

# Alcohol, Cannabinoids, and Opioids Abuse and Dependence Among Psychiatric Inpatients

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Received: May 14, 2014; Revised: November 13, 2014; Accepted: February 1, 2015

**Background:** While substance abuse among psychiatric patients is a widely known problem in clinical practice, there is no local study about prevalence and co-occurrence of substance abuse in north of Iran.

**Objectives:** The present study was designed to determine the frequency of smoking, alcohol, opioid and cannabinoid substances, and prescription medicines abuse or dependence among Psychiatric Inpatients.

**Patients and Methods:** A cross-sectional 2-year case register study was conducted on all (n = 492) psychiatric inpatients of Zare Psychiatric Hospital in Sari located in north of Iran. The data were obtained by using a standardized and validated questionnaire that contained demographic information along with information on co-morbid psychiatric problems and alcohol, cannabinoids, opioids, and cigarette usage.

**Results:** The mean ( $\pm$  SD) age of samples was 39.9 ( $\pm$  11.9) years and male:female ratio was 3.6. Opium with or without using other illicit substances was the most frequently abused substance (67%). Significant association were found between illicit substance abuse and demographic variables of male gender, a low level of literacy, living in the urban area, unemployment, cigarette smoking, and young age. There were statistically significant association between schizophrenia and substance abuse ( $P < 0.001$ ).

**Conclusion:** High prevalence of dual diagnosis warrants attention to the management of substance misuse while treating mental disorders, and should be incorporated in the holistic treatment plan of psychiatric inpatients.

**Keywords:** Behavior, Addictive; Diagnosis, Dual; Psychiatry; Substance Abuse, Intravenous

## 1. Background

Substance abuse among psychiatric patients is a widely known problem. Although the precise extent and detail of this phenomenon is unclear (1), in recent decades vast majority of studies reported a high rate of co-occurrence of substance use disorders with psychiatric disorders (2). Numerous epidemiological surveys have found high rates of substance misuse among psychiatric patients. This co-occurrence, which is also called dual diagnosis, contributes to poorer motivation and treatment compliance as well as outcomes (3).

Dual diagnosis is the term used to describe patients with both severe mental illness (mainly psychotic disorders) and problematic drug and or alcohol use. The term originated from the United States in the 1980s and has been adopted in the United Kingdom and other countries more recently. The nature of the relationship between the two conditions is complex and sometimes controversial (4).

A primary psychiatric illness may trigger or lead to substance misuse and this phenomenon may worsen or change the outcome of a psychiatric illness. On the other

hand, substance misuse and or withdrawal may result in psychiatric symptoms or illness. It may also act as a trigger or precipitating factor in those predisposed to mental illness (5).

Research studies have indicated that at least one-half of the patients in psychiatric or substance misuse treatment centers have been diagnosed with co-morbid psychiatric and substance use disorders (6).

Many studies have shown high prevalence of alcohol abuse among patients with depression and some have found increasing opiates use in schizophrenia (7). This is clinically important as this co-morbidity has a negative impact on the treatment of both conditions (3). While many different epidemiological factors contribute to this phenomenon, inconsistent results have been observed in different studies (8). As a result, the findings could not be generalized to other societies and even to a certain disease.

Iran because of its vicinity to Afghanistan, the biggest world supply of opium, has a high exposure rate to opium and its derivatives and accordingly there are more reports of opiate dependency (9).

## 2. Objectives

Considering the importance of substance use among psychiatric patients and its effect on the recovery process emphasized in numerous studies, the present study was designed to determine (a) the frequency of smoking, alcohol, opioid and cannabinoid substances, and prescription medicines abuse or dependence, and (b) types of psychiatric disorders in patients with substance abuse.

## 3. Patients and Methods

A cross-sectional 2-year case register study was conducted on all adult (> 18 years) psychiatric inpatients (n = 492) of Zare Psychiatric Hospital in Sari, Mazandaran, a northern province of Iran at the southern border of Caspian Sea. The patients were evaluated by conducting a structured interview and completing a questionnaire to record demographic, and disease-related information. It also contained detailed information on the type and pattern of alcohol, smoking, and two most prevalent drugs of abuse in Iran (opioid and cannabinoid substances). To complete the assessment process collateral information were also obtained from family members and patients' hospital case files.

The questionnaire consisted of 27 items collecting data on the demographic characteristics (8 questions), psychiatric co-morbidities (5 questions), and substance/drug abuse/dependence (14 questions). The questionnaire had been designed by the researchers and validated by peer review and a pilot study (Cronbach  $\alpha = 0.92$ ).

