Ethanol Dependence in the Context of the Covid-19 Pandemic. Comparative Study between January-March 2019-2021

Ioana Isabela NICOARĂ[1],
Mihai TERPAN[2],
Ciprian VLAD[3],
Cezar Ionut BICHESCU[4],
Anamaria CIUBARĂ[5]

[1] Resident psychiatrist, "Elisabeta Doamna" Hospital of Psychiatry, Galati, Romania, isabelaioana4@gmail.com
[2] PhD Student, University "Dunarea de Jos", Galati, Romania, terpan.mihai@yahoo.com
[3] Associate Profesor, "Dunarea de Jos" University, ciprian.vald@ugal.ro
[4] Associate Profesor, "Dunarea de Jos" University, cezar.bichescu@uagal.ro
[5] Hab. Professor at Faculty of Medicine and Pharmacy, "Dunarea de Jos" University, Head of Psychiatry Department, Galati, Romania, Senior Psychiatrist, "Elisabeta Doamna" Hospital of Psychiatry, Galati, Romania, anamaria.ciubara@ugal.ro

Abstract: *In Romania, alcohol is the most used substance of abuse and at the same time the most culturally acceptable, the abusive consumption of ethanol by individuals has a significant role in increasing the number of presentations in psychiatric services. The objective of this paper is to establish a comparison in the dynamics of presentations of chronic alcohol users at the 'Elisabeta Doamna' Psychiatriy Hospital in Galati, from January 1 to March 30, 2019-1 to January 30, March 2021. The retrospective study consists in comparing the group of patients presented between January 1, 2019 and March 30, 2019 with the group of patients presented between January 1, 2021 and March 30, 2021 in the 'Elisabeta Doamna' Psychiatriy Hospital in Galati. The inclusion criteria were: county, gender, age, date of presentation, time of presentation, environment of origin, disorders related to alcohol consumption (F10.0-F10.9). All patients with psychiatric diagnoses who did not have alcohol-related disorders were excluded. The data was processed statistically using Microsoft Office-Excel, SOFA - Statistics Open For All version 1.5.4.*

Between January and March 2019 there were 671 presentations due to alcohol-related disorders, of which 222 (33.1%) patients from rural areas and 449 (66.9%) from urban areas, compared to the period January-March 2021, when the total number of presentations due to alcohol-related disorders was 660, of which 204 (31%) patients were from rural areas, and 456 (69%) came from urban areas.

Keywords: *alcohol, Covid-19, pandemic, psychiatry.*

How to cite: Nicoară, I.I., Terpan, M., Vlad, C., Bichescu, C.I., & Ciubară, A. (2022). Ethanol Dependence in the Context of the Covid-19 Pandemic. Comparative Study between January-March 2019-2021. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience, 13*(1Sup1), 124-134. https://doi.org/10.18662/brain/13.1Sup1/308

Introduction

In Romania, alcohol is the most used substance of abuse and also the most culturally acceptable, the abusive consumption of ethanol by individuals has a significant role in increasing the number of presentations in psychiatric services (Luca et al., 2020).

Alcohol consumption is associated with multiple conditions and generates a vulnerable organic substrate for SARS-CoV-2 infection. It can also cause exacerbations of mental illness and predispose to behaviours with an increased risk of violence (Grigoras & Ciubara, 2021; NIAAA, 2017; Sadock et al 2017).

Globally, nearly 3 million premature deaths from alcohol abuse occur each year (WHO, 2018).

Ethanolic addiction and all disorders derived from this pathology (ethanolic withdrawal, acute intoxication, violence associated with alcohol consumption, vagrancy) are among the most common cases in the emergency room of a psychiatric hospital (Ciubara et al., 2018; Ciubara et al., 2015).

Pathophysiology

Alcohol amplifies inhibition at the level of GABA synapses and reduces arousal at the level of glutamatergic synapses, initially resulting in states of relaxation, euphoria, behavioral disinhibition (Stahl, 2013).

The effects of alcohol consumption are directly proportional to the amount of alcohol ingested, so that after a certain amount may appear slurred speech, impaired motor coordination, unstable gait, nystagmus, attention and memory deficits, stupor or coma (Rehm et al., 2010; Sadock et al., 2017).

