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Research Article

Substance Use Disorders in Patients with Lung or Heart Diseases

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Abstract: We assessed the prevalence of substance use disorders in a sample of Iranian patients with heart or lung diseases who referred to hospitals affiliated to Shiraz University of Medical Sciences. In this prospective study we used structured interview based on DSM – IV (Diagnostic and Statistical Manual of Mental Disorders, 4th ed) criteria for substance use disorders. Data were gathered by a structured interview from 528 randomly selected patients referred to the hospitals. The mean age was 40.8 yr., (SD=16.6) ranging from 15 to 83 yr. In patients with heart diseases, the majority (44.2%) was tobacco dependent, 5.8% were opium and none were alcohol, cannabis, cocaine or LSD dependent. In patients with lung disease, the majority (17.9%) was tobacco dependent, 7.1% were opium dependent, and none were cannabis, cocaine, or LSD dependent. Substance use especially tobacco, and opium was found to be high among patients. There was no report of cannabis, cocaine or LSD dependence. Substance dependence was significantly more prevalent in male than female patients. Cultural attitudes toward substance use were found to affect the type and amount of use. These findings can be considered when planning preventive programs.
Keywords: Substance dependence, Substance abuse, Lung disease, Heart disease.

INTRODUCTION

Some Iranian patients abuse substances, such as opium or alcohol to treat physical or mental illnesses. A number of Iranian patients use opium or tobacco as painkiller, treatment for mental and medical diseases, or seeking pleasure.

Opium is usually used by two methods, smoking and oral intake [1]. Oral consumption mainly includes the drinking of liquid extracts used medicinally, and also an infusion of opium poppy heads, known as poppy tea [2, 3]. Opium has morphine and codeine which are poorly absorbed in the stomach, but highly absorbed in the small intestine; therefore the onset of action is delayed after oral ingestion; in contrast, vaporized morphine produced by smoking of opium is rapidly absorbed across the lungs into the blood stream, and within few seconds is available for the brain. Hence the onset of action is more rapid after smoking; however, the duration of action is longer after oral ingestion. A rare rout of opium use is sniffing of powdered opium into the nose [4, 5]. Sniffing has the advantage that absorption of the morphine starts quickly (Like Smoking) without substantial loss of morphine that happens through non-inhaled smoke. The other advantage is lack of odor, which occurs in smoking due to combustion of opium, therefore the opium snuffer is not as readily detected. The morphine, codeine and heroin could be used by injection in different routes such as intravenously, intramuscularly or subcutaneously, but opium itself cannot be used by injection because it contains a large proportion of insoluble material. The average daily dosage of opium used by an opium smoker varies widely. A study of 618 opium smokers in the Northwest Frontier Province of Pakistan showed that the average daily amount used was 4.7 g, which would contain approximately 470 mg of morphine [6].

In a study in the hill tribes in the opium-producing region of northwestern Thailand, [7], Found that the average daily dose of opium used by smokers to varies from 0.75 g to 30 g. Smoking is a remarkably more expensive method of using opium, since a high proportion of the morphine in the opium is lost during the smoking, although the magnitude of the loss may be reduced by practice. About 50% remains in the charred material that adheres to the inside of the opium pipe bowl. Of the other half that is vaporized in the inside of the opium pipe, a large amount is lost in the smoke that escapes into the surrounding air [5]. Therefore, only a small part of the total amount placed in the opium pipe bowl is delivered into the user's lungs (about 20%). In contrast, when opium is ingested, the whole amount is absorbed into the blood stream.

Although Iran had been an important producing center for opium for a long time, it was not until 1955 that the country had its first laws against the cultivation and use of opium. Iran was a signatory to the 1961 convention on psychotropic substance. Up to now, Iran has been an active member of the United Nations Commission on Narcotic drugs in the Near and Middle East.

Despite the international links and control and treatment policies in operation, the problem of drug addiction continued to be serious. Large scale law enforcement activities resulted in seizure of considerable amount of drugs, there was a strict ban on the cultivation of drug producing plants, and from 1974 responsibility for drug treatment was invested in National Iranian Society for the rehabilitation of the disabled. Between 1974 and 1977, the National Iranian Society for the Rehabilitation of the disabled had opened rehabilitation centers throughout the country to deal with 30000 outpatients [8]. There is, however, little published evaluation of the success of this rehabilitation program.

Opium has been used for many centuries and has a long history of medical and social acceptance in many part of the world, not only in the opium-producing countries of Asia such as Iran, but also during the 19^{th} and very early 20^{th} centuries, in Europe and North America [9,10].

