

ANALYSIS OF HOSPITAL ADMISSIONS IN ROMANIA OF ALCOHOL CONSUMERS IN THE PERIOD 2023-2025

Mariana POSTOLACHE^{1,2}, MD

¹National Institute for Health Services Management

²Faculty of Dentistry, Carol Davila University of Medicine and Pharmacy, Bucharest

I. INTRODUCTION

Alcohol consumption is a major public health problem, with significant medical, social and economic implications. Studies show that economic, cultural and educational factors significantly influence consumption behavior. [1] The World Health Organization considers alcohol to be one of the main risk factors for premature mortality and disability. [2]

II. PURPOSE and OBJECTIVES

THE PURPOSE of this research is to analyze the evolution of hospitalizations associated with alcohol consumption in hospitals in Romania, depending on the age category and territorial distribution, for the diagnoses of acute intoxication, harmful use, dependence syndrome, withdrawal syndrome, in order to identify epidemiological trends and vulnerable population groups, during the period 2023–2025

OBJECTIVES

1. Analyzing the number of hospitalized patients with diagnoses due to alcohol consumption according to age groups.
2. Comparing the evolution of hospitalizations between the analyzed years, for each diagnosis studied.
3. Evaluating the territorial distribution of cases, at the level of counties in Romania.
4. Identifying the age groups with the highest risk of hospitalization, associated with alcohol consumption.
5. Highlighting epidemiological trends regarding problematic alcohol consumption and associated complications.

III. METHODOLOGY

A retrospective, descriptive study was conducted, based on the analysis of secondary data from the database of the National Institute for Health Services Management (INMSS). The study included patients admitted to hospitals in Romania during the period 2023–2025, identified by diagnostic codes from the RODRG classification, derived from ICD-10-AM, corresponding to conditions associated with alco-

INTRODUCTION. Alcohol consumption is a major public health problem worldwide, having a significant impact on the health status of the population and generating important consequences from a social and economic point of view. The specialized literature highlights the fact that consumption patterns are influenced by a complex interaction of economic, cultural and educational factors. In this context, the World Health Organization considers alcohol consumption one of the main risk factors for premature mortality and disability, emphasizing the need to implement effective prevention and control measures.

OBJECTIVE. To evaluate the epidemiological profile of hospitalizations associated with alcohol consumption in Romania, according to age, territorial distribution and temporal evolution.

MATERIALS AND METHODS. A retrospective, descriptive study was conducted, based on the analysis of secondary data from the database of the National Institute for Health Services Management (INMSS). All hospitalization cases registered in Romania during the period 2023–2025, with alcohol-related disorders as the main diagnosis, identified by the codes from the RO-DRG classification, derived from ICD-10-AM, were included. The following diagnostic categories were analyzed: acute alcohol intoxication, harmful use of alcohol, alcohol dependence syndrome and alcohol withdrawal syndrome. For each diagnostic category, the annual number of hospitalizations and the territorial distribution of cases at the level of counties in Romania were evaluated, in order to analyze temporal and geographical variations. The analysis was carried out on the following age groups: 1–11 years, 12–17 years, 18–20 years, 21–30 years, 31–40 years, 41–50 years and ≥50 years. The statistical analysis was descriptive and included the evaluation of their distribution according to the reporting year, age group and county of origin. The data were synthesized and presented in the form of tables and graphical representations to highlight the observed trends.

RESULTS. The analysis of alcohol-related hospitalizations during 2023–2025 revealed differences depending on the diagnostic category, age group and territorial distribution. Most hospitalizations were recorded in the age groups 21–30 years, 31–40 years, 41–50 years and over 50 years. During the analyzed period, a general trend of decreasing hospitalizations for acute intoxication, harmful use, dependence syndrome and alcohol withdrawal syndrome was observed, especially among adults. At the same time, cases were also identified in the pediatric and adolescent age groups, with variations in territorial distribution between counties in Romania.

CONCLUSION. Alcohol consumption continues to represent an important cause of hospitalization in Romania, affecting mainly the adult population, but also being present among adolescents. Although a general trend of reduction in the number of hospitalizations for the main diagnoses associated with alcohol consumption was observed during the period 2023–2025, the persistence of cases and territorial variations highlight the need to strengthen prevention, early detection and intervention measures, adapted to age groups and regional particularities.