Impulsive traits and a dysfunctional reward system can give a tendency to ethanol consumption and abuse (Sadock et al., 2017).

In these individuals, impulsive consumption can lead to the activation of the habit formation system, triggering neuroplasticity in the compulsive circuit (Sadock et al., 2017).

According to the Diagnostic and Statistical Manual of Mental Disorder 5 th ed., (APA, 2013) and to the International Statistical Classification of Diseases and Related Health Problems (WHO, 1993) the main criteria for substance use disorders is a set of cognitive symptoms, behavioral and physiological evidence that the individual continues to consume the substance, despite significant problems caused by it.

The COVID-19 pandemic is a challenge for everyone. Uncertainty, drastic change in lifestyle, declining income, limiting social interaction are factors that significantly affect any mentally balanced individual. When these events co-occur in a patient who is known by a psychiatric pathology, the effects are exacerbated.

Objective

The objective of this paper is to establish a comparison in the dynamics of the presentation of chronic alcohol users during the COVID-19 pandemic, compared to the period before the pandemic, in order to see if there are changes generated by the current medical and social context.

Method

The retrospective study consists in comparing the group of patients presented between January 1, 2019 and March 30, 2019 with the group of patients presented between January 1, 2021 and March 30, 2021 in the Psychiatric Hospital 'Elisabeta Doamna' in Galati.

For the diagnosis of psychiatric disorders, ICD-10-Classification of mental and behavioral disorders, DSM-5 Diagnostic Manual and Statistical Classification of Mental Disorders were used for the diagnosis of psychiatric disorders.
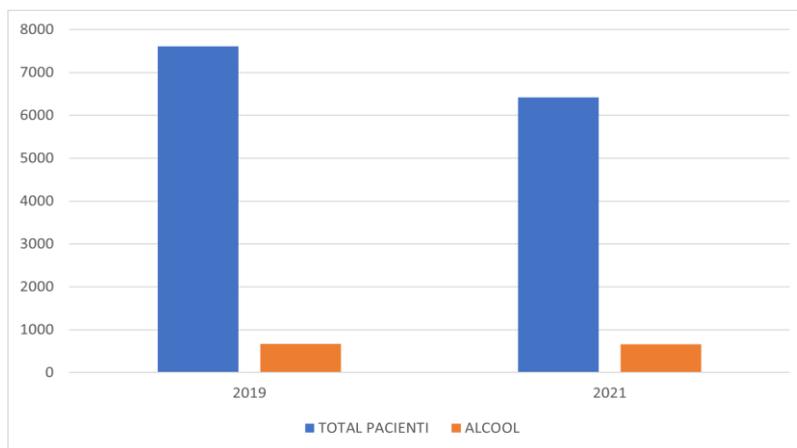
The inclusion criteria were: county, gender, age, date of presentation, time of presentation, environment of origin, disorders related to alcohol consumption (F10.0-F10.9) (WHO, 1993).

All patients with psychiatric diagnoses who did not have alcohol-related disorders were excluded.

The data were statistically processed using:
• Microsoft Office-Excel
• SOFA-Statistic Open For All version 1.5.4 (Paton-Simpson & Associates Ltd., 2009-2021).
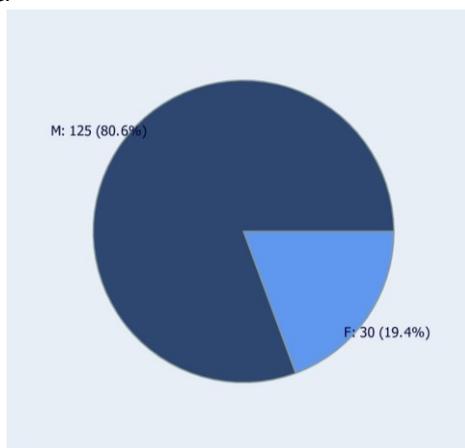
Results

Figure 1. Total number of presentations compared to the number of presentations related to alcohol consumption in the years 2019-2021.
Source: Authors' own conception

The percentage increase of ethanol consuming patients in 2021 compared to 2019 may be due to the use of alcohol as a coping and stress release mechanism.

