

*Original Article***Substance use disorders in the elderly people referring to Addiction Treatment Clinics, 2017**Mohammad Saberi¹ Lale FaniSaberi² Nouroeddin Mousavinasab³ Mehran Zarghami⁴ **Zohreh Taraghi^{5*}**

1. MSc of Geriatric Nursing, Mazandaran University of Medical Sciences, Sari Iran
2. Assistant Professor, Department of Community Health Nursing, Mazandaran University of Medical Sciences, Sari Iran
3. Associate Professor, Mazandaran University of Medical Sciences, Sari, Iran
4. Professor, Addiction fellowship, Research Center of Psychiatry and Behavioral Sciences, Institute of Addiction, Department of Psychiatric Medicine, Mazandaran University of Medical Sciences, Sari, Iran
5. Assistant Professor, Mazandaran University of Medical Sciences, Sari Iran

*Correspondence to: Zohreh Taraghi

ZTaraghi@mazums.ac.ir

(Received: 24 Jan. 2018; Revised: 16 Mar. 2018; Accepted: 15 May. 2018)

Abstract

Background and Purpose: Addiction is regarded as a disorder of brain function. The current paper aimed at investigating the substance use disorders characteristics among elderly people.

Materials and Methods: In this descriptive-correlation study, 200 elderlies referred to Amol Addiction Treatment Clinics were selected by multi-stage cluster sampling. The data collection tool was the demographic questionnaire, and alcohol, smoking, and substance involvement screening test (ASSIST) developed by the WHO. The collected data were analyzed using descriptive and inferential tests, such as independent t-test and ANOVA using SPSS Software (V.21).

Results: All study sample elders (100%) consumed opioids, 65% tobacco products, 31% alcoholic beverages, and 26.5% sedatives or sleeping pills. There was a significant correlation between mean of tobacco products consumption and gender ($P=0.001$), income ($P=0.030$), and job ($P<0.001$). There was also a significant correlation between the mean of cannabis consumption and gender ($P=0.013$), and income ($P=0.011$). Also there was a significant correlation between mean of sedatives consumption and job ($P=0.039$); as well as a significant correlation between the mean of alcoholic beverages consumption and marriage ($P=0.037$). However, there were not documented any significant relationship between education, housing status, number of children, death of loved ones, and the severity of substance use disorders

Conclusion: Recognition of factors affecting substance use disorders among older people seems necessary.

Key words: Substance Use Disorders; Older Adults; Drug Abuse

Citation: Saberi M, FaniSaberi L, Mousavinasab N, Zarghami M, **Taraghi Z***. Substance use disorders in the elderly people referring to Addiction Treatment Clinics, 2017; 6 (2): 31-40.

1. Introduction

Recently, substance use disorder is taken as a type of brain dysfunction that is caused by the interaction between genetic vulnerability. The acquired drug-related changes, such as reduced function of the forehead lobe, and psychosocial factors, such as the availability of medication, the impact of the family, and peers, and has a bio-psycho-social nature (1). Based on World Drug Report (2016), over 29 million people who use drugs are estimated to suffer from drug use disorders, and of those, 12 million are people who inject drugs, of whom 14.0 percent are living with HIV (2). Drug dependency among older adults is a complex problem often goes undiagnosed, or is misdiagnosed and is usually insufficiently treated, when it is identified (3). The findings of the National Institutes of the Substance Abuse Survey in the United States show rising trend of substance abuse in people over 50 years of age, such that it will increase to 55 million in 2020 from 40 million in 2010 (4). According to statistics, about 25% of people over the age of 50 and 17% of people over the age of 65 in the United States are abusing drugs and 30% are dependent on prescribed medications by the physicians (5). In one study in Iran, the prevalence of smoking and alcohol consumption in the elderly was reported as 14.1% and 4.5%, respectively (6).

The substance use disorder in the elderly should be viewed differently from that of young people. For example, the incidence of chronic diseases is aggravated by aging, which can also complicate the manifestation of drug abuse in chronic diseases (7). The type of substance used in the elderly varies with other age groups(8).

