

The Process of Substance Abuse Onset in Women: A Cross-Sectional Study in Hamadan, Western Iran

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Background: Drug addiction is a drastic problem in women's life which is growing rapidly and has attracted a lot of attention in Iran's academic community who investigate addiction. Process of addiction in women highly differs with men; moreover, individual, familial and social consequences of addiction for women are much more intense than that of the men.

Objectives: This study aimed at achieve a holistic view on the onset of drug addiction and factors related to the continuation of drug abuse in female drug addicts in Hamadan province, Iran.

Materials and Methods: Fifty nine addicted women who were admitted to the only rehabilitation and treatment center for addicted women in Hamadan and volunteered to participate in this cross-sectional survey were chosen. Following clinical interviewing and completing the health questionnaire, they were asked to fill up a standard questionnaire to obtain demographic information including complete and comprehensive questions about sociodemographic and familial states which were effective in onset, continuation and cession of drug abuse.

Results: The most common drug used by 48 women (81.35%) was th opium, followed by crack (8.47%), heroin (1.69%), methadone (1.69%) and cannabis (1.69%). Mean age of the first time experience of cigarette smoking was 17.11 ± 9.22 years. Also, the mean age of the first time drug substance use was 27.62 ± 10.46 years and the mean duration of drug use was 5.2 ± 12.0 years. Among studied women, 74.57% used drugs on a regular basis. General Health Questionnaire results indicated that 74.6% of the studied women had suboptimal general health. Twenty six women (44.6%) were referred to a psychologist or psychiatrist. The main reason for referring to a psychologist or psychiatrist was addiction withdrawal in 19.35%, depression and anxiety in 5.06%, and familial problems in 12.9% and headache in 9.68%. Among the examined individuals, 50.8% had once decided to quit, 23.7% for two times, 11.9% for three times, 8.5% for four times and 1.7% for sixteen times.

Conclusions: Significant differences are expected regarding the various patterns of onset, continuation and cession of drug abuse between the women and men. There are also different incentives for participation of women in the treatment processes which is dependent on the country's social and cultural features.

Keywords: Opioid-Related Disorders; Substance Abuse Treatment Centers; Women; Hamadan

1. Background

Illicit Drug use poses a major public health problem around the world, mainly affecting young people. Current estimates suggest that Iran has the highest rate of opium addiction per capita in the world (1). It has been suggested that multiple elements contribute to the process of drug use. In the recent decade, drug addiction among women has been studied in many research studies. The main topics of these research studies are mostly drug abuse disorders, etiologic concerns and social and cultural characteristic of drug-addicted women in the developed and developing countries. It should be stated that disease specific features in various areas, necessitate specific interventions and treatments (1). Women are the

first-line victims of social vulnerabilities and deviations. Among these deviations, addiction is one of the most important issues. Most of the people think that drug abuse is primarily a male-specific phenomenon. In the other words, there is a general belief in Iranian society that women abuse drugs less often than the men, because even smoking cigarettes among women and girls is considered socially unacceptable. Although, accurate statistical data on the addicted women population in Iran is not available, but according to some studies, 6.9 percent of addicts in the country are women (2). Iran's Ministry of Health also reported that there is one addicted woman per eight addicted man (3). According to Iranian prisons'

Implication for health policy/practice/research/medical education:

This work sheds light on the processes leading to addiction in women, differences in this regard between the men and women which imply the need for different treatment strategies.

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officials, 50 percent of female inmates are in prison because of drug smuggling and addiction (4). Quoted by the same authorities these numbers are increasing in recent years. The data on the patterns of drug abuse in Iran in 1998 showed that around 81% of the drug users were 20 to 34 years old (5).

In a qualitative study in 2006 conducted in the large prisons of the country, women addicted to IDU (Injection Drug Use) were reported only in three prisons out of six prisons in the study, and the rate of IDU was reported to be less than 10% among the prisoners. In recent years, between two and six percent of drug users are women. From the separate data obtained between 1998 and 1999, more than fifty percent of addicted women were in three provinces of Kerman, Khorasan and Tehran. In general, according to the current studies, number of opioid-addicted women until 2005 is estimated between 100 to 150 thousand women or 0.6 to 0.8 % of all women above 15 years (6). Obviously, the real figure of opioid users is much higher. It can be estimated that the ratio of addicted women to men in the country is within the range of 1 to 13 to 1 to 23. Rate of heroin addiction in women is alarming and the number of injection drug users in the country is estimated to be four to nine thousand people (7).

