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Social Determinants of Addiction in Middle-aged Population in Yazd

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ABSTRACT

Introduction: There are several determinants involved in drug abuse, some of which, especially social factors, can be changed and corrected; therefore, more effective prevention programs can be implemented by recognizing them. This case study aimed to determine the social factors of addiction in middle-aged population living in Yazd city.

Methods: In this case-control study conducted during 2019- 2020, 150 substance users who referred to methadone maintenance treatment centers (MMTCs) were involved in a case group and 150 subjects, matched in terms of sex and age, were selected as a control group. The cases were selected by cluster sampling method from Yazd MMTCs. The witnesses were selected from the neighbors of the cases.
The data collection tool was a researcher-made questionnaire that consisted of three parts, including demographic questions, economic and social factors, and substance abuse-related questions. The content validity of the questionnaire was confirmed by experts and its reliability by Cronbach's alpha coefficient which was 0.75. The cases were selected by cluster sampling from MMTCs.
The data were analyzed using SPSS software and Binary logistic regression model was used to find the related characteristics.

Results: The results of logistic regression model showed that individuals working in non- profit organizations had the highest share in relation to substance user, with an odds ratio of 4.65 (OR=4.65,95%CI:1.4-15.38,P=0.01). The use of drugs, substance user's first-degree relatives, and substance user's friends with odds ratios of (OR=3.4,95%CI:1.87-6.2,P=0.0001), (OR=2.97,95%CI:1.5-6.03,P=0.002), and (OR=2.6, 95%CI:1.43-4.75,P=0.002).
respectively, were significantly related to substance user and had the highest risk for substance user. (P = 0.0001).

Conclusion: The results of this study indicated that substance users had more social risk factors compared to the general population. Therefore, planned measures to reduce these risk factors among the community, especially young people and their friends, by family, and community officials are necessary. Family plays a decisive role in choosing a friend for their children.

Keywords: Substance User, Social Factors, Middle-aged, Iran

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Introduction

Addiction is a psychosocial disorder that results from abnormal and unauthorized use of substances, such as alcohol, opium, and cannabis and causes psychological or physiological dependence to these substances (1, 2).

Substance abuse is a phenomenon that in addition to unhealthy social, economic, political and cultural contexts, personality, psychological, behavioral and educational contexts are also of great importance in how people get addicted. Today, the issue of addiction and the factors affecting it has become the most important crisis in the world and threatens the social, economic, political, welfare, and health structure of different countries of the world (3). Along with the three global crises of poverty and population growth, environmental destruction, and nuclear threats, the issue of drugs and psychotropic substances as the fourth crisis and the biggest shock of the third millennium has caused over 170 countries in the world to grapple with this problem. In the project of the prevalence of drug abuse in the country in 1390, the prevalence of addiction was 2.65% in the population aged 15 to 64 years, which was reported to be 3.1% in people of Yazd province (4, 5).

Babaei Fard et al.'s study showed that factors, such as addicted friends and family members play an important role in people becoming addicted (6).

Hajian et al. reported that the tendency of people to use drugs is due to bad friends and then introduced hedonism (7).

The results of Faizi et al.'s study showed that the main causes of drug addiction from the perspective of addicts referring to addiction treatment centers in Kermanshah province, included communication with addicted friends and acquaintances, attending night parties, loneliness and lack of good friends, interest in using drugs and having curiosity about these substances (8).

In Iran, the growth of substance user is 3 times the population growth. Substance user in this country grows by about 8% annually, while the annual population growth is about 1.2%. Therefore, the number of addicts grows more than 3 times the population growth annually (9).

Deaths due to drug abuse after accidents and traffic incidents are the second most common cause of unnatural deaths in Iran. This indicates that an average of 10 people die every day in the country due to drug abuse (10).

Due to the high prevalence of addiction in the country and the resulting socio-health problems, addiction is considered as one of the few health priorities in the country and today one of the concerns of Iranian families is the fear of young people getting involved in addiction (11, 12).

Addiction is considered as one of the 14 social determinants of health in the country. Although Yazd province is in the center of Iran and in the transit route of drug trafficking and the population of Yazd is increasing due labor migration, so far dimensions of addiction in this city have not been studied as a case-control study and all studies have been descriptive. The aim of the present study was to determine the social determinants of addiction in people over the age of 20 years referred to methadone maintenance treatment centers (MMTCs) in Yazd.