At the present time, however, it has disappeared to a large extent from the occidental literature on drug problems. Although the problems accompanied with dependence or abuse of purified agents such as heroin, morphine or synthetic opioids have attracted the attention of health and legal authorities, and also of the general public, to such an extent that in most countries opium is almost considered as a thing of the past [11], but a considerable part of opium is still used in its traditional countries in Asia [12-14]. Attempts by many Asian countries to eradicate opium use have resulted to its extensive replacement by heroin [15, 16]. The wide spread of HIV infection and AIDS in intravenous abusers of purified opioids has resulted to the suggestion that opium smokers should be actively discouraged from changing [17]. In addition, it has been reported that opium is also abused in industrialized countries due to various causes. One of the most important factors is migration, such as the evacuation of Laotian refugees to North America [18, 19]. Recent cases of opium trafficking in various countries suggest that the opium could be finding a reception in non-traditional users.

Drug abuse remains a crime in Iran, but the authorities are now willing for dependence to be treated as a psychiatric disorder. Substance abusers undergoing treatment are no longer prosecuted, nor are the specialists who are treating them. Costs of treatment, medication and rehabilitation are paid by patients according to the approved tariffs, but the government will pay the costs for those unable to afford treatment [20]. Alcohol is prohibited both by religion and law. Other abused illicit substances include opium, heroin, morphine, alcohol, stimulants, cannabis, LSD and other hallucinogens.

The State Welfare Organization, which is affiliated to the Ministry of Health, Treatment, and Medical education, is in charge of treatment and rehabilitation of substance-dependent patients. At the present time, there are 12 treatment and rehabilitation centers in Iran, with one center specifically for women. Until 1999 approximately 25,000 to 30,000 individuals were admitted to these centers (90% of these referrals were ordered by courts). The treatment was residential with the average duration of stay from 2-6 months. The centers were described as having the infrastructure of an overcrowded prison. Since that time outpatient treatment has been introduced and was initially based on detoxification with clonidine and tranquilizers, but more recently with buprenorphine or methadone. The usual duration of treatment is between 3 to 6 months, but on occasions it may be extended to 2 years. The treatment includes individual therapy, family therapy, and group therapy. Relapse rates are estimated to vary between 60% and 80% according to the duration and site of therapy. Recently self-referral centers have developed across the country, as have also Narcotic Anonymous groups, which now have approximately 5000 members [21].

At present, the number of substance users in Iran, is estimated to be between 1.8 million to 3.3 million, and the number of intravenous drug users between 200,000 and 300,000 of whom 1841 are estimated to be to suffer from HIV infection. 74.8% of all those suffering from HIV infection are intravenous drug users [21-23].

Limited scientific information is reported on substance use disorder in Iran [24-29]. A research showed that 3.8% of Iranian women and 26% of men were cigarette smokers [30]. An earlier study concluded that the opium addiction rate was 0.07 per capita, and the rate of registered opium addicts was 0.01 per capita in a rural population of the northern part of Iran [31].

Since in Iran a substantial part of patients who are physically or mentally ill, use substances such as opium, alcohol, tobacco, etc. to treat their disease, to relieve their pain or to reduce their stress; therefore it is of interest to assess substance use among them. This study evaluated the prevalence of substance abuse and dependence among patients with lung or heart diseases who referred to different hospitals affiliated to the Shiraz University of Medical Sciences.

MATERIALS AND METHODS

Procedure

Patients were chosen by area and cluster random sampling from various hospitals. All the patients were interviewed by the researchers (authors) by means of a structured questionnaire, including DSM-IV criteria for substance dependent disorder [32]. They were asked to identify their demographic characteristics such as age, sex, and marital status, and also to explain what substance(s) were used for the first time, reason/motivations(s) for substance use, and also explain what substance(s) were currently used, and motivation for current use.

Sample

The data were gathered from 528 patients. Their mean age was 40.8 yr., and SD was 16.6.

Analysis

Data analysis was done by using SPSS. Chi-square analyses and Fisher's Exact Test (FET) were used to test the frequency differences between the groups, and t-test analyses were used to test the mean differences between the groups. These were two-sided with significance set at $P<0.05$.

RESULTS

Table 1 gives total sample characteristics. Table 2 shows comparison of the characteristics of two samples. Table 3 gives frequency distribution of substance ever users and substance dependent users. A percentage of 82.6% (93.4% of men and 73.2% of women) reported the use of substance(s) once or more in their lives. Nobody used LSD.

