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Comparative Study of Ethanol Intoxications in the Context of Covid-19 Pandemic Reported to the Year of 2019

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Abstract: *Excessive alcohol consumption that causes disorders of social conduct, causes a rejection reaction with the intervention of the authorities. The paper compares trends related to people with the diagnosis of acute intoxication (F10.0) admitted to the "Elisabeta Doamna" Psychiatry Hospital in Galati, from the 1st of January to the 31th of December 2020 with the period from the 1st of January to the 31th of December 2019. In the retrospective study we selected people discharged with acute intoxication, code (F10.0), and harmful use (F10.1), excluding all patients with other psychiatric diagnoses from the database of the "Elisabeta Doamna" Psychiatry Hospital from 2020 to 2019. ICD-10 (Classification of mental and behavioral disorders) was used for diagnosis of psychiatric disorders. The data was processed statistically using: Microsoft Office-Excel, The Jamovi Project (2021). jamovi (Version 1.6) [Computer Software]. In 2020 there were 39.58% fewer discharges by a total of (7973 cases) compared to (13197 cases) in 2019. In 2020, acute intoxication (F10.0) accounted for 7.41% of total discharges compared to a percentage of (8.27%) in 2019, showing a decline by a percentage of 45.92%. Comparing the years 2020 with 2019 by gender (of the total number of discharges with acute intoxication (F10.0), there is an increase in the percentage of discharges by 1.16% (from 86.98% in 2019 to 88.14% in 2020), while in the female gender, the percentage trend has decreased by a percentage of 1.16% (from 13.02% in 2019 to 11.86% in 2020).*

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

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1. Introduction

Alcohol consumption is considered an easy and accepted mechanism of socialization and relaxation (Ciubara et al., 2015). When the amount of alcohol ingested exceeds the body's metabolism capacity, the amount of alcohol that reaches the blood level increases causing a multitude of effects (Damian et al., 2019). At the cerebral level, excess alcohol causes behavioral disorders with impaired social behavior through aggression, disinhibiting behavior or coma (Ciubara et al., 2018). These changes shall be referred to the persons in the entourage or other persons close to them who refer the matter to the authorities for the resolution of the dissocial conduct (Tabian et al., 2021). The authorities represented by the ambulance, Emergency Reception Unit and the police, handle persons in case of violent manifestations to the psychiatric sector to determine the impact of alcohol consumption and the remission over time of alcohol-related disorders. The pandemic and restrictive measures have changed society's behavior (Luca, Baroiu et al., 2020; Sandu, 2020a; 2020b; 2020c Sandu & Nistor 2020; Sandu et al., 2020). In addition to changes in social behavior, changes in psychiatric pathology were also identified (Luca, Ciubara et al., 2020).

2. Research methodology

Present work compares admissions to the "Elisabeta Doamna" Psychiatry Hospital in Galati, related to people with the diagnosis of acute intoxication (F10.0) and harmful use of alcohol (F10.1), in the period between the 1st of January and the 31th of December 2020 with the period between the 1st of January and the 31th of December 2019.

In the retrospective study we selected people discharged with acute intoxication code (F10.0) and harmful use of alcohol (F10.1), and excluded all patients with other psychiatric diagnoses from the database of the "Elisabeta Doamna" Psychiatry Hospital from the period between 2019 and 2020. ICD-10 (Classification of mental and behavioral disorders) was used for diagnosis of psychiatric disorders (World Health Organization. 2016).

The following items were used for statistical processing: the environment of provenance (urban, rural), gender (male, female), diagnostic criterion (F10.0, F10.1), day of the week (Monday –Sunday).

The data was processed statistically using: Microsoft Office-Excel, The jamovi project (2021). jamovi (Version 1.6) [Computer Software] and SOFA - Statistics Open for All version 1.5.4.

3. Discussions

The two diagnoses of acute ethanolic intoxication (F10.0) and harmful use of alcohol (F10.1) were chosen from alcohol-related disorders because they reflect the effects of acute abuse sufficient to associate disorders with the behaviors that cause a response from reactive societies (American Psychiatric Association, 2013). These two disorders are those in which excess alcohol ingested is associated with an oriented structure towards fulfilling desire as quickly as possible, and a reduced tolerance to it.