Given the analyzed period, a period that coincides with multiple religious holidays in which alcohol consumption is used in socializing relationships, we would have expected a decrease in consumption in 2021, taking into account the adoption of social restrictions during the pandemic, the trend is upward.

Figure 2. Number of presentations related to alcohol consumption, comparison by gender, January 2019
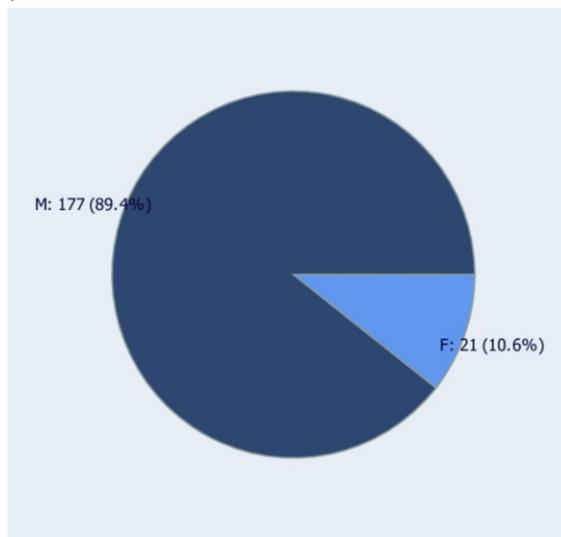Source: Authors' own conception

Figure 3. Number of presentations related to alcohol consumption, comparison by gender, January 2021
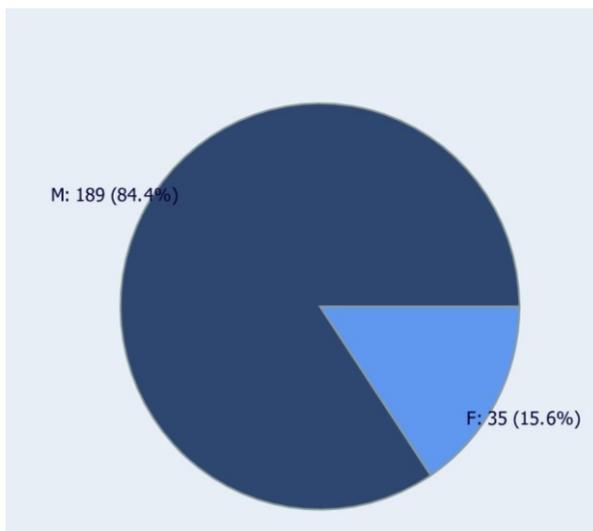Source: Authors' own conception

January shows us an increase in the number of male persons in 2021, 179 (87.3%) compared to 2019 when there were 125 (80.6%). Analyzing female presentations we see a reverse trend, in 2019, 30 (19.4 %) compared to 26 (12.7%) 2021.

Figure 4. Number of presentations related to alcohol consumption, gender comparison, February 2019
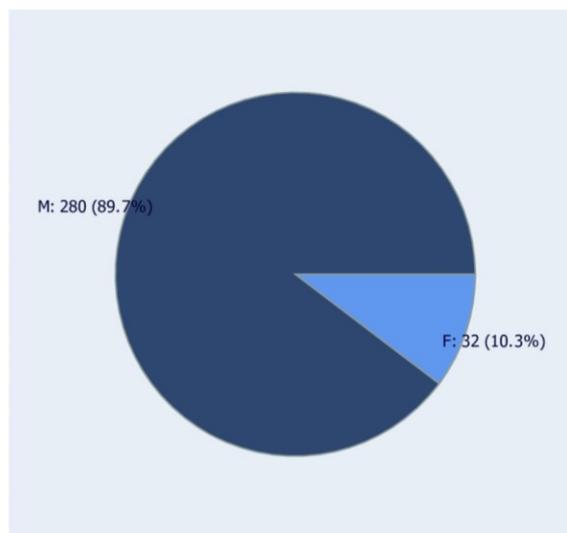Source: Authors' own conception