Table 4 summarizes the frequency of non-dependent every day substance users. A percentage of 9.8% (14.8% of men and 5.6% of women) were non-dependent every day substance users. Table 5 gives frequency distribution of occasional users and frequent users by sex. Table 6 summarizes frequency distribution of reasons in ever users and current users by sex. Table 7 shows frequency distribution of ever users and dependent users by disease. Table 8 indicates frequency distribution of non-dependent users and abusers by disease. Table 9 summarizes frequency distribution of occasional users and frequent users by disease.

Table 1: Sample characteristic

Mean Age and SD of both groups

Group	Number	Mean age	SD
Heart Disease	416	41.55	16.52
Lung Disease	112	37.87	16.42
Total	**528**	**40.77**	**16.56**

(Minimum= 15years; Maximum=83years)

t=-2.099 DF=526 Sig. (2-sided) =0.036

Sex

Sex	Number	%
Male	244	46.2
Female	284	53.8
Total	**528**	**100**

Frequency distribution of patients by age group

Age group (year)	Number	%
<20	31	5.9
20-29	155	29.4
30-39	80	15.2
40-49	86	16.3
50-59	81	15.3
60-69	59	11.2
≥ 70	36	6.8
Total	**528**	**100**

Marital Status

Status	Number	%
Single	195	36.9
Married	333	63.1
Total	**528**	**100**

Educational Status

Status	Number	%
Primary School	55	10.4
High School	336	63.6
Higher Education	137	26
Total	**528**	**100**

Occupational Status		
Status	**Number**	**%**
Employee	108	20.5
Self-employment	132	25
Unemployed	86	16.3
Student	51	9.6
House	151	28.6
Total	**528**	**100**

Table 2: Comparison of characteristics of the 2 groups

Group	**Heart Disease**		**Lung Disease**		**Total**	
	N	**%**	**N**	**%**	N	%
Marital status						
Single	151	36.3	44	39.3	195	36.9
Married	265	63.7	68	60.7	333	63.1
Total	416	100	112	100	528	100
X^2=0.338 DF=1 Sig. (2-sided)=0.561						
Education						
Primary School	46	11.1	9	8	55	10.4
High School	261	62.7	75	67	336	63.6
Higher Education	109	26.2	28	25	137	25.9
Total	416	100	112	100	528	100
X^2=1.07 DF=2 Sig. (2-sided)=0.586						
Job						
Employee	85	20.4	23	20.5	108	20.5
Self-employment	109	26.2	23	20.5	132	25
Unemployed	68	16.3	18	16.1	86	16.3
Student	38	9.1	13	11.6	51	9.7
House wife	116	27.9	35	31.3	151	28.6
Total	416	100	112	100	528	100
X^2=2.042 DF=4 Sig. (2-sided)=0.727						
Sex						
Female	208	50	76	67.9	284	53.8
Male	208	50	36	32.1	244	46.2
Total	416	100	112	100	528	100
X^2=17.32 DF=1 Sig. (2-sided)=0.001						
Income						
Low	61	14.7	13	11.6	74	14
Medium	180	43.4	57	50.9	237	45
High	175	41.9	42	37.5	216	41
Total	416	100	112	100	528	100
X^2=2.131 DF=2 Sig. (2-sided)=0.345						

Table 3: Frequency distribution of Ever users and Substance-Dependent subjects by sex

			Ever users		**X^2**	**DF**	**Sig.**	**Dependent**		**X^2**	**DF**	**Sig.**
			N	**%**				**N**	**%**			
Heart Disease	**Cigarette**	**Female**	160	76.9	13.128	1	0.000	56	26.9	50.519	1	0.000
		Male	188	90.4				128	61.5			
		Total	348	83.7				184	44.2			
	Opium	**Female**	8	3.8	4.039	1	0.044	0	0	25.469	1	0.000
		Male	104	50				24	11.5			
		Total	112	26.9				24	5.8			
	Alcohol	**Female**	36	17.3	4.039	1	0.044	0	0	-	-	-
		Male	68	32.7				0	0			
		Total	104	25				0	0			
	Heroine	**Female**	0	0	15.269	1	0.000	0	0	50.519	1	0.000
		Male	4	1.9				0	0			
		Total	4	1				0	0			
		Female	0	0				0	0			