The research range was chosen to compare the dynamics of admissions between the pre-pandemic year 2019 and the year of the 2020 pandemic.

The beginning of government measures was between the 15th and the 16th of March 2020 by affecting the people's ability to leave their homes.

4. Research results

4.1. Gender distribution

Table.1 Gender distribution

Year	F			M		
	Freq	Col %	Row %	Freq	Col %	Row %
2019	235	65.3%	12.6%	1623	62.4%	87.4%
2020	125	34.7%	11.3%	978	37.6%	88.7%

Source: Authors' own conception

In 2019 the number of people admitted to the hospital with the two diagnoses was 1858 with a predominantly of male distribution 1623 (87.35%) and higher number of patients from urban environment 1256 (67.60%). In 2020, the number of persons admitted with the two diagnoses was 1103 with a predominantly male distribution 978 (88,67%) and urban environment 753 (68,27%).

Compared to 2019, there has been a decrease in admissions for the two diagnoses in 2020 of 40.64%, which can be attributed to the COVID-19 pandemic.

At the male level, there was a decrease in the absolute figures from 1623 in 2019 to 978 in 2020, a decrease of 39.74%. As a percentage, the share of the male gender increases from 87.35% in 2019 to 88.67% in 2020 by 1.32%, which showed an insignificant increase.

At the level of the female gender there was a decrease in absolute figures from 235 in 2019, to 125 cases in 2020, a decrease of 46.81%

higher than the decrease observed in male gender. In percentage terms, the share of the female gender decreases from 12.65% in 2019 to 11.33% by1.32%, which showed an insignificant decrease.

In conclusion, although in absolute figures we have a significant decrease in admissions in 2020 compared to 2019, the percentage distribution by gender remains almost identical.

4.2 Distribution by location of residence

Table. 2 Distribution by location of residence

Year	Rural			Urban		
	Freq	Col %	Row %	Freq	Col %	Row %
2019	602	63.2%	32.4%	1256	62.5%	67.6%
2020	350	36.8%	31.7%	753	37.5%	68.3%

Source: Authors' own conception

In 2020 there was a decrease in admissions for patients from urban areas in absolute figures compared to 2019, from 1256 patients to 753 patients in 2020 of 40.05%. As a percentage, there is an insignificant increase in 2020 (68.27%) compared to 2019 (67.60%).

In rural areas there is a decrease from 602 patients (year 2019) to 350 patients (year 2020), a decrease of 41.86%, which is similar to the decrease in urban areas. As a percentage, there is an insignificant decrease in 2020 (31.73%) compared to 2019 (32.40%).

In conclusion, although in absolute figures we have a significant decrease compared to 2019, the percentage distribution by average remains almost uninfluenced.

4.3 Distribution by Diagnosis and Gender

Table.3 Distribution by Diagnosis and Gender

Diagnosis	Year	F			M		
		Freq	Col %	Row %	Freq	Col %	Row %
F10.0	2019	142	67.0%	13.0%	949	64.6%	87.0%
	2020	70	33.0%	11.9%	520	35.4%	88.1%
F10.1	2019	93	62.8%	12.1%	674	59.5%	87.9%
	2020	55	37.2%	10.7%	458	40.5%	89.3%

Source: Authors' own conception

In 2019, the diagnosis of F10.0 represents 58.72% (1091) and F10.1 42.28% (767), compared to 2020 where the diagnosis of F10.0 represents 53.49% (590) and F10.1 46.51% (513).

For the diagnosis of F10.0 we have a decrease of 45.92% in absolute figures in the year 2020, but a decrease of only 5.23%. Male gender represents a percentage, in 2020 88.14% (520) a percentage increase compared to 2019 86.98% (949). The female gender represents a percentage of 11.86% (70) in 2020, down 13.02% (142).

