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Epidemiological study of alcohol consumption and risk of hospitalization

Hamid Mohammadi Kojidi[1]*, Morteza Rahbar Taramsari [1], Mir Saeed Attarchi[1], Habib Eslami Kenarsari [1], Marzieh Shamshiri [1], Zahra Gholizadeh [1]

[1] Razi Clinical Research Development Unit, Razi Hospital, Guilan University of Medical Sciences, Rasht, Iran

Abstract

Introduction: According to the high prevalence of alcohol poisoning, we aimed to study the demographical and clinical characteristics of patients with alcohol abuse, and the frequency of alcohol poisoning in hospitalized patients with alcohol consumption..

Materials and Methods: In this cross-sectional study, a total number of 513 patients who were referred to the Razi Hospital, Rasht, Iran, from 2015 to 2019, were tested for alcohol consumption. A checklist including demographic and clinical data of patients was completed by the researchers. Statistical analysis was performed via SPSS software version.22.

Results: Data analysis revealed that 85% of patients were male and the mean age of patients was 31.13±21.6 (12-18 years). 83.4% of the patients were residents of the city, and 52.8% were married. Self-employee had the highest frequency with 52.8%. 70.6% of the patients had alcohol abuse, and 49.7% of the patients had a history of smoking. In 96% of patients, the alcohol abuse was ethanol and in 4% of patients, it was methanol. 95.1% of the studied patients had symptoms of poisoning. 47% of patients had decreased level of consciousness. 58.9% of patients experienced nausea and vomiting. The majority of patients (96.7%) did not need dialysis. Studies showed that 95.5% of patients fully recovered.

Conclusion: Alcohol consumption is increasing in all different age groups, genders and social classes in Guilan province, but this rate has been higher in men and young people than in others, as well as lower educational levels, family income, unemployed, and lower social status can be considered as main factors that result in a higher risk of alcohol abuse.

Keywords: Alcohol consumption, Alcohol poisoning, Alcohol abuse, Social harms

*Corresponding Author: Hamid Mohammadi Kojidi

✉ Email: h_mohammadi8778@yahoo.com

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Introduction

Issues related to social harm have long been considered by researchers in human society. Concurrently with the spread of the industrial revolution and the expansion of requirements, deprivations due to the impossibility of satisfying the wants and needs, the severe and widespread spread of corruption, rebellion, crime, sexual perversion, and other harm has been increased (1,2). In the meantime, substance abuse, including alcohol as a social issue, is a phenomenon that destroys the ability of society to organize and maintain existing order, disrupts the normal functioning of social life, and causes a change in structural elements in society (3). There are numerous evidence to support the association between alcohol consumption and physical harm to the body. Several studies have shown that excessive alcohol consumption leads to a variety of violent and anti-social behaviors in adolescents and young people (4). Hence, high-risk and abnormal behaviors such as alcohol consumption have many devastating effects on both society and the individual and are considered as chronic, progressive, and potentially fatal social disorders (5). In this regard, prevention of alcohol abuse requires the application of various theories in various scientific disciplines. One of the theories proposed in this field is Bandura's Learning Theory. According to this theory, some environmental factors such as parental factors and deviant peers, and some individual factors such as avoidant coping style, self-esteem, and aggression are directly or indirectly related to substance use among adolescents. Therefore, the way adolescents and young people interact with the social environment around them plays an important role in promoting their health (6,7). Iran is in a better position than other countries in terms of alcohol addiction; however, since the exact statistics of Iranian alcoholics have not been collected, we cannot be too optimistic about this favorable situation and the increasing number of alcohol addicts in the country. On the other hand, if the preventive measures against drug addiction, non-narcotic drugs, psychotropic substances and alcohol are not taken seriously, we should expect a significant increasing tendency to use these substances, especially alcohol. At the same time, it should be said that the basis for starting alcohol consumption (alcohol concentration) is high in Iranian youth, so the concentration of alcohol consumption is 3% in Europe, and 40% in Iran (8). Cancers of the mouth, throat, larynx, esophagus, liver and breast are all associated with drinking alcohol. Also, alcohol may increase the risk of colon and rectal cancer (9–11). Therefore, some observations about alcohol consumption should be considered an important priority of health care organizations and also a community-based programs (8). According to the World Health Organization (WHO) report on the burden of disease in 2014, alcohol consumption accounted for 5.1% of the years lost due to disability (YLDs) and 5.9% (YLLs) of deaths. In Iran, recreational alcohol consumption of less than 10% was reported among young men in different parts of the country, and the prevalence of dependence on consumption in 2010 was about 0.2%. However, due to legal restrictions on the consumption of alcohol in Iran, most cases of alcohol consumption are secret and were not reported and recorded (12). Due to the importance of alcohol poisoning and the limited number of studies in this field, we decided to conduct an epidemiological study on individuals with alcohol consumption who were referred to Hospital. The results of the present study will be made available to health officials and politicians of the country for consideration in planning.