Ageing creates a set of physical, functional, emotional and social changes that may lead the person to addiction. Physiological factors include: high prevalence of chronic diseases, metabolic changes (which may affect the drug potency), and hormonal changes (such as level of melatonin), which can lead to a change in sleep-waking cycles. Most physicians often prescribe medications to deal with motor problems, chronic pain, insomnia, anxiety, and depression, many of which can be addictive (9). Tension-related events, such as retirement, financial problems, the loss of spouse, friends, and health are among the other factors influencing substance abuse in this age (10). The tendency to substance abuse can also be associated with inferiority at the later age (11). Symptoms of substance abuse in the elderly are similar to other physical and behavioral disorders of this age, which makes it difficult to diagnose. The feelings of embarrassment of the elderly and his or her caretakers and their efforts to conceal drug intake are also other important factors that add to the complexity of the above, and result in less estimated number than the actual number of people affected (12).

Nurses have a significant role in health promotion and disease prevention, and since identifying the predictors of substance abuse can be useful in designing and prioritizing interventions, the current paper aimed at determining the status of substance abuse in elderly patients referring to Addiction Treatment Clinics.

2. Materials and Methods

In this descriptive-correlation study, 200 elderlies referred to Amol Addiction Treatment Clinics were selected by multi-stage cluster sampling. This article is a part

of the study under titled "the relationship between chronic diseases and drug use disorders among elderly people", in which 19 variables were assessed (age, gender, education level, income, occupational condition, housing status, living arrangement, marital status, number of children, quantity of relationship with children, history of death of loved ones in the last six months, chronic pain, chronic disease history, type of chronic disease, age of first chronic disease involvement, age of substance abuse, age of dependence, duration of dependence, and the history of detoxification). The sample size is usually estimated to be 5-20 people per each predictor variable. In this study, by considering 10 cases for each variable, $10 \times 19 = 190$ cases were calculated and by considering the probability of falling, 200 cases were considered. 40 people were selected from each of five areas (the north, south, east, west, and center) of the city of Amol. Convenient sampling was done per center. At first, a list of addiction treatment clinics was prepared, and two clinics were selected from each of the regions of the city. In this article, demographic characteristics have primarily been assessed. Drug use disorders were evaluated using the World Health Organization's Alcohol, smoking, and substance involvement screening test (ASSIST). Inclusion criteria included age over 60s, and ability to answer questions, and exclusion criteria was the patients' unwillingness to cooperate.

Alcohol, smoking, and substance involvement screening test

The questionnaire is a valid tool, designed by Humeniuk and Ali (2006) (13), and validated by the World Health Organization. This questionnaire has been used in more than 25 studies (14). Its

Cronbach's alpha was 0.89. In current study, the Cronbach's alpha was 0.81. In the first item, the type of substance consumed throughout life is questioned. In items 2-5, the status of the last three months is evaluated and the answers are scored based on 5-Point Likert scale. Items 6 and 7 are Likert's 3-point options. In item 8, the use of the inject form of the drug is questioned. In all items, never, is scored zero, and the score for the remaining options is gradually increased. Based on the sum of scores from questions 2 to 7, the level of risk is divided into three groups: low (0-3), medium (4-26), and high (27 and higher) (14). After obtaining permission from the developer, the translation re-translation process was conducted independently by two fluent English and Persian speakers outside the research team and confirmed by content validity method (15). Finally, the simplicity and difficulty of the Persian version of the questionnaire was evaluated by elderly people with different levels of literacy and necessary corrections were made.

This study was approved by the Ethics Committee of Mazandaran University of Medical Sciences, IRAN (Ethical code IR, Mazums. REC. 96-2848). The researcher referred to an addiction treatment clinic after obtaining a research license and, while expressing the goals and manner of the study, identified the eligible elderly and, after obtaining informed consent from these patients, assured them about the confidentiality of the information.

The collected data were then analyzed using descriptive and inferential tests, such as independent t-test and ANOVA, using SPSS Software (V.21).

3. Results

The number of 163 (81.5%) out of 200 participants were elderly males. The mean age of male sample was 64.36 ± 2.72 , and the mean age of female sample was 62.48 ± 1.90 . Most of the elderly (72 persons, 36%) had elementary education. The majority of the elderly sample (137 persons, 68.5%) were married, and 69 persons (34.5%) were employed, while 67 persons (33.5%) were retired or on pension. Most of the participants (76 persons, 38%) had 3 children, and many of them (98 persons, 49%) earned less than living expenses. Also, 131 samples

(65.5%) owned personal housing. The mean age of the onset of abuse was 36.33 ± 8.74 (min 20 and max 60 years), whereas the mean age of the onset of dependency was 39.44 ± 8.28 (min 25 and max 63 years). At the same time, the mean duration of dependency was found to be 24.44 ± 9.41 (min. 2 and max 55 years). More than half of the elderly (112 persons, 56%) had a history of detoxification, and 197 samples (98.5%) had never consumed inject substances. The frequency of the type of substance is given in Table 1.