Methods

The present study is a case-control study, involving 150 addicts who referred to MMTCs as a case group and 150 matched subjects in terms of age and sex as a control group among the population of the addicts over the age of 20 living in Yazd, Iran (IR.SSU.MEDICINE.REC.1398.073). The study was carried out in 2019.

The sample size was selected with a significant level of 5% and a test power of 80%.

1)

$$n=\frac{\left(z_{1-\frac{\alpha}{2}}\sqrt{2\bar{P}(1-\bar{P})}+z_{1-\beta}\sqrt{P_1(1-P_1)+P_2(1-P_2)}\right)^2}{(P_1-P_2)^2} \qquad \bar{P}=\frac{P_1+P_2}{2}$$

2)

$$OR=\frac{\frac{P_1}{1-P_1}}{\frac{P_2}{1-P_2}}$$

Each group consisted of 150 participants. According to a similar study that reported the level

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of education as an important factor, the minimum odds ratio value was taken 2; therefore, the same odds ratio amount was considered for this study (15).

A cluster sampling method was applied for selecting the cases; therefore, 8 MMTCs from 8 different areas (8 clusters) in Yazd city and 18 qualified cases from each center were selected by simple random sampling. The data collection tool was a researcher-made questionnaire consisted of three parts, including demographic questions, economic and social factors, and drug-related questions. The controls were also selected from the neighbors living in the same vicinity of the cases.

The content validity of the questionnaire was affirmed by experts and its reliability, obtained by Cronbach's alpha coefficient, was 0.75.

The inclusion criteria were people who have lived in Yazd for at least three years and having a willingness to cooperate and talk about questions. The exclusion criteria included addicts who do not consent and suffer from chronic physical and mental illness.

The variables studied to determine the social factors of addiction in this study were as follows:

Demographic variables (marital status, place of residence, ethnicity), economic and social status (income, social class, housing status, education, employment status) which after summarizing the questions (5-piont Likert scale) and combining them into a column, the total column was divided into 5 achievable scores ranging from 0.8 to 3.6. Social risk factors (history of addiction in first-degree relatives, history of addiction in second-degree relatives, history of addiction in substance user's friends and smoking) which were in form of yes/no options, which included 4 questions. After summarizing the questions and combining them, an achievable score range of 0 to 4 was obtained. Social health consisted of 14 questions that after summarizing the questions (in the form of 5-point Likert scale) and combining them into one column and dividing the overall column by 5, the achievable score range from 4.8 to 12.86 was obtained.

After collecting the data and performing the necessary controls, the data were entered into SPSS 23 and analyzed using descriptive statistics, such as mean, percentage, statistical tests of chi-square and Mann-Whitney U test . Also, binary logistic regression model was used to estimate raw odds ratio and adjusted odds ratio to determine the predictors of addiction. A 95% confidence interval was used to interpret and analyze the results.

Ethics approval and consent to participate

All procedures performed in this study were approved by the ethics committee of Shahid Sadoughi University of Medical Science, Yazd, Iran (IR.SSU.MEDICINE.REC.1398.073). During the training of interviewers, principal investigator emphasized the importance of obtaining informed consent and informed that participants can choose not to answer any questions. Written informed consent was obtained from all the participants.

Results

Out of 300 participants in the study, 139 (92.7%) of the case and control groups were male. The mean ages of case and control subjects were38.47 and 36.38, respectively (P>0.05) (Table 1).

The differences between the two groups in terms of job status, addiction of first-degree relatives, addicted friends, and smoking were statistically significant. And among them, self-employment with an odds ratio of 4.65 had the highest rate in relation to addiction. In the later stages, tobacco addicts, first-degree family addicts, and substance user's friends were significantly associated with addiction with odds ratios of 3.4, 2.97, and 2.6, respectively (p= 0.0000) (Table 3).

According to the results of binary logistic regression, the following risk factors indicated the highest odds of addiction development: self-employment (OR=4.65,95%CI:1.4-15.38,P=0.01), smoking (OR=3.4,95%CI:1.87-6.2,P=0.0001), substance user's first-degree relatives (OR=2.97, 95%CI:1.5-6.03, P=0.002), and substance user's friends (OR=2.61, 95%CI:1.43-4.75,P=0.002).