Materials and Methods

This is a descriptive cross-sectional study. The study population included 513 out of 13217 patients who were referred to Razi Hospital, Rasht, Iran, by poisoning symptoms due to alcohol abuse through census method in the period of March 2015 to March 2019. This present report was approved by the Ethics Committee of Guilan University of Medical Sciences (IR.GUMS.REC.1399.641), and all patient data has been kept confidential. Checklist of demographic and clinical information of the patient, including age, gender, occupation, level of education, marital status, residence status; history of alcohol abuse, smoking, drug use, medication, and underlying disease; duration of alcohol abuse, the month of alcohol intoxication, early signs of intoxication, need for dialysis, visual impairment, loss of consciousness, nausea and vomiting, abdomen pain, convulsion, laboratory examinations, and final condition of the patient, were completed. We also reviewed the history of underlying diseases from patients' records. The inclusion criteria were considered for all hospitalized patients diagnosed

with alcohol poisoning in the mentioned time period, and the exclusion criteria were considered to be the association of alcohol poisoning with other drugs and narcotics. Lack of access to more participants and complete information, and lack of access to blood methanol levels evaluation were the limitation of our study. Statistical analyses were performed via SPSS software version 22. Data were reported as frequency and percentage.

Results

The results demonstrated that the mean age of patient was 31.13±21.6 with a minimum of 12 and a maximum of 88 years. A comprehensive frequency analysis of data was illustrated in Table 1. According to our results, the majority of patients were male (85%), self-employed (52.8%), and urban residents (83.4%), with a history of alcohol abuse (70.6%). 95.1% of patients had poisoning symptoms, 4.5% of patients represented visual impairments, and 47% of them had a loss of consciousness. 8% of patients had a convulsion, and 3.3% of them require dialysis to survive. Laboratory findings reported abnormalities in 13.2% of patients. 4% of these patients had consumed methanol. The outcome of patients was the full recovery in 95.5%, blindness in 1.2%, and death in 1.9% (Table1).

Table 1. Important variables which are measured.

Variables		Prevalence	Percentage
Gender	Female	77	15%
	Male	436	85%
	Total	513	100%
Occupation	Unemployed	81	9.9%
	Self-employee	271	52.8%
	Clerk	8	1.6%
	Housewife	62	12.1%
	Retired	15	2.9%
	Student	85	16.6%
	Unknown	21	4.1%
	Total	513	100%
Education	Under diploma & diploma	162	31.6%
	Associate Degree	12	2.3%
	Bachelor and upper	11	2.1%
	Unknown	328	64 %
Marital status	Unmarried	243	47.4%
	Married	266	51.8%
	Divorced or widow	2	0.4%
	Unknown	2	0.4%
Residence status	Urban	428	83.4%
	Rural	83	16.2%
	Unknown	2	0.4%
Alcohol abuse	Yes	362	70.6%
	No	123	23.9%
	Unknown	28	5.5%
History of smoking	Yes	255	49.7%
	No	232	45.3%
	Unknown	26	5%
History of drug use	Yes	80	15.5%
	No	408	79.8%
	Unknown	25	5%
History of underlying disease	Yes	85	16.5%
	No	410	80.5%
	Unknown	18	3%
History of medication	Yes	66	12.8%
	No	428	73.5%
	Unknown	9	1.7%
Amount of patients in the year	In 2015	47	9.2%
	In 2016	65	12.7%
	In 2017	167	32.6%
	In 2018	107	20.8%
	In 2019	127	24.7%
Poisoning symptoms	Yes	478	95.1%
	No	25	4.9%
Visual impairment	Yes	23	4.5%
	No	490	95.5%
Loss of consciousness	Yes	241	47%
	No	272	53%
Nausea and vomiting	Yes	302	58.9%
	No	211	41.1%
Abdomen pain	Yes	62	12.1%

