

Alcohol Use and Alcoholism Among Individuals with Schizophrenia in the North of Iran

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Abstract

Background: Alcohol consumption is one of the most common problematic issues globally that usually causes high costs for the health system. Also, schizophrenia is a chronic psychiatric disorder responsible for a heavy burden on healthcare providers.

Objectives: This study aimed to investigate alcohol use and alcoholism in schizophrenia in Iran.

Methods: A cross-sectional (descriptive-analytical) study was conducted on 400 individuals with schizophrenia referred to the psychiatry hospital of Mazandaran University of Medical Sciences. History of alcohol consumption and the criteria of alcohol use disorder according to DSM-5-TR were sought during the interviews using the Alcohol Use Disorder Identification Test (AUDIT).

Results: Of the patients, 45.5% had drunk alcohol at some point in their lives, 23% had low-risk alcohol consumption, and 10% experienced high-risk consumption. In addition, 1.5% of our sample suffered from alcoholism, according to the AUDIT.

Conclusions: The results of our study in Iran regarding alcohol use in schizophrenia are more similar to those of Western countries than eastern countries. The ratio of alcohol use in schizophrenia compared with the general population was even higher in our study than in western countries.

Keywords: Alcoholism, Alcohol Use Disorder, Schizophrenia, Psychiatry Hospital

1. Background

Alcohol consumption is considered one of the most common problematic issues in the world, especially in Western countries where the burden of alcohol consumption is one of the most expensive health and treatment costs (1). Besides the medical side effects mentioned in many studies, alcohol consumption has had harmful effects on the mental health of people in society (2, 3).

On the other hand, some people try self-medication by consuming alcohol due to primary psychiatric problems. Many studies have shown that people, who use alcohol as a self-medication, also use alcohol or other substances more severely and usually develop alcohol or other substance use disorders (4, 5).

Schizophrenia is a chronic psychiatric disorder that affects all societies regardless of culture and race and has a heavy burden on all countries every year (6). According to studies conducted in Western countries, the prevalence of alcohol consumption is about three times higher in schizophrenic patients than in the general population (7). More than 20% of people with schizophrenia have a comorbid problem with alcohol consumption, and neurobiological studies have implicated the role of Brain-derived Neu-

rotrophic Factors (BDNF) and Dopamine Receptor Number 3 (DRD3) in this issue (8). Some other studies have also found that alcohol consumption in people with schizophrenia affects the brain organs such as the thalamus, hippocampus, and subcortical structures involved in the decline of cognitive performance and, as a result, worsens the prognosis of these people (9-12).

In Iran, considering the illegality of alcohol consumption for religious reasons, people who consume alcohol usually have less recourse to health and treatment systems for preventive and therapeutic care (13). For this reason, there are no accurate statistics on alcohol consumption in Iran, and of course, this is also true for schizophrenic patients. In addition, on the one hand, schizophrenic patients do not pursue their treatment due to various reasons, including negative symptoms and lack of motivation, and on the other hand, these patients are usually rejected by the treatment systems due to the disorganization that they have in their speech or behavior. And many of their medical problems are either not diagnosed or, if diagnosed, are not adequately treated and followed up (14).

2. Objectives

Therefore, according to the burden of schizophrenia in societies along with alcohol consumption, it is necessary to conduct a detailed study in Iran to determine the amount of alcohol consumption and its associated problems in our country.

3. Methods

This was a cross-sectional (descriptive-analytical) study. The research population included 400 individuals with schizophrenia referred to Zare hospital, Mazandaran University of Medical Sciences Psychiatric Center, in Sari, Iran.

The results of Zai et al.'s study in 2018 were used to determine the sample size. In the mentioned study, the prevalence of alcohol use disorder in schizophrenia was more than 20%. Based on this result, with a confidence level of 95% and an accuracy of 0.04, the required sample size was estimated at 400 people.

$$n = \frac{z_{1-\frac{\alpha}{2}}^2 \times p \times (1-p)}{d^2}$$

The census method was used to collect data. After the proposal approval and the receipt of the code of ethics (IR.MAZUMS.REC.1400.9094), all available patients that met the inclusion criteria were included in the study until the expected sample size was reached. The inclusion criteria included every patient referred to the psychiatric clinic of Zare Hospital or admitted to the psychiatric ward and diagnosed with schizophrenia by a psychiatrist according to DSM-5-TR criteria.