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Table 1. Comparison of the relative frequency distribution of demographic factors in the case and control groups

Group		Case		Control		p
		Number	Percentage	Number	Percentage	
Sex	Female	11	7.3	11	7.3	>0/05
	Male	139	92.7	139	92.7	
Age	20-24.9	6	4.0	6	4.0	>0/05
	25-29.9	15	10.0	25	16.7	
	30-34.9	27	18.0	28	18.7	
	35-39.9	26	17.3	38	25.3	
	40-44.9	39	26.0	30	20.0	
	45-50	37	24.7	23	15.3	
Marital status	Single	20	13.3	18	12.0	>0/05
	Married	126	84.0	130	86.7	
	Other	4	2.7	2	1.3	
Nationality	Non-Persian	27	18.0	23	15.3	>0/05
	Persian	123	82.0	127	84.7	
Residence	house owner	42	28.0	64	42.7	>0/05
	Rental	73	48.7	58	38.7	
	Mortgage	10	6.7	7	4.7	
	Father's house	21	14.0	16	10.7	
	Other	4	2.7	5	3.3	
Total		150	100.0	150	100.0	

Table 2. Comparison of the relative frequency distribution of social risk factors in individuals in case and control groups

Group			Case		Control		p
			Number	Percentage	Number	Percentage	
Smoking		No	44	29.3	94	62.7	0.0001
		Yes	106	70.7	56	37.3	
Substance user's	friends	Yes	103	68.7	50	33.3	0.0001
		No	47	31.3	100	66.7	
Substance user's	first-degree relatives	Yes	68	45.3	19	12.7	0.0001
		No	82	54.7	131	87.3	
Substance user's	second-degree relatives	Yes	94	62.7	51	34.0	0.0001
		No	56	37.3	99	66.0	
Total			150	100	150	100	

The mean rank of social risk factors in the case group was higher than the controls, indicating that the presence of social risk factors in substance users was more than other people.

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Table 3. Comparison of the relative frequency distribution of social risk factors in individuals in case and control groups

Group		Case		Control		OR	p
		Number	Percentage	Number	Percentage		
Job status	self-employed	47	31.3	18	12.0	4.65	0.0000
Social risk factors	Substance user's first-degree relatives	68	45.3	19	12.7	2.97	0.0000
	Substance user's friends	103	68.7	50	33.3	2.6	
	smoking	106	70.7	56	37.3	3.4	
Total		150	100.0	150	100.0		

In this study, logistic regression has been used to determine the social determinants of addiction and to calculate the odds ratio. Since it is necessary to include the least predictor variables in the model, firstly, all variables related to addiction were tested individually using logistic regression. As a result, the following variables indicated a meaningful relationship (<0.05) with addiction: socio-economic factors (OR = 0.53), social risk factors [substance user's first-degree relatives(OR = 5.7), substance user's second-degree relatives(OR = 3.26), substance user's friends (38 OR = 4.4), smoking (OR = 4.04)], social health factors (OR = 0.68), employment status [others (OR = 6.9), self-employed(OR = 6.53), and unemployed (OR = 2.72].These items were then entered into the model simultaneously and tested by the enter method.

The values of Cox & Snell R Square and Negelkerke R Square in this model showed that between 33% and 44% of the variability is explained by this set of variables. Also, this model correctly classified 77% of the cases.

According to the results of Table 4, except for socio-economic factors, social health, and second-degree addicts, the relationship between other variables included in the model and addiction was at a significant level, and in the meantime, self-employment with an odds ratio of 4.65 had the highest rate in relation with addiction. On the next stage, smoking, first-degree addicts, and substance user's friends with odds ratio of 3.4, 2.97, and 2.6, respectively, remained significantly in the model.

Table 4. Determining the status in relation to the adjusted odds ratio of predictor variables based on logistic regression test

Variable		multivariate regression model			single regression model		
		sig	OR*	95%CI	sig	OR*	95%CI
Social risk factors	Socio-economic status	0.32	0.74	1.35– 0.41	0.002	0.53	0.79– 0.35
	Substance user's first-degree relatives	0.002	2.97	6.03– 1.5	0.000	5.7	10.20– 3.21
	Substance user's second-degree relatives	0.50	1.24	2.33– 0.66	0.000	3.25	5.20– 2.03
	Substance user's friends	0.002	2.61	1.43- 4.75	0.000	4.38	7.11– 2.70
	smoking	0.000	3.4	6.2–1.87	0.000	4.04	10.20– 3.21
Job status	Employee	Ref.	Ref.	Ref.	0.000	1	
	Unemployed	0.95	0.96	3.26– 0.28	0.038	2.72	7.02– 1.06
	Worker	0.73	1.21	3.7– 0.4	0.304	1.6	3.92– 0.65
	self-employed	0.01	4.65	15.38– 1.4	0.007	6.87	28.09– 1.68
	other	0.08	4.64	26.1– 0.83	0.000	6.52	17.45– 2.44
	Constant	0.89	1.20		0.028	0.400	

*OR: Odds Ratio

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Discussion

The results of this study showed that social risk factors (smoking, first degree addicts, family, and substance user's friends) and self-employment increase the chances of substance abuse.