Figure 5. Number of presentations related to alcohol consumption comparison by gender, February 2021
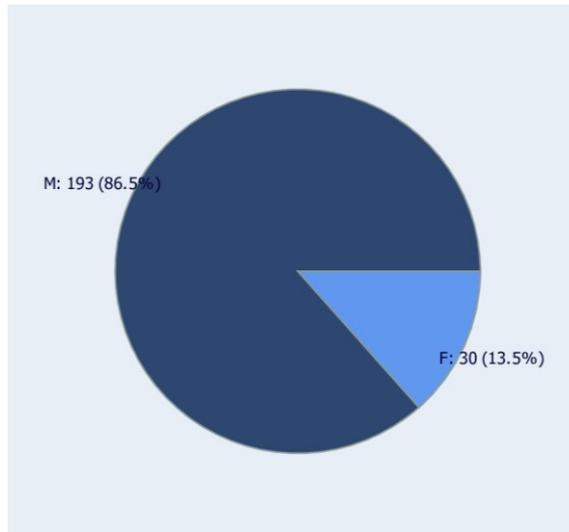Source: Authors' own conception

From the analysis of the data, in February we see an increasing trend among women: 10.6% in February 2019, compared to 15.6% in February 2021.This is at odds with the results in January.

Figure 6. Number of presentations related to alcohol consumption, gender comparison, March 2019
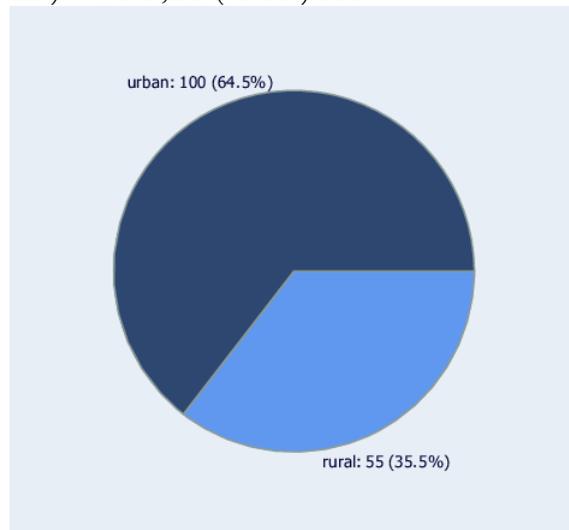Source: Authors' own conception

Figure 7. Number of presentations related to alcohol consumption, gender comparison, March 2021
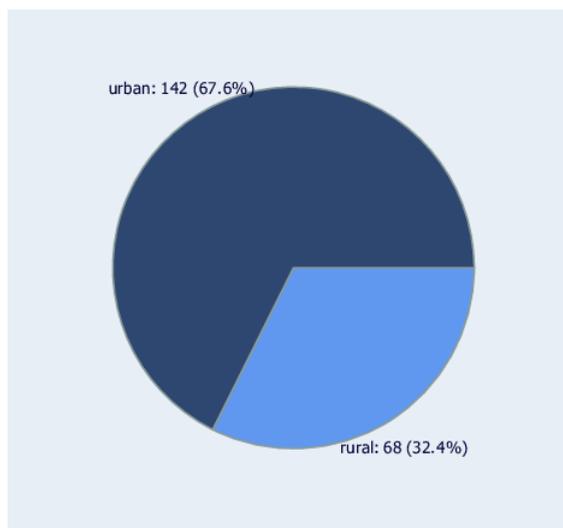
Source: Authors' own conception

March 2019 is the month with the most patients with alcohol-related disorders, the male gender being prominent with 280 cases. The same trend can be observed in 2021.