Maremmani et al. study (2010) attempted to analyze the potential gender differences among a group of heroin addicts seeking treatment at a university-based medical centre. The central modality of treatment at this centre was methadone maintenance. Among the patients entering the program there seemed to be an emerging pattern of males who tended to use heroin as their opiate of choice, and were more likely to combine it with cannabis, while females were more likely to use the street methadone, with adjunctive use of ketamine, benzodiazepines, hypnotic drugs and/or amphetamines. Women are at higher risk of abusing opioids through a pathway of initial prescription in the form of painkiller use, and later to resort to street methadone to satisfy prescription pain killer addiction (8).

Cannabis abuse among women in the general population is not considerable. Due to the various reasons, estimation of the extent of alcohol consumption is not possible and requires further studies. Some studies suggested a significant prevalence of abuse of psychotropic drugs among women (9) and perhaps it is the most common type of drug addiction in Iranian women.

It seems that using cannabis (marijuana) is not common in the general population of adult women, but it is commonly used among certain groups of women. Consumption of alcohol, cannabis and opium in female students seems to be low in some parts of the country. Despite the scattered preliminary statistics, we can no longer simply say that only a few women are involved in drug abuse. However, many addicted women and girls are not willing to refer to the treatment centers, because in the Iranian society female, addicts are la-

beled with raffish tags. Thus, most of them hide their addiction, so obtaining real figure of female addicts is not possible. Few studies have been conducted in Iran about predominant causes of addiction in women and also their needs, job demands and social and familial problems, especially regarding drug treatment. Study of addiction requires proper consideration of the social and cultural characteristics of communities, as interpretation and explanation of the obtained results based on these characteristics is more logical and accurate. The generalization of results should be done carefully. Disregarding specific issues related to addicted women will lead to less effective treatment. Considering multifaceted effects of women's health on the society implies that this issue requires further studies.

2. Objectives

The main goal of the present study was to achieve a holistic view of the onset, continuation and cessation of drug abuse among Iranian women.

3. Materials and Methods

In a cross-sectional study, all women with a history of addiction to opiates such as methadone, who entered maintenance treatment program in Hamadan, Iran, were enrolled in the study. Among the women who had entered the maintenance treatment program of opioid addiction in Hamadan centers, qualitative-quantitative interviews with 59 people were completed. Interviews conducted by researchers at the National Center for Cognitive Studies-Laboratory of Nervous Addiction, Tehran University of Medical Sciences were used in this study to design various forms of data collection in addition using of international instruments like the ASI questionnaire with high integrity and validity and observance of time limits. Questionnaire with 10 sections and 10 sub-goals of the project was designed. It included 20 qualitative questions and 60 quantitative questions. Questionnaire was evaluated in the pilot study by giving it to 10 women with the features mentioned the internal correlation between each area was 59 to 83 percent respectively. In addition, and for surface and content validity, questionnaires were evaluated by three experts of psychology and psychiatry and the formal validity was also confirmed. The General Health Questionnaire GHQ28 for general health status of individuals in the areas of anxiety, depression, and physical illness was used. This questionnaire is now one of the most useful tools of public health and is frequently used in research studies in Iran.

4. Results

As Shown in Table 1, the average age of participants in the study was 36.61 years ranging from 14 to 62 years. About 50% of people had elementary school education, 23.7% secondary education and 27% had high school education or higher levels. About 42% of people had private