	Cocaine	**Male**	4	1.9	25.130	1	0.000	0	0	8.663	1	0.003
		Total	4	1				0	0			
	Total	**Female**	164	78.8	39.407	1	0.000	56	26.9	18.188	1	0.000
		Male	192	92.3				128	61.5			
		Total	356	85.6				184	44.2			
Lung Disease	**Cigarette**	**Female**	40	52.6	49.123	1	0.000	8	10.5	1.26	1	0.262
		Male	36	100				68	33.3			
		Total	76	67.9				20	17.9			
	Opium	**Female**	0	0	8.757	1	0.003	0	0	26.417	1	0.000
		Male	16	44.4				8	22.2			
		Total	16	14.3				8	7.1			
	Alcohol	**Female**	4	5.3	8.757	1	0.003	4	5.3	79.366	1	0.000
		Male	24	66.7				4	11.1			
		Total	28	25				8	7.1			
	Heroin	**Female**	0	0	21.221	1	0.000	0	0	50.519	1	0.000
		Male	4	11.1				0	0			
		Total	4	3.6				0	0			
	Hashish	**Female**	0	0	37.231	1	0.000	0	0	25.469	1	0.000
		Male	4	11.1				0	0			
		Total	4	3.6				0	0			
	Total	**Female**	44	57.9	13.128	1	0.000	8	10.5	-	-	-
		Male	36	100				20	55.6			
		Total	80	71.4				28	25			
Total		**Female**	208	73.2	4.039	1	0.044	64	22.5	50.519	1	0.000
		Male	228	93.4				148	60.7			
		Total	436	82.6				212	40.2			

Table 4: Frequency distribution of Non-dependent every day users and Abusers by sex

			Non Dependent		X^2	**DF**	**Sig.**	**Abuser**		X^2	**DF**	**Sig.**
			N	**%**				**N**	**%**			
Heart Disease	**Cigarette**	**Female**	16	7.7	0.613	1	0.434	0	0	-	-	-
		Male	12	5.8				0	0			
		Total	28	6.7				0	0			
	Opium	**Female**	0	0	25.469	1	0.000	0	0	-	-	-
		Male	24	11.5				0	0			
		Total	24	5.8				0	0			
	Alcohol	**Female**	0	0	-	-	-	0	0	8.157	1	0.004
		Male	0	0				8	3.8			
		Total	0	0				8	1.9			
	Total	**Female**	16	7.7	6.029	1	0.014	0	0	8.157	1	0.004
		Male	32	15.4				8	3.8			
		Total	48	11.5				8	1.9			
Lung Disease	**Cigarette**	**Female**	0	0	8.757	1	0.003	0	0	-	-	-
		Male	4	11.1				0	0			
		Total	4	3.6				0	0			
	Opium	**Female**	0	0	-	-	-	0	0	8.757	1	0.003
		Male	0	0				4	11.1			
		Total	0	0				4	3.6			
	Alcohol	**Female**	0	0	8.757	1	0.003	0	0	8.757	1	0.003
		Male	4	11.1				4	11.1			
		Total	4	3.6				4	3.6			
	Total	**Female**	0	0	8.757	1	0.003	0	0	18.188	1	0.000
		Male	4	11.1				8	22.2			
		Total	4	3.6				8	7.1			
Total		**Female**	16	5.6	12.296	1	0.000	0	0	19.205	1	0.000
		Male	36	14.8				16	6.6			
		Total	52	9.8				16	3			

Table 5: Frequency distribution of Occasional users and Frequent users by sex

			Occasional User		X^2	DF	Sig.	Frequent User		X^2	DF	Sig.
			N	%				N	%			
Heart Disease	Cigarette	Female	16	7.7	0.613	1	0.434	40	19.2	11.886	1	0.001
		Male	12	5.8				16	7.7			
		Total	28	6.7				56	13.5			
	Opium	Female	0	0	25.469	1	0.000	4	1.9	1.373	1	0.241
		Male	24	11.5				8	3.8			
		Total	24	5.8				12	2.9			
	Alcohol	Female	8	3.8	8.607	1	0.003	0	0	12.356	1	0.000
		Male	24	11.5				12	5.8			
		Total	32	7.7				12	2.9			
	Total	Female	20	9.6	20.864	1	0.000	44	21.2	2.318	1	0.128
		Male	56	26.9				32	15.4			
		Total	76	18.3				76	18.3			
Lung Disease	Cigarette	Female	16	21.1	0.020	1	0.888	0	0	8.757	1	0.003
		Male	8	22.2				4	11.1			
		Total	24	21.4				4	3.6			
	Opium	Female	0	0	8.757	1	0.003	0	0	-	-	-
		Male	4	11.1				0	0			
		Total	4	3.6				0	0			
	Alcohol	Female	0	0	8.757	1	0.003	0	0	8.757	1	0.003
		Male	4	11.1				4	11.1			
		Total	4	3.6				4	3.6			
	Total	Female	16	21.1	1.515	1	0.212	0	0	18.188	1	0.000
		Male	12	31.6				8	22.2			
		Total	28	24.6				8	7.1			
Total		Female	36	12.7	18.720	1	0.000	44	15.5	0.080	1	0.778
		Male	68	27.6				40	16.4			
		Total	104	19.6				84	15.9			