For the diagnosis of F10.1 we have in 2020 a decrease of 33.12% in absolute figures from 767 in 2019 to 513 in 2020, but in percentage an increase of only 4,23%. The male gender represents a percentage of 89,28% (458) in 2020, a percentage increase compared to 2019 87,87% (674). The female gender represents a percentage, in 2020 10.72% (55) down in percentage compared to 2019 12.13% (93).

4.4 Distribution by Day of the Week and Diagnosis

Table 4. Distribution by Day of the Week and Diagnosis

Day of the Week	F10.0				F10.1			
	2019		2020		2019		2020	
	No.	Col %	No.	Col %	No.	Col %	No.	Col %
Monday	160	14.7%	116	19.7%	131	17.1%	78	15.2%
Tuesday	166	15.2%	80	13.6%	104	13.6%	62	12.1%
Wednesday	158	14.5%	83	14.1%	121	15.8%	83	16.2%
Thursday	126	11.5%	74	12.5%	106	13.8%	69	13.5%
Friday	145	13.3%	88	14.9%	122	15.9%	77	15.0%
Saturday	165	15.1%	79	13.4%	84	11.0%	77	15.0%
Sunday	171	15.7%	70	11.9%	99	12.9%	67	13.1%

Source: Authors' own conception

For the diagnosis of F10.0, in 2019, most admissions were on Sunday 171 (15.7%), followed by Tuesday 166 (15.2%) and the fewest admissions were on Thursday 126 (11.5%). In 2020 there is a change, with the most admissions on Monday 116 (19.7%) followed by Friday 88 (14.9%), and the lowest number of admissions we had was on Sunday 70 (11.9%).

It is noted that if in 2019 the differences between the days of the week were only 4.2%, in 2020 the differences between the days of the week were by 7.8%, a significant increase of 185.71%. There is a significant

change in the consumption pattern for acute intoxication (F10.0) with increased consumption on certain days for 2020.

For the diagnosis of F10.1, in 2019 most admissions were on Monday 131 (17,1%) followed by Friday 122(15.9%) and the lowest number of admissions on Saturday 84(11.0%). In 2020 we see a change, with the most admissions on Wednesday 83 (16.2%) followed by Monday 78 (15.2%), and the lowest number of admissions we have on Tuesday 62(12.1%).

It is noted that if in 2019 the differences between the days of the week are 6,1%. In 2020, the differences between the days of the week were by 4,1%, a significant decrease of 67,21%. There is a significant change in the pattern of consumption for the harmful use of alcohol (F10.1).

4.5 Distribution by Diagnosis and Environment

Table 5. Distribution by Diagnosis and Environment

Location	F10.0				F10.1			
	2019		2020		2019		2020	
	Freq	Col %	Freq	Col %	Freq	Col %	Freq	Col %
Rural	336	30.8%	191	32.4%	266	34.7%	159	31.0%
Urban	755	69.2%	399	67.6%	501	65.3%	354	69.0%

Source: Authors' own conception

In 2019, for the diagnosis of acute ethanolic intoxication (F10.0), 755 cases (69.2%) predominated for the diagnosis of acute ethanolic intoxication (F10.0) in the urban areas, In comparison to 336 patients (30.8%) in the rural areas.

In 2020, for the diagnosis of acute ethanolic intoxication (F10.0), urban areas also prevailed by 399 cases(67.6%). compared to rural areas which showed only 191 cases (32.4%).

As noted, for the diagnosis of (F10.0), despite the fact that in urban areas, there was a decrease in the number of cases by the year 2020 (from 755 in 2019 to 399 in 2020), the decrease in the overall percentage was less than 2% (from 69.2% in 2019 to 67.6% in 2020).

In 2019, for the diagnosis of harmful use (F10.1), the cases from the urban areas showed a number of 501 cases (65.3%), which was prodimenet in comparison to the number of cases from rural areas, which presented only 266 cases (34.7%).

In 2020, as well as for the diagnosis of harmful use (F10.1), the number of cases from urban areas predominated by a number of 354 cases (69.0%), in comparison to the number of cases from rural areas, which presented only 159 cases (31.0%).