Table 1. Frequency of the type of substances in the elderly people (N=200)

Type of substance	Number (%)	
	Yes	No
Tobacco products	130(65)	70(35)
Alcoholic beverages	62(31)	138(69)
Cannabis	41(20.5)	159(79.5)
Cocaine	13(6.5)	187(93.5)
Amphetamine type Stimulants	6(3)	194(97)
Inhaler	25(12.5)	175(87.5)
Sedative or sleeping pills	53(26.5)	147(73.5)
Hallucinogens	9(4.5)	191(95.5)
Opioids	200(100)	0(0)
Others	2(1)	198(99)

According to the above table, 100% of the elderly people used opioids.

There was no significant correlation between the severity of substance use and the level of education, type of housing, number of children, and the history of

death of loved ones in the last six months. But there was a significant correlation between the severity of substance use and gender, job, income, and marital status. Details are given in Tables 2 to 5.

Table 2. Comparison between the severity of substance use and gender in the elderly people.

The severity of substance use	Gender	Number	Mean \pm SD	T	P
Tobacco products	F	9	13.33 \pm 5.19	3.38	0.001
	M	121	18.3 \pm 4.18		
Cannabis	F	4	15 \pm 10.23	2.61	0.013
	M	37	6 \pm 6.13		
Inhaler	F	2	4 \pm 1.41	0.175	0.860
	M	23	4.6 \pm 4.81		
Sedative or sleeping pills	F	14	15.5 \pm 7.5	0.49	0.620
	M	39	14.3 \pm 7.86		
Opioids	F	37	17.51 \pm 5.77	0.36	0.710
	M	163	17.82 \pm 4.35		

*F= Female M= Male

The above table shows that the intensity of tobacco use in males is significantly higher than that of females, and the severity of use

of cannabis in females is significantly higher than that of males.

Table 3. Comparison between the severity of substance use and job in the elderly people.

The severity of substance use	Job	Number	Mean \pm SD	F	P
Tobacco products	Employed	46	16.54 \pm 4.51	9.55	0.001
	Retired	43	18.83 \pm 3.97		
	House-keeper	9	13.33 \pm 5.19		
	Unemployed	32	20.12 \pm 2.89		
Alcoholic beverages	Employed	35	17.28 \pm 7.33	1.31	0.276
	Retired	19	14.36 \pm 7.62		
	House-keeper	0	0		
	Unemployed	8	13.62 \pm 8.92		
Cannabis	Employed	21	6.76 \pm 6.31	2.69	0.060
	Retired	9	6.22 \pm 7.67		
	House-keeper	4	15 \pm 10.23		
	Unemployed	7	3.42 \pm 2.07		
Inhaler	Employed	8	6.62 \pm 7.94	0.796	0.510
	Retired	7	4 \pm 1.29		
	House-keeper	1	3 \pm 0		
	Unemployed	9	3.33 \pm 1		
Sedative or sleeping pills	Employed	13	12 \pm 5.38	3	0.039
	Retired	14	19.21 \pm 8.23		
	House-keeper	10	15.4 \pm 6.81		
	Unemployed	16	12.25 \pm 8.02		
Opioids	Employed	69	16.78 \pm 4.13	1.94	0.124
	Retired	67	18.14 \pm 4.68		
	House-keeper	27	17.77 \pm 5.93		
	Unemployed	37	18.89 \pm 4.18		

The above table shows that the intensity of consumption of tobacco products in unemployed and retired people is significantly higher than other groups and

the severity of sedative or sleeping pills use in retired people is significantly higher than other groups.

Table 4. Comparison between the severity of substance use and income in the elderly people.