In the present study, 68.7% of the addicts had friends with drug abuse, while this figure was 33.3% in the control group with a statistically significant difference. It was consistent with Karimi et al. and kaldi 's studies of having substance user's friends and colleagues, and the loss of social status in the substance-oriented approach which is consistent with the present study (13, 14).

In the study of Asayesh et al., it was shown that having a substance user's friend increased the chance of tendency to drug abuse by 7.32 times and a history of being a smoker in the past or present, increased the chance of drug abuse by 12.35 times. Also, people with permanent jobs compared to people who had temporary jobs, they were less likely to be a substance user which is consistent with the present study (15).

In the study of Nurco et al. in 1998, among drug addicts in Baltimore, it was found that peers with abnormal social behaviors were more likely to be substance user which is consistent with the present study (16).

Studies by Sussman et al. on American and Russian societies and allahverdi et al. reported that among intrapersonal social factors, drug abuse in friends and in the family correlated positively with a person's tendency to addiction which is consistent with the present study (17, 18).

Therefore, it can be concluded that having close friends who use addictive drugs and communicating with them through each other's approval in the future significantly increases a person's chances of drug abuse. It is necessary for families to be careful in choosing these friendships.

In the present study, smoking was significantly one of the determinants of opioid addiction, observed in 70.7% of the cases and 37.3% of the controls, which was consistent with the results of the study by Sharifi et al. (19).

The results of Sussman's study on the positive correlation between smoking in the last month and the tendency to addiction were in line with the present study. Moreover, the study of Feizi et al., which showed that 82.4% of the addicts had a history of smoking, supported the results of the current study (8, 17).

Therefore, smoking can be a predisposing factor for substance abuse. The need for proper implementation of laws on smoking is not only effective in reducing the damage caused by drug abuse, but also reduces the incidence of drug addiction and its severe complications.

In this study, most of the addicts were worker (32%) and self-employed (31.3%). In the study of Moshki et al., 39.3% were self-employed and 24.2% were worker. Also, Safari et al. and Feizi et al. reported that 64.2% and 51% of the substance users were self-employed, respectively, which is consistent with the present study (8-20-21).

Government jobs seem to be a deterrent to addiction due to more oversight and administrative rules and regulations than self-emplyment.

In the present study, a significant difference was observed between case and control groups in terms of drug use among first-degree relatives. In 45.3% of the case group and 12.7% of the controls, a history of addiction was observed in family members. Asadi et al. found a significant association between positive family history of addictive drugs and tendency to drug abuse, which is consistent with the present study (22).

Kardia et al. also identified parental addiction as a predictor of addiction and drug dependence, which is consistent with the current study (23).

The results of the study by Coviello et al. and Mohammad Khani et al. (2007) also were in line with the results of the present study on the increased risk of addiction in the presence of drug abuse in a family member (24, 25).

In terms of marital status, literacy level, ethnicity, and residence, no statistically significant relationship was observed with addiction in this study. In the study of Rimaz et al. as well as Hosseinzadeh et al., this relationship was not observed in terms of marital status and literacy level, which is consistent with the present study ($p>0.05$)(26, 27).

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Yazd province is a vulnerable city to drug abuse; since it is located at the center of the country in the transit route of drug trafficking, and it is near Kerman province, where the prevalence of narcotics is higher than other provinces. Moreover, the population of the province is increasing due to labor migration. Social disorganization has played a significant role in changing the culture, family breakdowns, and new friendships, which is the reason for people's tendency to drugs.

Conclusion

The results of this study showed that social risk factors (smoking, substance user's first degree relatives and substance user's friends) and self-employment could increase the risk of addiction. Therefore, planned measures to reduce these risk factors among the community, especially young people and their friends, are necessary by family and community officials. Moreover, family plays a decisive role in choosing a friend for their children.

Authors' contribution

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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Conflict of interest

In this study, There is no conflict of interest.

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