in Iran and like many countries worldwide, substance use and abuse is a major obstacle in Iran.⁴

At present, in order to differentiate between physical and psychological aspects of drug addiction, the concept of the term “dependence” is used rather than the term “addiction”; dependency is a series of clinical symptoms and changes occurring following drug abuse in behavior, cognitive, and physiological status of an individual.

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During recent decades, Iran has greatly suffered from drug abuse and its consequences. Although the practice of smoking opium is not a current issue and has been present in this country for centuries, it has currently turned into a malignant social phenomenon with widespread social, physiological, familial, and economic impact. Emergence of intravenous drug use along with transmission of infectious diseases including HIV and HCV has added further to the burden.⁴ The care of people using illicit opiates has changed over recent years.⁵ Mojtahedzadeh et al. in their study in Iran in 2008 showed that 71% of intravenous drug abusers had AIDS or were HIV positive.⁶ The national cost of drug abuse in Europe is 34 billion Euros annually, which is equal to 3% of gross domestic product (GDP) in all European countries.⁷

One of the efficient indicators for successful treatment of drug addiction and rehabilitation is drug detoxification, considered the first step for patients attempting rehabilitation.⁵

Successful detoxification occurs when the patient has physiological and psychological stability with no serious medical or mental condition and continues rehabilitation programs two to three weeks after drug addiction treatment.⁸

Curiosity is one of the main factors that lead young people to drug abuse.⁹ Smoking is the gateway of drug abuse and those who smoke rarely use other illicit drugs.¹⁰ Alahverdi Pour et al. in their study in 2005 in Tehran showed that 34.9% of students had been offered cigarettes,¹¹ and more than 70% of Iranian college students had smoked cigarettes before taking illegal substances/drugs for the first time.¹² Some demographic factors affect the initiation and consumption of illicit drugs as well as the intensity of drug craving^{12,13}; therefore these factors may also play a role in treatment success rate.

Treatment for substance abusers has evolved from inpatient care to intensive outpatient care.¹⁴ Despite efforts to treat drug abusers in Iran, to our knowledge, only a few studies were in this realm of science due to specific cultural and social issues and the unique situation of substance abuse in Iran.³ Based on our reviews, a comprehensive research study that can determine the effect of demographic factors and cigarette smoking status on success rate of drug treatment has not been performed in Iran. Therefore, the present study determined the effect of demographic factors and cigarette smoking status on success rate of addiction treatment in outpatient treatment and rehabilitation clinics for substance abusers.

Materials and Methods

This was an analytical historical cohort study based on an existing data base study undertaken during the years 2006 to 2009 to determine factors influencing successful addiction treatment. Our study population represented patients referred to drug abuse treatment and rehabilitation clinics in Tehran. We had to accomplish our study just in outpatient clinics authorized by the “welfare organization”. We included all three governmental treatment centers. Private centers, however, were not equally distributed among all 22 regions of Tehran, but were mostly located in three regions. Therefore, after counseling with local experts in each region we chose three private outpatient treatment centers (OPTs) based on a triage system (quality: high, acceptable, or weak). After coordination with those in charge, 10% of the existing files and records of a total of 1372 patients were studied.

Data were collected with a checklist that contained 78 questions, including demographic characteristics (8), personal information (21), treatment information (35), and information on prevention and follow-up (14). At the beginning of this study, a qualitative sample study was performed by using methods such as observation and group discussions with therapists and their clients representing public and private substance abuse centers in Tehran in order to design the final checklist. Based on this initial draft, the final checklist was prepared. The draft was then piloted, approved and sponsored by faculties of Shaheed Beheshti University of Medical Sciences. The checklist was finalized after collecting comments and necessary corrections and changes were done. The study protocol was approved by the Darius Research Center Ethics Committee. The scale of the Registration Office in England¹⁵ was used in order to determine the family’s social class. Individuals were divided based on occupation into six categories: top-class experts and managers, low-ranking experts and managers, supervisors, clerks, and lower-skilled workers, semi-skilled workers, and unskilled labor, or unskilled. Using this type of social classification in comparison with other social categories related more to adverse health behaviors, including smoking and alcohol use.

Demographic factors and smoking status

In this study, demographic characteristics including sex, age, marital status, type of housing, education, social class, status of permanent residence, smoking status (including current and ex-smokers), and the age of smoking initiation were evaluated.

Successful detoxification

Measure of success in drug detoxification in this study was based on the Iranian National Guideline on Drug Treatment and

Rehabilitation, which is at least one negative urine test for drugs and starting treatment with naltrexone after a naloxone challenge test (NCT). Thus, successful patients remained opioid-free for at least 7 – 10 days, or finished their opioid agonists’ therapy for the mentioned period of time were considered successful in drug detoxification.