The severity of substance use	Income	Number	Mean \pm SD	F	P
Tobacco products	less than LE	66	18.59 \pm 3.69	3.61	0.030
	Equal to LE	59	17.64 \pm 4.93		
	More than LE	5	13.4 \pm 4.66		
Alcoholic beverages	less than LE	27	14.74 \pm 7.93	2.10	0.131
	Equal to LE	31	16.03 \pm 7.40		
	More than LE	4	23 \pm 4.69		
Cannabis	less than LE	20	7 \pm 7.75	5.14	0.011
	Equal to LE	19	5.31 \pm 4.46		
	More than LE	2	20.5 \pm 6.36		
Inhaler	less than LE	9	6.87 \pm 1.13	0.655	0.427
	Equal to LE	16	3.55 \pm 5.7		
	More than LE	0	0 \pm 0		
Sedative or sleeping pills	less than LE	35	15.11 \pm 7.71	0.414	0.523
	Equal to LE	18	13.66 \pm 7.85		
	More than LE	0	0 \pm 0		
Opioids	less than LE	98	17.92 \pm 5.09	1.36	0.257
	Equal to LE	94	17.81 \pm 4.02		
	More than LE	8	15.12 \pm 5.22		

LE= Living Expenses

The above table shows that the intensity of tobacco use in people whose income is less than living expenses is significantly

higher, and the incidence of cannabis use in people whose income exceeds the cost of living is significantly higher.

Table 5. Comparison between the severity of substance use and marital status in the elderly people.

The severity of substance use	Marital status	Number	Mean \pm SD	F	P
Tobacco products	Single	5	15.40 \pm 2.5	2.01	0.115
	Married	90	17.97 \pm 4.45		
	Widow	30	18.9 \pm 4.02		
	Divorced	5	14.6 \pm 6.06		
Alcoholic beverages	Single	2	22 \pm 1.41	3.02	0.037
	Married	51	15.39 \pm 7.25		
	Widow	5	11.8 \pm 9.41		
	Divorced	4	24.75 \pm 6.07		
Cannabis	Single	3	7.66 \pm 8.08	0.588	0.627
	Married	25	5.8 \pm 5.45		
	Widow	11	8.36 \pm 9.88		
	Divorced	2	11 \pm 7.07		
Inhaler	Single	1	5 \pm 0	0.302	0.743
	Married	13	5.23 \pm 6.33		
	Widow	11	3.72 \pm 1.27		
	Divorced	0	0 \pm 0		
Sedative or sleeping pills	Single	4	13.5 \pm 4.20	0.951	0.423
	Married	28	14.46 \pm 7.4		
	Widow	17	13.7 \pm 8.91		
	Divorced	4	20.75 \pm 6.34		
Opioids	Single	7	18.85 \pm 5.14	1.01	0.385
	Married	137	17.37 \pm 4.39		
	Widow	46	18.52 \pm 5.15		
	Divorced	10	18.8 \pm 5.13		

The above table shows that the intensity of alcoholic beverages use is significantly higher in divorced people ($P=0.037$).

4. Discussion

The results of the current study showed that the majority of samples were elderly males (81.5%). The mean age of elderly males (64.36) was higher than that of females (62.48), and most elderlies (36%) had elementary education. The majority of the elderlies (68.5%) were also married, and 49% had lower incomes than living expenses. These findings were found to be consistent with the study of Mortazavi et al. (10) and Asadollahi et al. (16). In Mortazavi et al. study, the majority of samples were male (95.6%). The reason may be that substance abuse in Iranian women is lower than that of Iranian men, or fewer women refer to rehabilitation centers. However, in terms of education, there was a difference between the two studies, and the majority of the elderly in their study (83%) were illiterate (10). In a study conducted by Asadollahi et al., the inclusion criteria was 55 years of age, and 64% of the samples were from 55 to 60 years old. Most of them (87%) were male, 71% were illiterate or with low literacy, and 83% were retired or disabled (16).

The findings of the present study showed that 100% of the elderly used opioids, 65% tobacco, 31% alcoholic beverages, and 26.5% sedative and sleep pills. The average consumption of tobacco products (17.96) and consumption of opium (17.76) were higher than other substances. In the study of Mortazavi et al., the most used substance was found to be opium (87.5%) (10). In the review of Wu et al. (2014), which was conducted on the 2005-2013 published paper in MEDLINE and Psych Info databases, 60% of people over 50

years of age used alcohol and 3% illicit drugs (17). At the same time, in the study conducted by Reif et al., on 563 patients over the age of 18, who were recently treated with addiction, the most consumed substances were documented to be heroin (37%), alcohol (25%) and cocaine (14%) (18). But in a nationwide survey conducted in the United States (2011), marijuana was the most commonly used substance in elderlies (19).