homes, 55.9% lived in rented rooms or apartments, and one person had not any special place to live. Most of the participants (76.3%) were unemployed, 11.9% had a part-time job and only 11.9% had full-time jobs. Financial support of 38.2% of them was from their husbands. Thirty three (55.9%) were permanently or temporarily married, 28.9% were divorced and widowed, 10.2% were single and 5.1% were currently separated. Among 53 women who were married, the age of marriage ranged between 11 to 51 years. Overall, the average age of marriage of these cases were 18.38 years. Also among 46 women who answered question of lasting marriages, the marriage lasted at least 2 years and a maximum term of 46 years, the mean was 21.52 years. The most physical illnesses associated with addiction in these women were hypertension, followed by central obesity, chronic headaches and migraines, diabetes mellitus, arthritis, and tooth decay, respectively. Only eleven of these patients were currently under treatment for these diseases and 48 subjects did not follow their treatment due to economic dilemmas. Twenty six women (44.8%) had verbal arguments with other family members on a daily or weekly basis and 33 (55.93%) declared the rate and frequency of verbal arguments in the past month to be unfrequent or and rare. Most of the verbal conflicts and arguments in the last month in 12 persons were with spouse (28.57%) and parents (23.81%) followed by children, relatives and friends each with a rate of 16.66% and lastly were with strangers with the rate of 14.28%. During the past two months, two women with their husband, two women had physical conflict with their parents, two with children, three with strangers and one with relatives and friends. In other words, 16.95% of participants had a recent history of physical conflict and 83.05% had no history of physical conflict.

General Health Questionnaire results indicated that 74.6% of studied women had suboptimal general health and 25.4% had good general health status. Twenty six women (44.6%) were referred to a psychologist or psychiatrist. The main reason for referring to a psychologist or psychiatrist was addiction withdrawal in 19.35%, depression and anxiety in 5.06%, and family problems and headaches in 12.9% and 9.68% of women, respectively. Six women had a history of hospitalization in psychiatric wards and 53 (89.83%) had not been yet hospitalized in any psychiatric hospital. In comparison with the other drugs, lorazepam, alprazolam and propranolol were prescribed more often for these individuals and some drugs such as neurotryptilyn, clonidine, imipramine and amitriptyline were prescribed less often. The majority of women (60.34%) described the first experience of smoking cigarettes as a sedative, delightfully and power generating experience (Table 2). On the other hand, 39.65% had a bad feeling, skin tingling, dizziness and nausea, and lethargy after the first smoking experience. In comparison with the experience of the smoking cigarettes, first experience of using drugs in most of the women was described as pleasant (81.35%). The first and most common drug used for 48 persons

(81.35%) was the sap/opium, followed by crack (8.47%), heroin (1.69%), methadone (1.69%) and cannabis (1.69%). Most of the women (41.24%) described opium inhalation, while crack smoking and heroin smoking were in second place and third place, respectively. The average duration of drug use was 62 months ranging from 8 months to 32 years. Among the study women, 74.57% had used drugs on a regular basis. In contrast, 25.43% have said their drug usage pattern is irregular. Twenty three women (38.98%) before taking action for receiving the used opium and 23.71% used crack. Fifty two women (88.10%) reported that before their dependence on drugs, one of their family members was using drugs. Opium and sap were the most common drugs consumed among the family members of these individuals. Among the examined individuals, 30 cases decided once to quit, 14 cases two times, seven cases three times, five cases four times and one case 16 times had tried to quit drugs. The highest frequency for quitting was observed in 23 to 40 years age subgroup, nevertheless some cases were reported to quit in the very low ages of 14 to 20 and very high ages of 50 to 59 years old. The most important methods by which they tried to quit were: quitting with the aid of a drug rehabilitation center (86.44%), quitting by self imprisonment at home (6.19%) and quitting with self-treatment (11.36%). Fifteen patients (25.42%) resumed the drug abuse after 100 days of drug abstinence, 19 cases (32.20%) continued the abstinence for 100 to 200 days, 13 cases (22.3%) 200 to 500 days and 12 cases (20.33%) 500 to 2555 days. Most cases, (59.32%) decided to quit as a conscious and personal decision with different reasons, 25.42% of the cases were encouraged and supported by father, mother, sister and brother to quit and in 15.25% aunt, uncle or other family members, neighbors and friends encouraged them to quit. About 47.17% had good sexual satisfaction in marriage life, and 20.75% and 32.07% had no good sexual and marital satisfaction, respectively. Most respondents reported that they did not have extramarital sexual activities, but the single respondents and only 4 married respondents had these extramarital sexual activities. The most frequent reasons for these extramarital sexual activities were personal interest, lack of or inadequate relationship with spouse, drug providing by the person with whom they had extramarital sex, and as a way to obtain the money to buy. Fifty four percent had never used condoms and 38.97% used condoms often. Eighty four percent had no criminal records, and only 15.3% had criminal convictions. Out of 13 cases with criminal records, eight had been charged and jailed for buying and selling drug, three cases due to drug use and two cases because of having extramarital affair. Only 3% of the relatives of these patients had AIDS. Twenty five percent of individuals considered medical rehabilitation therapy, 27.12% psychotherapy and counseling and 25.42% considered combined medication and psychotherapy as the most effective treatment for drug abuse, and finally, 5.08% believed that group therapy is the most effective way for the treatment of addiction.