As a percentage, there is a tendency to stabilize consumption among females, 32 (10.3%) in 2019, 30 (13.5%) 2021.
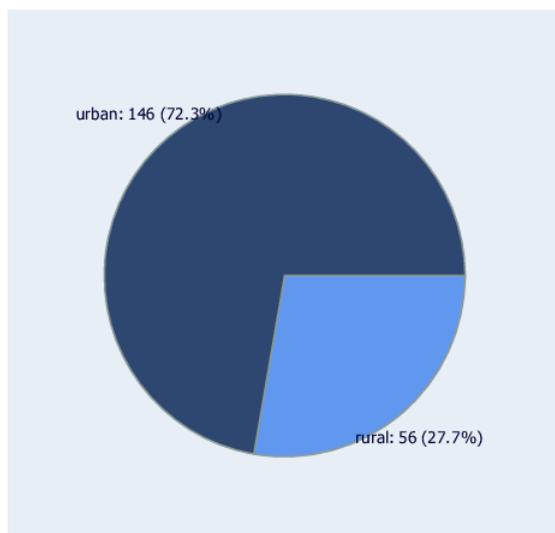

Figure 8. Number of presentations related to alcohol consumption, comparison by environment, January 2019
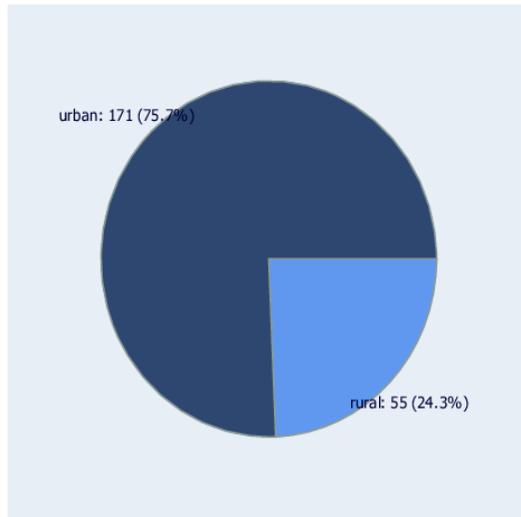
Source: Authors' own conception

Figure 9. Number of presentations related to alcohol consumption, comparison by
environmental conditions determined by place of residence, January 2021
Source: Authors' own conception

In January we can see a steady trend in the ratio between rural and
urban areas, 100 (64.5%) in urban 2019 and 55 (35.5%) in rural 2019,
respectively 142 (67, 6%) urban 2021 and 68 (32.4%) rural 2021.
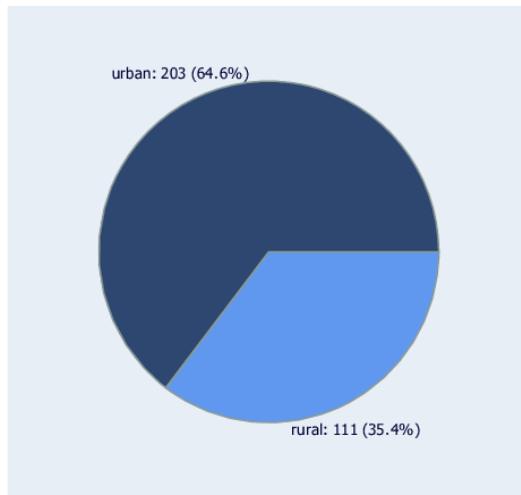

Figure 10. Number of presentations related to alcohol consumption, comparison
according to environment, February 2019
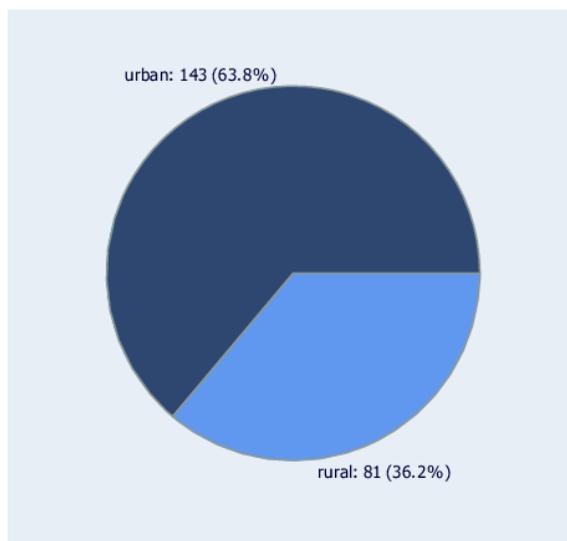Source: Authors' own conception

Figure 11. Number of presentations related to alcohol consumption, comparison
by environment, February 2021
Source: Authors' own conception

In February we notice an increase in the number of presentations in urban areas compared to rural areas, so in 2019 there were 146 (72.3%) presentations in urban areas and 56 (27.7%) presentations in rural areas, and in 2021 there were 171 (75.7%) presentations in urban areas and 55 (24.3%) in rural areas.