Based on the findings of the current study, there was a significant relationship between gender and intensity of tobacco and cannabis use, and the average consumption of tobacco products was higher in males while female mostly used cannabis. The relationship between gender and substance abuse was consistent with that of Iparraguirre, and Grella and Lovinger(21,20), while this relationship was found to be in contrast with the results of Mortazavi and Asadollahi studies (10, 16). The findings of the Iparraguirre study (2015) showed that alcohol consumption increased in women by high income and young age, and was associated with a lot of harms to retired women than retired men. According to the study results of Grella and Lovinger (2012), although there was no significant difference between elderly men and women referring to rehab centers for drug addiction, in some aspects, deeper care was needed. For example, older women had better home protection systems (21). In the studies of Mortazavi and Asadollahi, there was also no significant relationship between gender and substance abuse (10, 16). The current study showed that there was a significant relationship between job status and the intensity of tobacco products and sleeping pills consumption.

The average consumption of tobacco products and sedative pills were higher among unemployed and retired elderlies, respectively. This finding is consistent with the results of Asadollahi et al., in which there was a significant relationship between retirement and substance abuse (16). It seems that the financial problems arising from retirement, and the reduction of social activity levels were among the factors influencing the tendency towards substance abuse at this age (10). In addition, aging was observed to create a set of physical, functional, emotional, and social changes that may lead the person to addiction. Most doctors were reported to prescribe medications to combat motor problems, chronic pain, insomnia, anxiety, and depression that can cause dependency (11).

According to the results of the current study, there was a significant relationship between tobacco and cannabis consumption and income. The average consumption of tobacco products was more common in the elderly with less than living expenses income; and the average consumption of cannabis was higher in elderlies with more than living expenses income. It was documented that the socioeconomic status played an important role in the pattern of drug abuse. Alcohol abuse appeared to be more common in people with higher incomes, and correlated with higher education. According to a national survey on drug abuse in people over the age of 12 in the United States (2011), approximately 78% of people with an annual income of over \$ 75,000 consumed alcohol, while this rate was 45% in those with lower than \$ 30,000 annual income. Also, more than 80% of university students consumed alcohol, while this rate

was less than 52% in high school and lower education students (19). On the other hand, the consumption of opium-containing substances was more common in the low-income groups. But heroin use has increased in all individuals with different levels of income. Also, in heroin users, there was an increase in abuse of other substances, such as cocaine and opioid analgesics. The reason for the prevalence of over-dosage of opiate substances in poorer communities was found to be the lack of awareness of the dangers of such excessive consumption. Some of them may face such risks due to self-treatment as a result of lack of access to treatment facilities (22).

The results of the current study showed that there was a significant relationship between the marital status and the intensity of consumption of alcoholic beverages, with the higher average consumption of alcoholic beverages in older divorced people. This finding was consistent with the results of Asadollahie et al., and Iparraguirre (16, 20). The researcher's explanation was that divorce can provide grounds for loneliness and symptoms of depression and lead the person to more substance abuse. Since most participants in this study were male, another analysis could be that women can play a supportive role in preventing their husbands from substance abuse. Recognition of factors affecting substance use disorders among older people seems necessary.

Acknowledgement

This study was approved by the Ethics Committee of Mazandaran University of Medical Sciences, IRAN (Ethical code IR, Mazums. REC.96-2848). The authors are thankful to the dear elderly participants,

and the colleagues of Amol Addiction Treatment Clinics for their cooperation.

Conflict of interests

None declared.