Table 6: Frequency distribution of Reasons in Ever users and Current users by sex

			Ever users		X^2	DF	Sig.	Current users		X^2	DF	Sig.
			N	%				N	%			
Heart Disease	Curiosity	Female	60	36.6	4.642	1	0.031	-	-	-	-	-
		Male	92	47.9				-	-			
		Total	152	42.7				-	-			
	Modeling (Imitation)	Female	104	63.4	0.957	1	0.328	24	14.6	11.846	1	0.000
		Male	112	58.3				8	4.2			
		Total	216	60.7				32	9			
	Need	Female	12	7.3	2.614	1	0.106	56	34.6	27.422	1	0.000
		Male	24	12.5				120	62.5			
		Total	36	10.1				176	49.7			
	Seeking pleasure	Female	4	2.4	27.628	1	0.000	48	29.3	15.782	1	0.000
		Male	40	20.8				96	50			
		Total	44	12.4				144	40.4			
	Release of tension	Female	44	26.8	11.753	1	0.000	88	53.7	1.615	1	0.109
		Male	24	12.5				116	60.4			
		Total	68	19.1				204	57.3			
	Total	Female	164	100	6.990	1	0.008	136	82.9	6.237	1	0.013
		Male	184	95.8				176	91.7			
		Total	348	97.8				312	87.6			
	Missing	Female	0	0	6.990	1	0.008	28	17.1	6.237	1	0.013
		Male	8	4.2				16	8.3			
		Total	8	2.2				44	12.4			
		Female	20	45.5				-	-			

Lung Disease	Curiosity	Male	12	33.3	1.212	1	0.271	-	-	-	-	-
		Total	32	40				-	-			
	Modeling (Imitation)	Female	24	54.5	1.212	1	0.271	4	9.1	3.445	1	0.063
		Male	24	66.7				0	0			
		Total	48	60				4	5			
	Need	Female	0	0	5.146	1	0.023	16	36.4	2.946	1	0.086
		Male	4	11.1				20	55.6			
		Total	4	5				36	45			
	Seeking pleasure	Female	0	0	24.444	1	0.000	4	9.1	13.199	1	0.000
		Male	16	44.4				16	44.4			
		Total	16	20				20	25			
	Release of tension	Female	8	18.2	0.776	1	0.378	24	54.5	0.008	1	0.928
		Male	4	11.1				20	55.6			
		Total	12	15				44	55			
	Total	Female	40	90.9	3.445	1	0.063	28	63.6	1.886	1	0.17
		Male	36	100				28	77.8			
		Total	76	95				56	70			
	Missing	Female	4	9.1	3.445	1	0.063	16	36.4	1.886	1	0.17
		Male	0	0				8	22.2			
		Total	4	5				24	30			
Total		Female	204	98.1	1.022	1	0.312	164	78.8	9.332	1	0.002
		Male	220	96.5				204	989.5			
		Total	424	97.2				368	84.4			

Table 7: Frequency distribution of Ever users and Substance-Dependent users by disease

			Ever users		X^2	DF	Sig.	Dependent		X^2	DF	Sig.
			N	%				N	%			
Female	Cigarette	Heart	160	76.9	15.769	1	0.000	56	36.9	8.573	1	0.003
		Lung	40	52.6				8	10.5			
		Total	200	70.4				64	22.5			
	Opium	Heart	8	3.8	3.008	1	0.083	0	0	-	-	-
		Lung	0	0				0	0			
		Total	8	2.8				0	0			
	Alcohol	Heart	36	17.3	6.673	1	0.010	0	0	11.104	1	0.001
		Lung	4	5.3				4	5.3			
		Total	40	14.1				4	1.4			
	Heroin	Heart	0	0	-	-	-	0	0	-	-	-
		Lung	0	0				0	0			
		Total	0	0				0	0			
	Cocaine	Heart	0	0	-	-	-	0	0	-	-	-
		Lung	0	0				0	0			
		Total	0	0				0	0			
	Hashish	Heart	0	0	-	-	-	0	0	-	-	-
		Lung	0	0				0	0			
		Total	0	0				0	0			
	Total	Heart	164	78.8	12.467	1	0.000	56	26.9	8.573	1	0.003
		Lung	44	57.9				8	10.5			
		Total	208	73.2				64	22.5			
Male	Cigarette	Heart	188	90.4	3.771	1	0.083	128	61.5	9.983	1	0.002
		Lung	36	100				12	33.3			
		Total	224	91.8				140	57.4			
	Opium	Heart	104	50	0.379	1	0.538	24	11.5	3.074	1	0.080
		Lung	16	13.3				8	22.2			
		Total	120	49.2				32	13.1			
	Alcohol	Heart	68	32.7	15.081	1	0.000	0	0	23.496	1	0.000
		Lung	24	66.7				4	11.1			
		Total	92	37.7				4	1.6			
		Heart	4	1.9				0	0			