Figure 12. Number of presentations related to alcohol consumption, comparison
by environment, March 2019
Source: Authors' own conception

Figure 13. Number of presentations related to alcohol consumption, comparison
by environment, March 2021
Source: Authors' own conception

In March we see a significant decrease from 203 cases in urban areas 2019 to 143 cases in urban areas 2021.A significant decrease is also reflected among presentations in rural areas, from 111 (35.4%) in 2019 at 81 (36.2%) 2021.

Conclusions

In 2021, despite the restrictions, alcohol-related disorders had an increased impact among men with no significant trend among women. The environmental distribution reflects the influence of restrictions adopted in urban areas, with a significant increase in the month of March.

Theoretically, given the restrictions imposed by the authorities during the COVID-19 pandemic, anxiety related to social contact, low incomes, we would have expected a significant reduction in cases of patients with alcohol-related disorders, in a much higher percentage than observed.

We thus conclude that, in the context of an addiction, people find resources and prioritize the maintenance of vice, despite material shortcomings, social restrictions and the harmful consequences due to chronic ethanol consumption.

References

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington, DC. https://doi.org/10.1176/appi.books.9780890425596

Ciubara, A. M., Burlea, S. L., Sacuiu, I., Radu, D. A., Untu, I., & Chirita, R. (2015). Alcohol addiction - a psychosocial perspective. *Procedia Social and Behavioral Sciences, 187*, 536-540. https://doi.org/10.1016/j.sbspro.2015.03.100

Ciubara, A. B., Tudor, R. C., Nechita, L., Tita, O., Ciubara, A. M., Turliuc, S., & Raftu, G. (2018). The Composition of Bioactive Compounds in Wine and Their Possible Influence on Osteoporosis and on Bone Consolidation. *Revista de Chimie, 69*(5), 1247-1253. https://doi.org/10.37358/RC.18.5.6300

Grigoras, M., & Ciubara, A. (2021). Looking into Pandora's Box between "Everything" and "But" -Depression, Pain of Losses the Next Pandemic of Humanity? *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, *12*(2), 326-334. https://doi.org/10.18662/brain/12.2/210

Luca, L., Ciubară, A. B., Fulga, I., Burlea, S. L., Terpan, M., & Ciubără, A. M. (2020). Social Implications for Psychiatric Pathology of Depressive and Anxiety Disorders, Alcohol Addiction and Psychotic Disorders during the COVID-19 Pandemic in Romania. Analysis of two Relevant Psychiatry Hospitals. *Revista De Cercetare Si Interventie Sociala, 69*, 261-272. https://doi.org/10.33788/rcis.69.16

Paton-Simpson & Associates Ltd. *Statistics were performed using SOFA Statistics version 1.5.4.* Statistics Open for All. https://www.sofastatistics.com/home.php

Rehm, J., Baliunas, D., Borges, G. L., Graham, K., Irving, H., Kehoe, T., Parry, C. D., Patra, J., Popova, S., Poznyak, V., Roerecke, M., Room, R., Samokhvalov, A. V., & Taylor, B. (2010). The relation between different dimensions of alcohol consumption and burden of disease: an overview. *Addiction*, *105*(5), 817–843. https://doi.org/10.1111/j.1360-0443.2010.02899.x

Sadock, B. J., Sadock, V. A., Ruiz, P., & Kaplan, H. I. (2017). *Kaplan and Sadock's comprehensive textbook of psychiatry* (10th ed.). Wolters Kluwer.

Stahl, S. M. (2013). *Stahl's essential psychopharmacology: Neuroscientific basis and practical applications* (4th ed.). Cambridge University Press.

World Health Organization. (n.d.). http://www.who.int/news-room/fact-sheets/detail/alcohol

World Health Organization. (2014). *Global Status Report on Alcohol and Health*. World Health Organization.

World Health Organization. (1993). *The ICD-10 classification of mental and behavioural disorders*. World Health Organization.