Table 1. Demographic Features of the Study Population

	Data
Age, Mean \pm SD, y	36.61 \pm 5.6
Education level, No. (%)	
Illiterate	10 (16.9)
Primary	19 (32.2)
Guidance	14 (23.7)
High school	4 (6.8)
Diploma	15 (20.3)
Occupational status, No. (%)	
Unemployment	45 (76.3)
Full time employment	7 (11.9)
Part time employment	7 (11.9)
Living status, No. (%)	
Owner house	25 (42.4)
Rental house	33 (55.9)
Homeless	1 (1.7)
Marital status, No. (%)	
Single	6 (10.2)
Married	33 (55.9)
Widow	10 (16.9)
Separated	3 (5.1)
Divorced	7 (11.9)

5. Discussion

Most of obtained evidence about the prevalence of drug abuse and addiction in women are from several years before Iran's revolution on 1979 and after the 1999, it implies there has been a 20 years gap in research in this field in Iran. In most of the studies, only the numbers of drug users have been mentioned without mentioning the gender of users. One important point is that drug abuse in men is significantly higher than women (10, 11). Even in the few studies where the gender of users have been evaluated the class of drug has not been mentioned and mostly only the major type of addiction such as smoking, alcohol and drugs have been mentioned without differentiation. Four studies investigated the prevalence of opioid abuse in the general population of women older than 15 years and eight studies were examined in some specific groups of women. Regarding the first type of studies, two were performed from 1976 to 1978 and one was performed in 2001. The methodology of these studies was taking urine test from house to house in Tehran, Hamadan and Hormozgan provinces with a total sample size of 1303 people. The presence of morphine in urine was reported to be 1.3 to 13.3% of surveyed women, the lowest rate was from Tehran and the highest was from Hormozgan province (12). In the later study in 2001 which was performed in the emergency rooms and by face to face interviewing, 20.7% of the one

Table 2. Information on Smoking and Drug Abuse

	Data
Major type of abused drug, No. (%)	
Alcohol	1 (1.69)
Methamphetamine	1 (1.69)
Cannabis	4 (6.78)
Opium inhalation	48 (81.35)
Crystalline heroin	4 (6.78)
Injected heroin	1 (1.69)
Type of drug use before seeking treatment, No. (%)	
Methamphetamine	3 (3.39)
Crystalline heroin	2 (3.39)
Crack	14 (23.71)
Opium inhalation	23 (38.98)
Crack and opium	4 (6.78)
Cannabis	1 (1.69)
Opium injection	12 (20.34)
Age of the first cigarette smoking, Mean \pm SD, y	17.11 \pm 9.22
Age of the first drug substance, Mean \pm SD, y	27.62 \pm 10.46
Number of previous drug abstinence attempts, Mean \pm SD	7 \pm 2
Duration of drug use, Mean \pm SD, y	5.2 \pm 12.0
Triggering factors in initiating drug use, No. (%)	
Friends and peer pressure	4 (6.78)
Novel seeking	7 (11.90)
Husbands pressure	15 (25.40)