	Heroin	**Lung**	4	11.1	8.170	1	0.004	0	0	-	-	-
		Total	8	3.3				0	0			
	Cocaine	**Heart**	4	1.9	0.704	1	0.401	0	0	-	-	-
		Lung	0	0				0	0			
		Total	4	1.6				0	0			
	Hashish	**Heart**	0	0	23.496	1	0.000	0	0	-	-	-
		Lung	4	11.1				0	0			
		Total	4	1.6				0	0			
	Total	**Heart**	192	92.3	2.964	1	0.085	128	61.5	0.460	1	0.497
		Lung	36	100				20	55.6			
		Total	228	93.4				148	60.7			
Total		**Heart**	208	73.2	37.231	1	0.000	64	22.5	79.366	1	0.00
		Lung	228	93.4				148	60.7			
		Total	436	82.6				212	40.2			

Table 8: Frequency distribution of non-Dependent every day users and Abusers by diseases

			non-Dependent		X^2	DF	Sig.	Abuser		X^2	DF	Sig.
			N	%				N	%			
Female	**Cigarette**	**Heart**	16	7.7	6.195	1	0.013	0	0	-	-	-
		Lung	0	0				0	0			
		Total	16	5.6				0	0			
	Opium	**Female**	0	0	-	-	-	0	0	-	-	-
		Heart	0	0				0	0			
		Lung	0	0				0	0			
	Alcohol	**Total**	0	0	-	-	-	0	0	-	-	-
		Female	0	0				0	0			
		Heart	0	0				0	0			
	Total	**Lung**	16	7.7	6.195	1	0.013	0	0	-	-	-
		Total	0	0				0	0			
		Female	16	5.6				0	0			
Male	**Cigarette**	**Heart**	12	5.8	1.429	1	0.232	0	0	-	-	-
		Lung	4	11.1				0	0			
		Total	16	6.6				0	0			
	Opium	**Female**	24	11.5	4.607	1	0.032	0	0	23.496	1	0.000
		Heart	0	0				4	11.1			
		Lung	24	9.8				4	1.6			
	Alcohol	**Total**	0	0	23.496	1	0.000	8	3.8	3.464	1	0.063
		Female	4	11.1				4	11.1			
		Heart	4	1.6				12	4.9			
	Total	**Lung**	32	15.4	0.446	1	0.496	8	3.8	16.912	1	0.000
		Total	4	11.1				8	22.2			
		Female	36	14.8				16	6.6			
Total		**Heart**	16	5.6	12.296	1	0.00	0	0	19.205	1	0.000
		Lung	36	14.8				16	6.6			
		Total	52	9.8				16	3			

Table 9: Frequency distribution of Occasional user and Frequent user by diseases

			Occasional user		X^2	DF	Sig.	Frequent user		X^2	DF	Sig.
			N	%				N	%			
Female	**Cigarette**	**Heart**	16	7.7	9.938	1	0.002	40	19.2	17.011	1	0.000
		Lung	16	21.1				0	0			
		Total	32	11.3				40	14.1			
	Opium	**Female**	0	0	-	-	-	4	1.9	1.482	1	0.223
		Heart	0	0				0	0			
		Lung	0	0				4	1.4			
		Total	8	3.8	3.008	1	0.083	0	0	-	-	-
		Female	0	0				0	0			