Data analysis

Data analysis used SPSS for Windows version 16 software and $P < 0.05$ was statistically significant. Factors related (demographic characteristics and smoking status) with successful detoxification were evaluated by multiple logistic regression test. Bivariate and multivariate analyses were performed with binomial logistic regression, respectively. For all statistical tests, $P \leq 0.25$ was statistically significant. Variables correlated with the outcome variable of successful detoxification in univariate logistic regression with $P \leq 0.1$ were entered in multiple logistic regression.

Results

The majority of patients who referred to substance abuse treatment and rehabilitation centers were men (95.2%), whereas only 4.8% were women. The mean age of patients was 35.48 ± 10.57 years (range 14 to 75 years). More than 20% of these people were illiterate or at elementary level; educational level of 35.9% was at high school or middle school level, 32.4% had diploma, and only 10.9% had a college degree. In this study, 30.6% were single, 61.7% were married, and the remaining (7.7%) were divorced, separated, or widowed. Participants in this study were from low social classes, and none belonged to social classes I and II (experts and top managers, and low rank experts and managers categories). Most clients (38.3%) were at the lowest social class (simple or unskilled workers) and most lived in mortgaged or rented houses in the city (Table 1).

Smoking status

More than 90% of participants in this study were daily smokers and 88.1% of them smoked in the past; most (73.8%) began smoking before the age of 20 (Table 2).

Factors associated with successful detoxification

In this study, participants abused opium (34.4%), crack (31.9%), and other illicit drugs, and only 258 cases (18.8%) succeeded in addiction treatment. In order to evaluate factors related to successful detoxification, gender, marital status, education, housing type, social class, permanent residence, daily smoking, ex-smoking, and the age of smoking onset (Tables 3 and 4) were assessed by logistic regression models. The final multiple regression model revealed that single patients were 2.18 times ($P=0.033$) and married patients 2.70 times ($P=0.005$) more successful in quitting than divorced or separated patients. Patients living in rental or mortgaged houses were 1.34 times more successful than home owners ($P=0.036$) and those living in suburbs were 8.92 times more successful than patients living in urban areas ($P=0.003$). Also, patients who did not have smoking experience in the past had 1.69 times more chance for successful quitting than ex-smokers ($P=0.007$; Table 5).

Table 1. Demographic characteristics of patients studied.

| Profile | Number | Percentage |
|------------------------------|--------------|------------|
| Gender (male) | 1306 | 95.2 |
| Age | 35.48±10.57* | — |
| Marital status | | |
| Single | 420 | 30.6 |
| Married | 846 | 61.7 |
| Divorced, Widowed | 106 | 7.7 |
| Housing | | |
| Personal | 349 | 25.4 |
| Rent, Mortgage, other | 1023 | 74.6 |
| Education | | |
| Illiterate or primary school | 285 | 20.8 |
| Second grade or High school | 493 | 35.9 |
| Diploma | 444 | 32.4 |
| College Degree | 150 | 10.9 |
| Social Class | | |
| Experts and Managers | 116 | 8.5 |
| Skilled workers | 304 | 22.2 |
| Semi-skilled workers | 427 | 31.1 |
| Unskilled workers | 525 | 38.3 |
| Permanent residence | | |
| city | 1364 | 99.4 |
| Village | 8 | 0.6 |

*Mean ± SD

Table 2. Smoking status in sample population.

| Profile | Number | Percentage |
|--------------------------------|--------|------------|
| Daily smoking status | | |
| Yes | 1241 | 90.5 |
| No | 125 | 9.1 |
| Unknown | 6 | 0.4 |
| Smoking experience in the past | | |
| Yes | 1209 | 88.1 |
| No | 157 | 11.4 |
| Unknown | 6 | 0.4 |
| Smoking initiation age | | |
| 20 years or less | 916 | 73.8 |
| More than 20 years | 325 | 26.2 |

Table 3. Association between demographic characteristics and addiction treatment success rate based on univariate regression.

| Variable | Odds ratio (CI 95%) | P-value |
|--|---------------------|---------|
| Gender | | |
| Male | 1.71(3.64–0.80) | 0.2 |
| Female (Reference) | — | — |
| Age (year) | 0.99(1.00–0.98) | 0.28 |
| Marital status | | |
| Single | 2.05(4.12–1.02) | 0.04 |
| Married | 2.48(4.86–1.26) | 0.008 |
| Divorced, Widowed | — | — |
| Housing | | |
| Personnel | Reference | — |
| Rent, Mortgage, other | 1.36(1.88–0.98) | 0.006 |
| Education | | |
| Illiterate or primary school (Reference) | — | — |
| Second grade or High school | 1.01(1.46–0.70) | 0.92 |
| Diploma | 0.78(1.28–0.60) | 0.87 |
| College Degree | 0.65(1.12–0.37) | 0.12 |
| Social Class | | |
| Experts and Managers | 0.97(1.62–0.58) | 0.68 |
| Skilled workers | 1.10(1.57–0.77) | 0.57 |
| Semi-skilled workers | 0.81(1.13–0.58) | 0.22 |
| Unskilled workers (Reference) | — | — |
| Permanent residence city (Reference) | — | — |
| Village | 7.31(30.82–1.27) | 0.007 |