Keywords: alcohol, hospitalizations, public health

hol consumption. The following diagnostic categories due to alcohol consumption were analyzed separately:

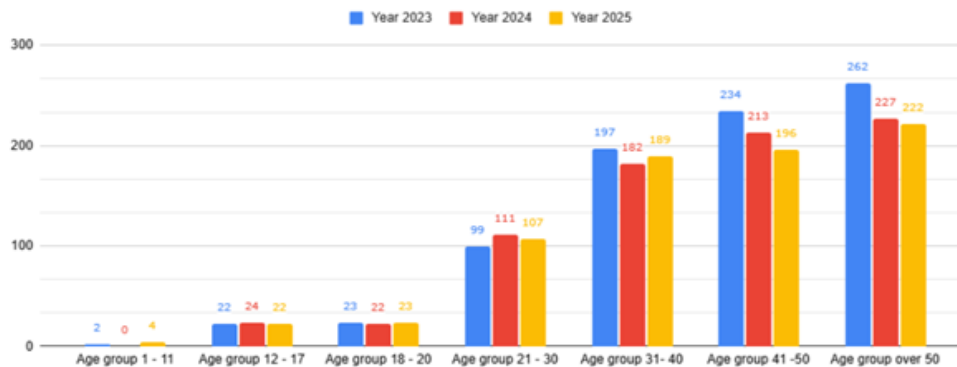
- acute intoxication,
- harmful use,
- dependence syndrome,
- withdrawal syndrome.

For each category, the annual evolution of the number of hospitalized patients and the county distribution of reported cases were evaluated, in order to highlight temporal trends.

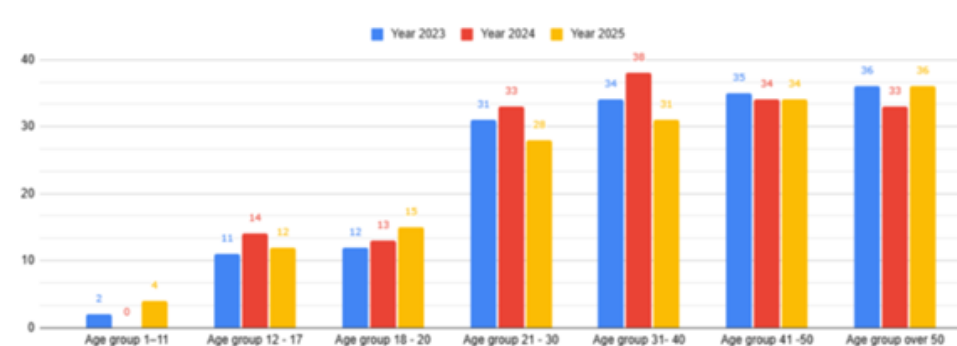
The data were analyzed for the following age groups:

- 1–11 years,
- 12–17 years,

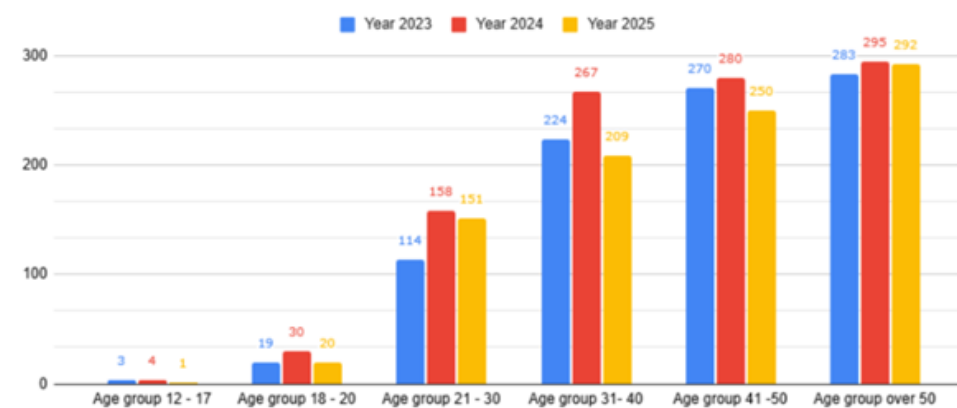
Graph 1. Trends in the number of patients hospitalized with the diagnosis of acute poisoning