	Alcohol	**Heart**	8	2.8				0	0			
	Total	**Lung**	20	9.6	6.578	1	0.01	44	21.2	19.024	1	0.000
		Total	16	21.1				0	0			
		Female	36	12.7				44	15.5			
Male	**Cigarette**	**Heart**	12	5.8	11.040	1	0.001	16	7.7	0.477	1	0.490
		Lung	8	22.2				4	11.1			
		Total	20	8.2				20	8.2			
	Opium	**Female**	24	11.5	0.006	1	0.941	8	3.8	1.432	1	0.232
		Heart	4	11.1				0	0			
		Lung	28	11.5				8	3.3			
	Alcohol	**Total**	24	11.5	0.006	1	0.941	12	5.8	1.429	1	0.232
		Female	4	11.1				4	11.1			
		Heart	28	11.5				16	6.6			
	Total	**Lung**	56	26.9	0.627	1	0.428	32	15.4	1.047	1	0.306
		Total	12	33.3				8	22.2			
		Female	68	27.9				40	16.4			
Total		**Heart**	36	12.7	19.152	1	0.000	44	15.5	0.080	1	0.778
		Lung	68	27.9				40	16.4			
		Total	104	19.7				84	15.9			

DISCUSSION

The relationship between lung or heart disease and substance abuse is well known. Pain, depression and anxiety are found to be high among patients with chronic diseases such as lung disease, heart diseases, diabetes, hypertension, malignancies, rheumatic and collagen vascular diseases, etc [24-32].

It appears that in Iran, opium is used as pain killer and hypnotic. Concerning drug policy in Iran, it should be noted that alcohol consumption is both religiously and legally prohibited and use of other drugs except tobacco is legally prohibited [33-35].

Substance use was found be significantly higher in male patients. It is possible that in a culture of developing countries such as Iran, substance use (such as opium or tobacco) is more accepted by males rather than females. This is inconsistent with studies conducted in the West showing that lifetime use did not vary significantly by sex [36, 37].

Tobacco use was found to be the most prevalent form of substance use among patients with lung or heart disease. Alcohol was the second and opium was the third most common drug used. In our study nobody was dependent to hallucinogens or cocaine. It should be mentioned that in Iran, it is very difficult to obtain these kinds of drugs. Also it appears that western attitudes toward drugs have had little effect on the pattern of substance use in Iran.

Overall substance abusers were approximately equal in patients with heart disease and lung disease.

This research was confined to Shiraz (capital of Fars province), a large city located in the southern part of Iran, so care must be taken not to generalize these results to the full Iranian patients.

CONCLUSION

Tobacco, alcohol and opium were the most common used substances. Use of substances was significantly higher in males. There was no report of LSD, cocaine or hallucinogens use. Cultural attitudes toward substance use were found to be important factors for substance use. These results can be considered for preventive and therapeutic programs.

REFERENCES

1. Hawkins JA; Opium: addicts and addictions. 1973, Reprinted by Amo Press, New York, 1981.
2. Lu L, Wang X; Drug addiction in China. Ann NY Acad Sci., 2008; 1141: 304-317.
3. Unntthan S, Strang J; Poppy tea dependence. British Journal of Psychiatry, 1993; 163: 813-814.
4. Westermeyer J; Opium availability and the prevalence of addiction in Asia. Br J Addict., 1981; 76(1): 85-90.
5. Westermeyer J, Neider J; Variability in opium dosage: Observations from laos, 1965-75. Drug and Alcohol Dependence, 1982; 9: 351-358.
6. Masood A; Opium smoking in the Frontier Province of Pakistan. Bulletin on Narcotics, 1979; 31(1): 59-66.
7. Suwanwela C, Poshyachinda V, Tasanapradtt P, Dharmakrong AT; A. The hill tribes of Thailand, their opium use and addiction. Bulletin on Narcotics, 1978, 30(2): 1-19.
8. Agahi C, Spencer CP; Drug abuse in pre-revolutionary Iran. Journal of Psychoactive Drugs, 1981; 13: 39-46.
9. Brian J; Opium and infant-sedation in 19th century England, Health Visitor, 1994; 76: 165-166.
10. Jonnes J; The rise of the modern addict. American Journal of public Health, 1995; 85: 1157-1162.