The psychiatric diseases were diagnosed and confirmed by using clinical information according to the DSM-IV-TR criteria (10). Urine test was performed to detect opioid and cannabinoid substances recently used using the Sure Step TM kits (Applied Biotech Inc.). Statistical Package for the Social Sciences (SPSS - v14) free version was used to analyze the data by using descriptive statistics and measures of association (Pearson and chi-square).

## 4. Results

The mean  $\pm$  SD age of samples was  $39.9 \pm 11.9$  years and male:female ratio was 3.6 (385 men vs. 107 women).

More than 60% (n = 307) of the patients were living in the city. Approximately 60% (n = 294) of the patients were unemployed, and 95.7% (n = 471) had high school diploma or a lower educational degree. Over half of the patients (n = 253) were married and 8.9% (n = 44) were divorced. The most frequent observed psychiatric disorder was schizophrenia (36.6%) (Table 1).

The mean  $\pm$  SD disease duration was  $104 \pm 11.3$  months, (95% CI, 103.02-104.98) and mean  $\pm$  SD hospitalization rate was  $2.5 \pm 0.4$  times (95% CI, 2.46-2.53).

According to urine test, the rate of current substance abuse or dependence in all patients was about 52.2%. In addition, there were 238 (46.6%) current smoker patients in the sample. The mean age onset of smoking was 20.5

( $\pm 3.4$ ) years. Lifetime abuse or dependence rate in all psychiatric inpatients has been shown in Table 2. Prescription medicines abuse or dependence prevalence was 7.5% (n = 37). Benzodiazepines were the most misused group (in all 37 patients) either alone or in combination with other medicines. Antidepressants took the second place with 31% and anticholinergic agents with 20% took the third place.

According to urine test, current opioid and cannabinoid substances or prescription medicines abuse or dependence was reported in 130 patients (26.4%). According to the questionnaire results, prevalence of lifetime abuse or dependence among hospitalized psychiatric patients was more than half (n = 257, 52.2%) with nearly 158 (32.1%) of these patients having the history of at least one substance abuse (Table 2).

Opium with or without other substances was the most frequent substance abused in 67% of cases (Table 3). The mean  $\pm$  SD age of onset for substances use was  $22.2 \pm 2.8$ , (95% CI, 22.16-22.23) and mean  $\pm$  SD rate for abstinence was  $2 \pm 0.4$ . Family pressure was reported as the main reason for quitting substance misuse.

Schizophrenia and mood disorders were the two most common psychiatric disorders in substance abuser or dependent inpatients, but schizophrenia had a statistically significant association with substance misuse or dependence ( $P < 0.001$ ) (Table 4).

We also found a significant association of opioid and cannabinoid substances abuse or dependence with many demographic factors like male gender, lower educational achievement, living in the city, unemployment, and younger age (Table 5).

Finally, we found strong association between current smoking and opioid-cannabinoid substances abuse or dependence ( $P < 0.001$ ,  $\chi^2 = 32.23$ ). We also found that substance abuse or dependence started approximately 2 years after patients began smoking.

**Table 1.** Frequency of Psychiatric Disorders in all 492 Inpatients<sup>a, b</sup>

Variables	Female	Male	Total
<b>Disorders</b>			
Schizophrenia	34 (6.9)	146 (29.7)	180 (36.6)
Bipolar disorder	39 (7.9)	90 (18.3)	129 (26.2)
MDD with or without PF	20 (4.1)	40 (8.1)	60 (12.2)
Substance induced mood disorders	1 (0.2)	38 (7.7)	39 (7.9)
Other psychotic disorders	9 (1.8)	22 (4.5)	31 (6.3)
Personality disorders	1 (0.2)	15 (3.0)	16 (3.3)
Other psychiatric disorders	3 (0.6)	34 (6.9)	37 (7.5)

<sup>a</sup> Abbreviations: MDD, major depressive disorder; PF, psychotic features.

<sup>b</sup> Data are presented as No. (%).

**Table 2.** Lifetime Abuse/Dependence Rate in all Psychiatric Inpatients<sup>a, b</sup>

Substance/medicines of abuse/dependence	Values
Alcohol	45 (9.1)
Prescription Medicines	37 (7.5)
Opioid and Cannabinoid Substances	158 (32.1)
Smoking	238 (48.4)
No abuse/dependence	235 (47.8)

<sup>a</sup> Due to occurrence of more than one substance/drug abuse/dependence in many patients, figures add up to more than the total sample.

<sup>b</sup> Data are presented as No. (%).