	No	451	87.9%
Convulsion	Yes	8	1.6%
	No	505	98.4%
Other symptoms	Yes	219	42.7%
	No	294	57.6%
Dialysis requires	Yes	17	3.3%
	No	496	96.7%
Laboratory findings	Abnormal	98	13.2%
	Normal	438	85.3%
	Unknown	7	1.5%
Type of alcohol	Ethanol	492	96%
	Methanol	21	4%
Patient outcome	Recovered	490	95.5%
	Blindness	6	1.2%
	Death	10	1.9%
	Unknown	7	1.4%

Discussion

Due to our results, the majority of the patient were male, which was similar to the study of Morteza Beigi et al. (13), Mostafazadeh et al. (14), and Roshanpajouh et al. (8), by 91%, 82%, and 82%, respectively. In the study by Haghdoost et al. (15) and Mohammadpour et al. (16), all subjects were male. As expected, one of the similarities between the results of the present study and other studies is that in our country, alcohol consumption is higher in men than women. In Morteza Beigi et al. study (13), the mean age of the patients was 27.9±10.4 years, which was similar to our study. Mostafazadeh et al. (14) reported that the mean age of individuals with alcohol consumption was 29.3±4.57 years. Also, Mohammadpour et al.(16) reported 16 years old as mean age of consumption, which was related to the statistical population of the subjects that were high school students, that did not agree with our study. Participants typically believe that alcohol consumption is predominantly in groups and on special occasions. In fact, since the possibility of group socializing is higher among young men and the low supervision of families, it can be said that alcohol consumption is higher in this age group. Furthermore, they reported that most of the subjects were urban, which was in coordinate with our study. Moreover, drug and psychotropic use was related to alcohol consumption and smoking, and high economic and social status was associated with both alcohol and drug consumption. A Mostafa Zadeh et al. (14) has reported that 50% of the patient were represented loos of consciousness and over 50% had nausea and vomiting. Also, the result of Morteza Beigi et al. (13) study illustrated that 12% of patients required dialysis, in which it was higher than our result (3.3%). According to some studies, the highest rate of alcohol poisoning was methanol poisoning with a higher percentage of death outcome, which was not consistent with our study (13,14), while the examination of the signs and symptoms of poisoning of patients shows that methanol was also present in the alcohol consumption of patients.

Based on the findings of this study, information about patients' education levels was not sufficient for our studies because only 10 of the subjects in this study had determined their level of education. Therefore, in future studies, it is better to do more research on the relationship between people's education level and alcohol consumption.

Conclusions

Findings from this study show that alcohol consumption refers to all age groups from 12 to 88 years, but this rate was higher in men and young people than in others. As well as the level of education, income and social status of the family affected the manner and type of alcohol consumed. In this regard, individuals with lower social status are more vulnerable.

Author contribution

HMK, MRT, and **MSA** designed the project and wrote the manuscript and alsp collected the data. **HEK**, **MSh** and **ZGh** accomponished in some other parts of the manuscript including writing and analysis the data. All the authors read and confirmed the final edited version of the manuscript.

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Conflict of interest

No potential conflict of interest was reported by the authors.

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