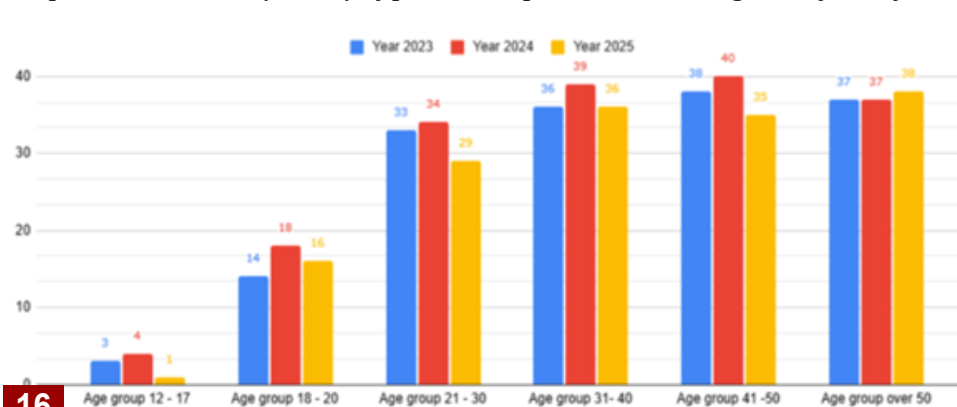
Graph 2. Distribution by county of patients hospitalized with the diagnosis of acute poisoning



Graph 3. Trends in the number of patients hospitalized with a diagnosis of harmful use



Graph 4. Distribution by county of patients hospitalized with a diagnosis of harmful use



- 18–20 years,
- 21–30 years,
- 31–40 years,
- 41–50 years,
- over 50 years,

to identify the most affected population categories.

The descriptive analysis included the assessment of the frequency of hospitalizations, the distribution of cases by counties and their annual dynamics, for each type of diagnosis analyzed.

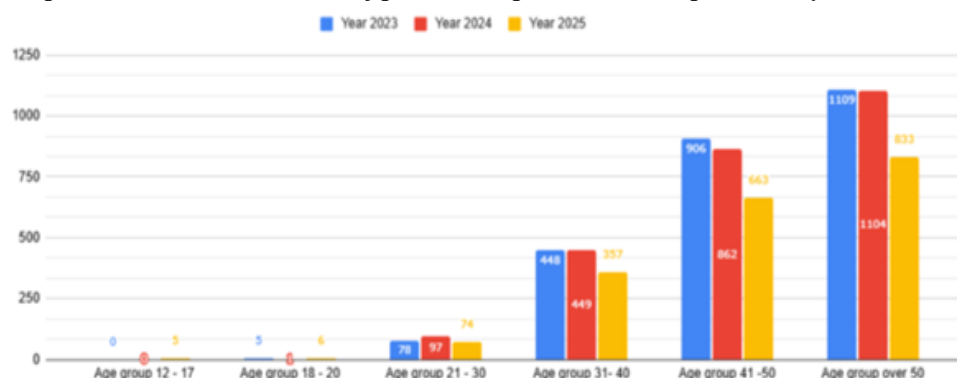
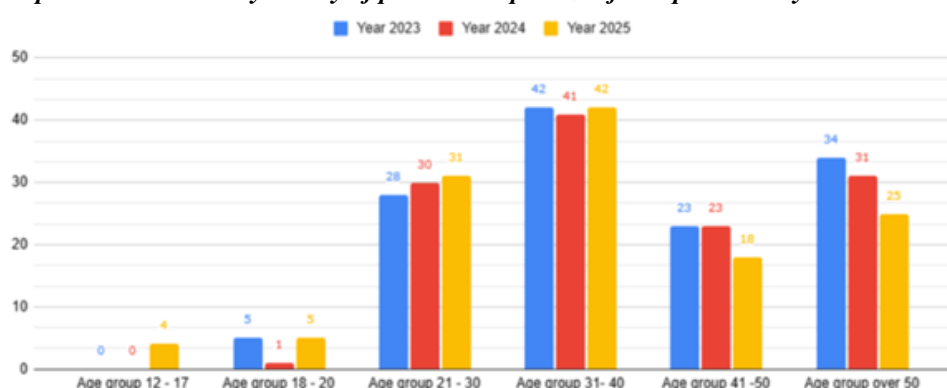
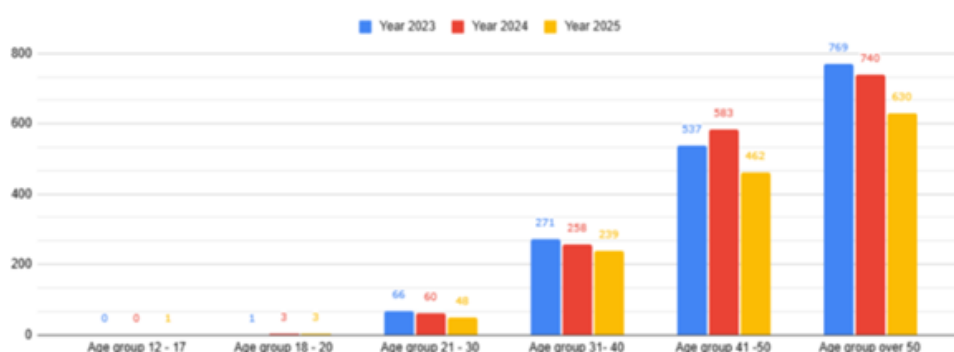
The results obtained allowed highlighting the impact of alcohol consumption on hospital services in Romania, as well as identifying county variations and age groups at increased risk for the different clinical forms due to alcohol consumption by hospitalized patients.