**Table 3.** Lifetime Prevalence of Substance Abuse/Dependence by Sex<sup>a</sup>

Substance	Opium	Hashish	Heroin	Grass
<b>Gender</b>				
Female	3 (2.2)	1 (0.7)	0 (0)	1 (0.7)
Male	84 (64.7)	60 (46.2)	29 (22.3)	18 (13.7)
Total	87 (67)	61 (47)	29 (22.3)	19 (14.5)

<sup>a</sup> Data are presented as No. (%).

**Table 4.** Association of Psychiatric Disorders With Current Substance Abuser/Dependency<sup>a</sup>

Abuse	Urine Test		P Value	$\chi^2$
	Positive	Total		
<b>Disorders</b>				
Schizophrenia	34	180	0.000	17.71
Bipolar disorder	34	129	0.257	1.28
MDD with or without PF†	12	60	0.195	0.375
Other psychotic disorders	10	31	0.936	5.28
Personality disorders	9	16	0.171	0.72
Other psychiatric disorders	10	37	0.005	6.72

<sup>a</sup> Abbreviations: MDD, major depressive disorder; PF, psychotic features.

**Table 5.** Association Between Demographic Characteristics and Current Substance Abuse

Demographic variables	P Value	$\chi^2$
Male gender	0.000	29.21
Lower educational level	0.001	9.84
Unemployment	0.025	7.78
Younger age	0.000	22.65
Living in the city	0.004	16.42

## 5. Discussion

Substance abuse has been reported in association with various medical conditions. Research has shown a con-

siderable tobacco and opium dependence with the rate of 44.2% and 5.8% for heart diseases and 17.9% and 7.1% for pulmonary diseases, respectively (11). This phenomenon has been reported in many other medical diseases, including rheumatologic diseases (12) and hemophilia (13).

In our study, the rate of substance abuse in the psychiatric inpatients was higher than the rate of this co-morbidity that has been reported in the literature in association with any other medical condition. This may be due to the nature of psychiatric problems and therefore needs more attention during the treatment process (14).

Although we found an association of substance dependence with two groups of psychiatric disorders, only in one of these, i.e. schizophrenia, the association was statistically significant and in the second group (other psychiatric disorders, containing a large number of non-specific psychiatric disorders), it was not.

In our study the smoking rate was approximately three times higher than what has been reported in the general population (15). Smoking in psychiatric patients increases the activity of P450 system in the liver and CYP1A2 enzymes, thus decreases the blood concentration of many antipsychotic drugs and their side effects, which might be rewarding for the patients (16). Our study also found a strong relationship between smoking and substance abuse event prior to the onset of psychiatric disorders.

There are many differences in the type of substance abuse or dependence and specific psychiatric disorders and their association in the literature. Studies have shown a different pattern of substance abuse or dependence in Iran compared to the rest of the world. These differences are partly cultural and partly due to the availability of substances in this part of the world. For example, raw opium dependence is quite common because Iran is a neighbor to Afghanistan which is the main producer of this substance in the world (17). Opioids are the primary drugs of abuse in Iran. Two different forms of opioid abuse afflict Iran; heroin injection and opium smoking and ingestion (18). Indigenous raw opium accounts for 69% to 94.6% of total opioid use in this country (16). Cannabinoid substances are the second prevalent drugs of abuse in Iran (19).

There are a number of reasons why patients with dual diagnosis do not receive the necessary care. These reasons include lack of treatment access, high cost of treatment, stigmatization, treating only mental illness or substance use disorders in separation, as well as a medical care system that do not put enough emphasis on the recognition or treatment of a co-morbid substance misuse and also a medical education system that dedicate very little training or teaching time to this significant area of clinical practice (7).

The results of our study revealed a high prevalence of co-morbid substance misuse in psychiatric inpatients, which has a significant impact on the management of both conditions. In this respect, we recommend that the protocol for the management of psychiatric illnesses in

psychiatric hospitals be revised so that the early recognition and management of co-morbid substance misuse are more emphasized.

In addition, a strong association of smoking and substance misuse has been noted in our study. This association with high rate of substance misuse warrants further studies on how public education about harmful effect of cigarette smoking can help reduce the overall rate of substance dependency in the general population.

## Acknowledgements

Special thanks to Dr Abdolreza Ashtari Kiani for his contributions in translating the manuscript to English.

## Authors' Contributions

Reza Habibisaravi collected and interpreted the clinical data, performed the statistical analysis, and drafted the manuscript. Soheil Navaeinia collected and interpreted the clinical data, performed the statistical analysis and revised the manuscript critically for important intellectual content. Samaneh Farnia interpreted the clinical data and revised the manuscript critically for important intellectual content. Mehran Zarghami conceived and designed the evaluation, interpreted the clinical data and revised the manuscript critically for important intellectual content. All authors read and approved the final manuscript.

## Declaration of interest

None Declared.

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