11. Kalant H; Opium revisited: a brief review of its nature, composition, non-medical use and relative risks. Addiction, 1997; 92: 267-277.
12. Kartikeyan SK, Chaturvedi RM, Bhalerao VR; Role of the family in drug abuse, Journal of postgraduate Medicine, 1992; 38: 5-7.
13. Ganguly KK, Sharma HK, Krishnamachri KA; An ethnographic account of opium consumers of Rajasthan (India): socio-medical perspective. Addiction, 1995; 90: 9-12.
14. Ahmadi J, Ghanizadeh A; Motivations for use of opiates among addicts seeking treatment in Shiraz. Psychological Reports, 2000; 87: 1158-1164.
15. Westermeyer J; The pro-heroin effects of anti-opium laws in Asia. Archives of General Psychiatry, 1979; 33: 1135-1139.
16. Suwanwela C, Poshyachinda V, Tasanapradtt P, Dharmakrong ATA; The hill tribes of Thailand, their opium use and addiction. Bulletin on Narcotics, 1978; 30(2): 1-19.
17. Zheng X, Tian C, Choi KH, Zhang J, Cheng H, Yang X *et al.*; Injecting drug use and HIV infection in southwest China. AIDS, 1994; 8(8): 1141-1147.
18. Westermeyer J, Lyfoung T, Neider J; An epidemic of opium dependence among Asian refugees in Minnesota: characteristics and causes. British Journal of Addiction, 1989; 84: 785-789.
19. Martin J, Zweben JE; Addressing treatment needs of Southeast Asian Men opium users in California, Journal of Psychoactive Drugs, 1993; 25: 73-76.
20. Drug Control Headquarters; The Anti-Narcotics law of the Islamic Republic of Iran (as amended November 1997)**.** Drug Control Headquarters. Tehran, Iran. Available from http://www.dchqiran.org/document/Law-1997.htm.
21. Razzaghi E, Rahimi A, Hosseini M, Chatterjee A; Rapid Situation Assessment (RSA) of Drug Abuse in Iran. Prevention Department, State Welfare Organization, Ministry of Health, I.R. of Iran and United Nations International Drug Control Program, 1999.
22. Drug Control Headquarters; International Relations Office the National Drug Control Report-2000. Drug Control Headquarters, Tehran, Islamic Republic of Iran, 2001.
23. Moore M; Iran: once hidden, drug addiction is changing Iran. Washington Post (DC), 2001: 26. Available from http://.maoinc.org/drugnews/v01/n1344/a06.html2072
24. Ahmadi J1, Fallahzadeh H, Salimi A, Rahimian M, Salehi V, Khaghani M *et al.*; Analysis of opium use by students of medical sciences. J Clin Nurs., 2006; 15(4): 379-386.
25. Ahmadi J1, Pridmore S, Alimi A, Cheraghi A, Arad A, Parsaeyan H *et al.*; Epidemiology of opium use in the general population. Am J Drug Alcohol Abuse, 2007; 33(3): 483-491.
26. Ahmadi J, Javadpour A, Pridmore S; Epidemiology of Substance Use among Dentistry Students. Iran J Psychiatry Behav Sci., 2009; 3(2): 25-28.
27. Ahmadi J, Naghshvarian M, Afshari R; Opioids Use in Male Population Referred for Mandatory Urine Opioid Screen Before Marriage in Shiraz-Iran. Iran J Psychiatry Behav Sci., 2011; 5(2): 126-130.
28. Ahmadi J, Sharifi M; Lifetime and Current Prevalence of Tobacco Smoking. J Addict Res Ther., 2013; 4: 145.
29. Ahmadi J, Ahmed MG; Dubai Medical College Students' Attitudes towards Substance Use. J Addict Res Ther., 2013; S6: 005.
30. Ahmadi J; Khalili H; Jooybar R; Namazi N; Mohammadaghaei P; Epidemiology of cigarette smoking among Iranian general population. Presented at world Psychiatric Association, regional congress, Preventive Psychiatry. Athens' Greece, 1999: 88.
31. Alemi AA; The iceberg of opium addiction: An epidemiological survey of opium addiction in a rural community. Drug & Alcohol Dependence, 1978; 3(2): 107 – 112.
32. American psychiatric Association; Diagnostic and Statistical Manual of Mental Disorders. 4th edition, Washington, DC, 1994.
33. Ahmadi J; Rate of depression among students at Shiraz University. Journal of Students and Research, 1994; 2, 2-4.
34. Ahmadi J; Biobehavior Therapy and Biobehaviorism: the future of psychiatry. 2nd edition, Shiraz, Rahgosha Press, 1992.
35. Ahmadi J; Behavior Therapy. 3rd edition, Shiraz, Shiraz University Press, 1991.
36. Gulliver SB, Kalman D, Rohsenow DJ; Smoking and drinking among alcoholics in treatment: cross-sectional and longitudinal relationships. Journal of stud-Alcohol, 2000; 61(1): 157-163.
37. Coleman EA, Honeycutte G, Ogden B, McMillan DE, O'sullivan PS, Light K *et al.*; Assessing Substance abuse among health care students and the efficacy of educational interventions. Journal of Prof-Nurse, 1997; 13(1): 28-37.