A psychiatrist collected the data in face-to-face interviews with schizophrenia patients. History of alcohol consumption and the criteria of alcohol use disorder according to DSM-5-TR were sought in the interviews using the Alcohol Use Disorder Identification Test (AUDIT).

Data entry was done in SPSS version 20 software. Data refinement was implemented to eliminate possible deficiencies and check outlier data. The characteristics of the studied subjects were described using mean, standard deviation, median, and frequency.

4. Results

In this research, our sample size consisted of 400 patients with schizophrenia from both genders (300 males and 100 females). Since demographic information was regarded as of paramount importance for answering our research questions, our sample had various marital statuses, including single (67%), married (26.5%), and divorced (6.5%)

individuals. In addition, the literacy status of the sample varied, including illiterate people (1.5%), individuals with high school or lower degrees (84%), associate's and bachelor's degrees (13.5%), and master's and higher degrees (1%). Finally, we considered the living environment of our samples. The demographic data determined that 60% of the patients lived in urban areas, and the rest lived in suburban areas and villages. Considering our results, 45.5% of the patients experienced alcohol consumption at some point in their lives. In terms of prevalence, 57.3% of males had lifetime drinking. This percentage was lower among females, standing at 10%. Of 400 patients, 23% had low-risk alcohol consumption, whereas only 10% experienced high-risk consumption. In addition, 1.5% of our sample scored higher than 14 on the AUDIT test, meaning they suffered from alcoholism. The consumption status is demonstrated in [Table 1](#). In addition, we examined consumption status by gender, and the analysis results are presented in [Table 2](#).

Table 1. Consumption Status in the Entire Sample

	Frequency (%)
Not drinking at all	262 (65.5)
Alcoholism	6 (1.5)
High-risk consumption	40 (10.0)
Low-risk consumption	92 (23.0)
Total	400 (100.0)

Our analysis determined that the highest percentage of lifetime consumption belonged to divorced individuals at 53.8%, followed by single and married individuals at 47% and 39.6%, respectively. Regarding literacy status, as shown in [Table 3](#), people with master's and higher degrees significantly differed in lifelong alcohol consumption from other groups since nobody in this group reported a history of consumption.

Aside from literacy status, the consumption prevalence varied by the living area, as 46.7% of individuals who lived in urban areas reported lifetime consumption. Conversely, this proportion was lower for individuals who lived in villages at 43.8%. We examined alcohol consumption in different age groups. As demonstrated in [Table 4](#), lifetime use declined by age.

In the final phase of our analysis, we investigated the history of substance use and cigarette smoking. The results showed 44% and 62.5% use rates, respectively. These rates were more in the male population than in the female population. Regarding substance use, the rates were about 57% in men and only 6% in women, and in cigarette smoking, the percentage was about 80% in men and only 12% in women.

Table 2. Consumption Status by Gender^a

	Not Drinking at All	Alcoholism	High-risk	Low-risk
Males	170 (56.7)	6 (2)	36 (12)	88 (29.3)
Females	92 (92)	0 (0)	4 (4)	4 (4)

^a Values are expressed as No. (%)

Table 3. Consumption Status by Education

	Yes, %	No, %
Illiterate	33.3	66.7
High school or lower	47.6	52.4
Up to bachelor's degrees	37	63
Master's and higher degrees	0	100

Table 4. Consumption Status in Different Age Groups

	Yes, %	No, %
20 - 30	64.9	35.1
30 - 40	48.5	51.5
40 - 50	40.6	59.4
50 - 60	30	70
60 - 70	0	100

5. Discussion

The studies have described a complex relationship between schizophrenia and alcohol consumption. On the other hand, they consider chronic alcohol consumption to cause psychotic symptoms (alcohol-induced hallucinosis). Distinguishing these symptoms from schizophrenia is difficult, similar to methamphetamine or other stimulant use. Recent studies have shown higher consumption of alcohol and drugs in these populations (15, 16). In a study conducted by Zai et al. in Toronto, Canada, in 2018, the prevalence of alcohol use disorder in schizophrenia patients was over 20%. In our study, the prevalence of lifetime alcohol use in individuals with schizophrenia was 45.5%, followed by low-risk consumption (23%), high-risk alcohol consumption (10%), and alcoholism (1.5%) based on the AU-DIT questionnaire (8).

In another study published by Moggi in Germany in 2018, nearly half of the patients with schizophrenia had comorbidity with substance use disorder, and about a third of them also had alcohol use disorder. In comparison, our study showed that 44% of schizophrenic patients had a history of any substance use; this rate was higher in individuals with lifetime alcohol use (60%), and more than 62% of this population had a history of cigarette smoking. If

we just consider the male population in this regard, the cigarette smoking rate was more than 80% (17).