References

- McDonough M. Addiction, Co-morbidity and Chronic Disease Management. *Journal of Alcohol and Drug Dependency*, 2013, 2(1):1-2. DOI:10.4172/2329-488.1000e108
- World Drug Report. United Nations Office on Drugs and Crime. (UNODC). Vienna. 2016. ISBN: 978-92-1-148286-7
- Sorrell JM. Substance use disorders in long term care settings: A crisis of care for older adults. *Journal of psychosocial nursing and mental health services*. 2017; 55(1): 24-27 PMID: 28135388
- Rothrauff TC, Abraham AJ, Bride BE, Roman PM. Substance abuse treatment for older adults in private centers. *Substance Abuse* 2011; 32(1):7-15. PMID: PMC3061824
- Specific Populations and Prescription Drug Misuse and Abuse. 2014 National Survey on Drug Use and Health (NSDUH) available at: Substance Abuse and Mental Health Services Administration(SAMHSA) Feb 16 2016
- Habbibi A, Nikpour S, Seyedoshohadaie M, Haghani H. Health promoting behaviors and Quality of life in elderly. *Journal of Ardabil University Medical Sciences*. 2008; 1: 29-36.[In Persian]
- Sarkar S, Parmar A, Chatterjee B. Substance use disorders in the elderly: A review. *Journal of Geriatric Mental Health | Published by Wolters Kluwer - Medknow*, 2015; 2: 74-82. DOI: 10.4103/2348-9995.174271
- Gage S, Melillo KD. Substance abuse in older adults: Policy issues. *Journal of Gerontological Nursing* 2011; 37:8-11. PMID: 22084964
- Basca, B. The Elderly and Prescription Drug Misuse and Abuse. *Prevention Tactics*, 2008; 9(2):1-8 Center for Applied Research Solutions (CARS). Permit No: 2840 Available at: www.cars-rp.org
- Mortazavi S, Shati M, Malakouti K, Mohammadi K. Psychiatric Comorbidities among Iranian Elderly Patients on Methadone Maintenance Treatment. *Archives of Iranian Medicine*, 2015;18(11):740-6 PMID:26497370
- Bratvand M, Soodani M, Zarei E, Asadollahi A. Sexual abuse and drug abuse among homeless children in Ahzavaz, Iran. *Child Abuse Review*. 2013; 22(6):408-18 DOI: 10.1002/car.2263
- Jazayeri AR, Moshtagh N. Substance Abuse in the Elderly. *Iranian Journal of Aging*, 2006; 1(1): 56-51.[In Persian]
- Humeniuk R. validation of Alcohol, smoking, and substance involvement screening test and pilot brief intervention[electronic resource]: a technical report of phase II findings of the WHO ASSIST project /prepared by Rachel Humeniuk & Robert Ali, on behalf of the WHO ASSIST phase II study group. 2006
- Humeniuk R, Ali R, Babor TF, Farrell M, Formigoni ML, jittiwutikarn J, et al. Validation of Alcohol, smoking, and substance involvement screening test *Addiction*. 2008; 103(6):1039-47. PMID:18373724
- Polith D, Beck F. *Nursing research: Appraising evidence for nursing practice*. Philadelphia: Lippincott Co. 2014 ISBN: 978-1-4511-7679-7.
- Assadollahi A, Baratvand M, Valizadeh SH, Havasi A. Drug use disorder and chemical solutions in elderly of Ahvaz. *Salmand*. 2007; 2(5):346-351.[In Persian]
- Wu LT, Blazer DG. Substance use disorders and psychiatric comorbidity in mid and later life: a review. *International Journal of Epidemiology*. 2014; 43:304-317 DOI:10.1093/ije/dyt173
- Reif S, Larson M, Cheng D.M, Allensworth D, Samet J, Saitz R. Chronic disease and recent addiction treatment utilization among alcohol and drug dependent adults. *Substance Abuse Treatment, Prevention*. 2011; 6 (28): 1-10 PMID: PMC3220629
- National Survey on Drug Use and Health. (2011, September). Retrieved October, 2016. <https://www.samhsa.gov/data/sites/default/files/2011MHFDT/.../NSDUHmhfr2011.ht>

20. Iparraguirre, J. Socioeconomic determinants of risk of harmful alcohol drinking among people aged 50 or over in England. *BMJ Open* 2015; 5: e007684. <http://dx.doi.org/10.1136>
21. Grella CE, Lovinger K. Gender differences in physical and mental health outcomes among an aging cohort individuals with a history of heroin dependence. *Addictive Behaviors*. 2012; 37(3):306-312 PMID: 3258372 Today's Heroin Epidemic | Vital Signs | CDC. (2015, July). Retrieved October, 2016 <https://www.cdc.gov/vitalsigns/heroin/index.html>.