Table 4. Association between smoking status and addiction treatment success rate based on univariate regression.

| Variable | Odds ratio (CI 95%) | P-Value |
|--------------------------------|---------------------|---------|
| Daily smoking status | | |
| Yes (Reference) | — | — |
| No | 1.34(2.47-1.15) | 0.18 |
| Smoking experience in the past | | |
| Yes (Reference) | — | — |
| No | 1.68(2.47-1.15) | |
| Smoking initiation age | | |
| 20 years or less | 1.23(1.71-0.89) | 0.18 |
| More than 20 years | — | — |

Table 5. Association between marital status and permanent location status with addiction treatment success rate based on multivariate regression

| Variable | Odds ratio (CI 95%) | P-value |
|--------------------------------|---------------------|---------|
| Marital status | | |
| Single | 2.18(4.49–1.06) | 0.033 |
| Married | 2.70(5.40–1.35) | 0.005 |
| Divorced, Widowed | — | — |
| Housing | | |
| Personal (Reference) | — | — |
| Rent, Mortgage, other | 1.43(2.00–1.02) | 0.036 |
| Permanent residence | | |
| City (Reference) | — | — |
| Village | 8.92(38.48–2.06) | 0.003 |
| Smoking experience in the past | | |
| Yes (Reference) | — | — |
| No | 1.69(2.49–1.15) | — |

Discussion

This study was the first to be performed in Iran and results revealed that marital status, type of housing, permanent residence, and no-past smoking history were the most important factors in determining the success rate of addiction treatment. The majority of the respondents (95.2%) were males, which was in agreement with many studies.^{4,6,16} Female substance abusers are stigmatized in Iran as they are, by and large, rejected by their family and society because of the patriarchal structure of families and illegal nature of their behavior. These attitudes and misconceptions result in a variety of harms and damages, including public apathy, undiagnosed mental illnesses, in addition to inaccessible treatment and rehabilitation programs for women. It seems that in order to change community attitudes towards addiction as a disease, more efforts must be made for women such as establishing special drug abuse treatment and rehabilitation centers.^{17,18} The sex ratio reveals that a thorough and sustained assessment must be conducted on females' substance abuse when providing prevention and treatment interventions. In this study, both single and married patients were more successful than those divorced, separated, or widowed, which clearly shows that those with a stronger family support are more successful. Taghva et al.,¹⁶ in showed a significant relationship between single patients and drug use relapse rate, which is different from our results. This difference can be due to marital status classification in their study, which consisted of two categories of single and married; possibly those divorced, separated, or widowed were put in the single group. Involvement of a patient's family in the treatment and rehabilitation process leads to the formation of a support network, which plays an important role in prevention of substance abuse relapse.^{19,20} Narimani and Sadeghieh in 2008 recommended that patients learn coping strategies and receive support from their families in addition to detoxification and rehabilitation in order to reduce their physical symptoms.²¹ Urbanization and its related problems cause structural and functional damages to the urban community, amongst them a serious damage is the increase in health problems such as drug addiction. Some researchers believe that the main reasons for these damages are chaos, flaccidity, and weakness in urban communities.^{19,22} The results of this study revealed that people who lived in rural areas were more successful in addiction treatment, which can be an important finding for authorities and those involved in social issues. It seems that problems of urban communities have negative effects on the course of treatment. In this study, patients who

resided in rental or mortgaged houses were 1.34 times more successful than home owners, which could be due to their greater attempts for quitting because of the high costs of addiction. A study conducted in Iran suggested that smoking prevention programs reduced the use of other illegal substances.¹² According to the results of this study, no smoking history increases the probability of a successful drug treatment, which is in accord with other studies that tobacco consumption accelerates the process of addiction to illegal drugs.²³ The above mentioned correlation is not precisely specified, and the high prevalence of smoking in addicted patients could reflect physiological interactions to reduce withdrawal symptoms. However, given the results of this study it seems that designing and implementing interventions aimed at reducing smoking leads to an increase in the success rate of addiction treatment. Also, development and implementation of interventions aimed at smoking cessation and addiction treatment simultaneously could be useful. Many studies indicate that there are high motivations for receiving addiction treatment in patients who are receiving smoking cessation services^{23,24} and that quitting smoking does not leads to substance abuse relapse in these patients.^{25, 26} Also, it is important for tobacco control policies to determine their target groups with high prevalence of smoking and offer them specialized interventional services. Participants in this study were from low socio-economic classes; therefore, a study of higher socioeconomic classes in this area can provide useful information. We hope that the results of this study can be useful for planning more successful substance abuse treatments and be able to make necessary changes in treatment and rehabilitation programs, therefore providing common solutions to suit individual circumstances.

Limitations

The reader should pay attention to this fact that the studied population was only who participated and finished Well-fare organizations treatment interventions program. Thus the participants who did not continue the program due to any reasons such as not being motivated or other limitations are not concluded in this population.

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