thousand study subjects had attested to the consumption of opium or its derivatives at the time of the study. By using the diagnostic criteria of DSM-IV, 3.5 women in one thousand were dependent to opium and its derivatives (9). This study reported more than 650,000 people as opoid users and more than 110,000 as dependent to opium, while heroin was estimated to be abused by more than 10,000 people. However, a significant proportion of people who had denied drug abuse had positive test for morphine in their urine test; however, the gender of individuals was not been mentioned. Studies performed after Iran's revolution used questionnaires in specific groups of women. In the recent years, three studies on female students have been performed in Tehran University, Shahid Beheshti University, Kerman, Shiraz and Mazandaran. In Shiraz, the prevalence of opioid abuse was 9.5%; in Shahid Beheshti University was 0.3%, and in Tehran and Mazandaran was zero. Prevalence of opioid abuse during the study in Kerman was 2%; in Shiraz was 1.8% and in Tehran was zero. A study on female high school students in Shiraz suggested that opioid abuse is negligible. Three studies in patients with heart, kidney and psychiatric disorders in Shiraz had shown higher prevalence of opium abuse and dependence in these patients. The results of a study conducted on women who had drug abusers present in their family members showed a higher incidence

of opium and heroin dependence in these women. In a qualitative study conducted in large prisons, three-fourth of female prisoners attested to drug abuse, 11 to 30 percent of drug users were imprisoned in drug-related sections of prison and 10 percent were imprisoned in the general sections. Opium and heroin were the most commonly abused drugs (13). In a study (14) which was conducted on 95 addicted women and used raw data from the RSA, in 50 percent of cases onset of drug abuse was in 1990 and in 25 percent after 1995. This study showed that the rate of drug addiction is increasing rapidly specially in women. While until 1990, only 5.8 percent of drug abusers in the sample population were women, after this year the figure was raised to 9 percent. Moreover, few qualitative studies in various parts of the country indicated an increase in the rate of opioid abuse in the population of women (15, 16). In four studies (12, 15), the type of abused drugs in opioid-addicted women were studied. Except for one of these studies which was conducted on 93 women in Vanak Drug Treatment center in Tehran, results revealed that the sap of opium was the most common abused drug in the opioid addicted women, followed by opium, heroin and sap. It must be noted that most of these studies have been completed in drug treatment centers or on the registered addicts. Thus, the observed pattern may have some differences with the real world population of the addicted women (15).

The present study was conducted to investigate the process of addiction in female addicts in the Hamadan drug treatment centers. According to our results, addiction is becoming more prevalent among the women and even the age of start of drug dependence in this group has declined. It has been previously shown that the pattern of dependence to drugs had specific characteristics in the women and is different from the pattern of dependence in men. Findings of this study and similar to such studies suggesting that the most strong source of motivation to initiate drug abuse in these women were their husbands. Implementation of various personal skills such as effective communication skills, decision making skills, conflict resolution skills, problem-solving skills, effective negotiation skills, resilience, anger control skills and expertise to seek relief should be pursued in intervention actions.

As previously described, cultural and age differences in addicted women are results of risk factors that are associated with drug abuse behavior. However, it is important for the purpose of treatment planning to be aware of major gender differences in drug abuse, and identify the most common problems of women and then assign them to different types of treatment programs to fulfill the special needs of addicted women. In general, the pattern of differences and similarities between women and men in drug abuse has not been well established. Especially in our country, the contributing factors to the onset of drug abuse are different among men and women. For example, the average age of on-

set of drug abuse in women is about six years earlier than men and usually is at median young age and also a higher ratio of women compared with men are introduced to the illicit drugs through family members, especially their spouses. This shows the necessity of implementing different prevention strategies in women and men. Some other studies also indicated that drug addiction in women especially injecting drug use is associated with other social pathologies, such as running away from home and prostitution (17-19). Consequently, implementing treatment and rehabilitation measures and harm reduction should be quite specialized for women. The extent of addiction problem in women necessitates special attention to this problem in the society and authorities should be more sensitive to prevent and treat addiction in women.

The potential study limitations were: 1) small sample, because in Hamadan, only one rehabilitation and treatment center for the female addicts has been established, and many of addicts were not willing to participate in the survey because of social and cultural considerations, 2) regarding the growing number of addiction to industrial drugs such as hallucinogens and methamphetamines, further studies are required to investigate the addiction to various drugs, 3) a comparative study with addicted men also has to be performed.

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Author's Contributions

Mohammad Ahmadpanah, Ali Ghaleiha and Mohammad Haghghi contributed the study design, protocol development, data collection and analysis, writing and reviewing of the manuscript. Leila Jahangard contributed to the data interpretation, writing and reviewing the manuscript. Saeed Mosavi had contributed to the writing and data collection. All authors read and approved the final manuscript.

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