In a meta-analysis study published in Australia by Hunt et al. in 2018, information on the prevalence of concurrent drug and alcohol use in schizophrenia patients was extracted from 1990 to 2017. According to the findings, more than 24% of the population had comorbid alcohol. In our study, the prevalence of lifetime alcohol use was higher, almost equal to the rate of low-risk alcohol consumption, while the rates of high-risk alcohol consumption and alcoholism were lower (18).

In another study published in Singapore, East Asia, by Subramaniam et al. in 2017, the prevalence of problematic alcohol consumption in the population with schizophrenia and depression was investigated. The results of this study indicated that the prevalence of high-risk alcohol consumption was about 12%. This number was about 18% for people with depression and 6% for people with schizophrenia (19). According to the results of the above study, the prevalence of high-risk alcohol consumption in eastern societies, especially in people with schizophrenia, was significantly lower than the results obtained in the studies of western countries. It was even significantly lower than our study results in the Middle East (20). The aldehyde dehydrogenase 2 deficiency possibly plays a role in reducing alcohol consumption in the eastern population.

The largest study published by the National Center for Addiction Studies in Tehran by Amin-Esmaeili et al. in 2017 investigated the prevalence of alcohol consumption in 7,840 people aged 15 to 64. According to the results, the prevalence of alcohol consumption was about 1%, and harmful consumption was estimated at 0.6%. This statistic is significantly lower than the statistics of East Asian countries. Our study showed that the prevalence of lifetime alcohol consumption and problematic alcohol use was much higher in individuals with schizophrenia than in the general population in Iran (21).

The results of a study published by Habibi Saravi et al. in 2015 at Zare Psychiatry Hospital in Sari showed a high prevalence of drug use in hospitalized psychiatric patients, in which opioids alone or with other substances were the most commonly used substances in patients. In that study, the lifetime consumption of alcohol was men-

tioned in about 9% of psychiatric patients, which is much lower than in our study (22). This finding can be explained by increasing alcohol consumption after the COVID-19 pandemic because of a misconception in society that alcohol consumption has a protective role against the coronavirus.

The other study by Nikfarjam et al. in 2017 investigated alcohol consumption in the Iranian population using the Network Scale-up (NSU) method. The results of this study indicated that the prevalence of alcohol consumption in the past year was about 2.31% in men, which was eight times higher in men than in women. It was about three times higher in the population under 30 years old than in the population over 30 years old. In our study, the highest percentage of alcohol use was in the third decade of life, and it was significantly higher in the male population. The percentage of alcohol use, whether lifetime or harmful, was much higher than in the general population mentioned in this study (23).

In another study by Ahmadi et al. in 2001 in Shiraz, 205 psychiatric inpatients were examined for drug use. According to this study, schizophrenia patients constituted more than 61% of current drug users. The prevalence of alcohol consumption was reported as high as 23% in men and 4% in hospitalized women. Compared with our study regarding gender, almost 43% of the male population had a history of lifetime alcohol use. Compared with the female population, this percentage was 8%. Regarding low-risk alcohol use, the rate in the male population was about 30%, while in the female population, it was 4%. The rate of high-risk alcohol consumption was 12% in the male population and 4% in the female population, and finally, the percentage of alcoholism was 2% in the male population and zero in females (24).

Eventually, our study showed a higher rate of lifetime alcohol use, low-risk alcohol use, high-risk alcohol use, and alcoholism in schizophrenia patients than in the general population, as approved in similar studies conducted in Western countries. The results of our study in the Middle East regarding alcohol use in schizophrenia are more similar to those of Western countries than eastern countries. The ratio of alcohol use in schizophrenia compared with the general population in our study was even higher than this ratio in Western countries.

Considering the result of this study, alcohol use in a particular population, such as psychiatric patients, especially with schizophrenia, should be more considered.

As a result of disorganization and negative symptoms of schizophrenia, they usually do not tend to explain their problems to psychiatrists or other healthcare providers. Hence, mental healthcare providers such as psychologists and psychiatrists must consider these issues to prevent more severe medical and psychological complications.

Footnotes

Authors' Contribution: Study concept and design: Pezhman Hadinezhad; Acquisition data: Ali Yaghoobinia and Pouria Rahgosha; Statistical Analysis: Mahmood Mousazadeh.

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