As noted, for the diagnosis of (F10.1), despite the decrease in the number of cases from the urban areas in the year 2020 (from 501 in 2019 to 354 in 2020), the increase in the overall percentage was observed by more than 3% (from 65.3% in 2019 to 69.0% in 2020).

In conclusion, the same growth of hospital admissions is maintained in percentage terms, although in absolute figures we can observe a decrease of almost 50%.

4.6 Distribution by Month

Table.6 Distribution by Month

Luna	2019			2020		
	Freq	Col %	Row %	Freq	Col %	Row %
April	162	8.7%	74.3%	56	5.1%	25.7%
August	189	10.2%	71.6%	75	6.8%	28.4%
December	220	11.8%	71.9%	86	7.8%	28.1%
February	121	6.5%	47.8%	132	12.0%	52.2%
January	112	6.0%	41.2%	160	14.5%	58.8%
July	131	7.1%	65.2%	70	6.3%	34.8%
June	113	6.1%	60.4%	74	6.7%	39.6%
May	159	8.6%	69.7%	69	6.3%	30.3%
March	189	10.2%	57.6%	139	12.6%	42.4%
November	196	10.5%	71.3%	79	7.2%	28.7%
October	140	7.5%	59.6%	95	8.6%	40.4%
September	126	6.8%	64.9%	68	6.2%	35.1%

Source: Authors' own conception

In 2019, the months with the most hopsital admissions were: December by 220 cases (11.8%), November by 196 cases (10.5%), and equally, March and August by 189 cases (10.2%). In 2020, the months with the most hospital admissions were observed in: January by 160 cases(14.5%), March by 139 cases (12.6%), and February by 132 cases(12.0%). In 2020, we note that the months with the most hospital admissions were the pre-

pandemic months as opposed to 2019, when the months with the most admissions were the holiday months (December-November).

In 2019, the months with the fewest hospiatl admissions were January by 112 cases (6.0%), and June by 113 cases (6.1%), and February by 121 cases (6.5%).

In 2020, the months with the fewest hospital admissions were April by 56 cases (5.1%), September by 68 cases(6.2%), and May by 69 cases(6.3%). In 2020, we observe a correlation between the number of admissions and the onset of the pandemic, which changes the specific model of admissions of the year 2019.

5. Conclusions

In 2020, there were 39.58% less discharges (7973 cases) in total compared to 2019 (13197 cases). In 2020 acute intoxication (F10.0) accounted for 7.41% of total discharges compared to 2019 (8.27%), a percentage decrease of 45.92%. Comparing 2020 with 2019 by gender (of the total discharges with acute intoxication (F10.0), there is an increase in the percentage of discharges of 1.16% (from 86.98% in 2019 to 88.14% in 2020), while in the female gender the percentage trend is decreasing by 1.16% (from 13.02% in 2019 to 11.86% in 2020).

At the male level, there was a decrease in 2019 compared to 2020 by 39.74%. compared to the female gender where we had a decrease of 46.81%. In conclusion, although in absolute figures we had a significant decrease in admissions in 2020 compared to 2019, the percentage distribution by gender remains almost identical. The gender difference of about 7.07% shows a greater compliance of the female gender of the measures imposed by the pandemic, possibly due to the factor of higher anxiety levels in females.

In 2020 there was a decrease in urban admissions in absolute figures compared to 2019 of 40.05%, while in rural areas we had a decrease of 41.86%, the percentage distribution by gender remains almost uninfluenced. The pandemic also influenced the two environments without distinction.

For the diagnosis of (F10.0), we had in 2020 a percentage decrease of only 5.23% and for the diagnosis of (F10.1), we had in 2020 a percentage decrease of only 4.23%. In conclusion, the abusive consumption of alcohol as a percentage of total admissions is not significantly influenced by the pandemic.

There is a significant change in the consumption pattern for acute intoxication (F10.0), with increased consumption on certain days for 2020 and decreased on other days. For the harmful use of alcohol (F10.1) a tendency to flatten the pattern of consumption was observed.

In conclusion, the period of the pandemic has changed the level of admissions in absolute figures, but regarding percentages, it is observed the preservation of the habits.

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