IV. RESULTS

The analyzed data highlight significant differences between the counties and age groups studied and indicate that the highest share of hospitalizations associated with alcohol consumption was recorded in the age groups 21-30 years, 31-40 years, 41-50 years, over 50 years, but were also identified in the pediatric and adolescent age groups.

In the diagnosis of acute intoxication, the number of patients admitted to hospitals in Romania in 2025 decreased in the 31-40 years, 41-50 years, and over 50 years groups compared to 2023. For the 12-17 and 18-20 years age groups, the number of hospitalized patients remained at the same value for 2023 and 2025, increasing in 2025 in the 21-30 years age group and in the 1-11 years age group compared to 2023. (Graph 1)

In the distribution by counties for the diagnosis of acute intoxication, it is observed that out of a total of 42 counties in Romania, in the age groups 21-30 years, 31-40 years, 41-50 years, the number of counties decreased in 2025 compared to 2023 from 31 to 28, from 34 to 31, from 35 to 34. The same value of 36 counties was maintained for the age group over 50 years. For

Graph 5. Trends in the number of patients hospitalized with dependence syndrome**Graph 6. Distribution by county of patients hospitalized for dependence syndrome****Graph 7. Trends in the number of patients hospitalized with withdrawal syndrome**

the age groups 1-11 years, 12-17 years and 18-20 years, the number of counties in which patients were hospitalized increased from 2 to 4, 11 to 12, respectively from 12 to 15 counties. (Graph 2)

In the diagnosis of harmful use, the number of patients admitted to hospitals in Romania in 2025 decreased in the age groups 12-17 years, 18-20 years, 21-30 years, 31-40 years, 41-50 years, over 50 years compared to 2024 from 4 to 1, 30 to 20, 158 to 151, 267 to 209, 280 to 250 and 295 to 292 patients. No admissions were identified in the age group 1-11 years, during the period 2023-2025 (Graph 3)

For the distribution by counties regarding the diagnosis of harmful use, it is observed that in the age groups 12-17 years, 18-20 years, 21-30 years, 31-40 years, 41-50 years, the number of counties decreased in 2025 compared to

2024 from 4 to 1, 18 to 16, 34 to 29, 39 to 36, 40 to 35 counties. For the age group over 50 years, the number of counties increased from 37 in 2024 to 38 in 2025. In the age group 1-11 years, during the period 2023-2025, no attempts were identified in the counties of Romania. (Graph 4)

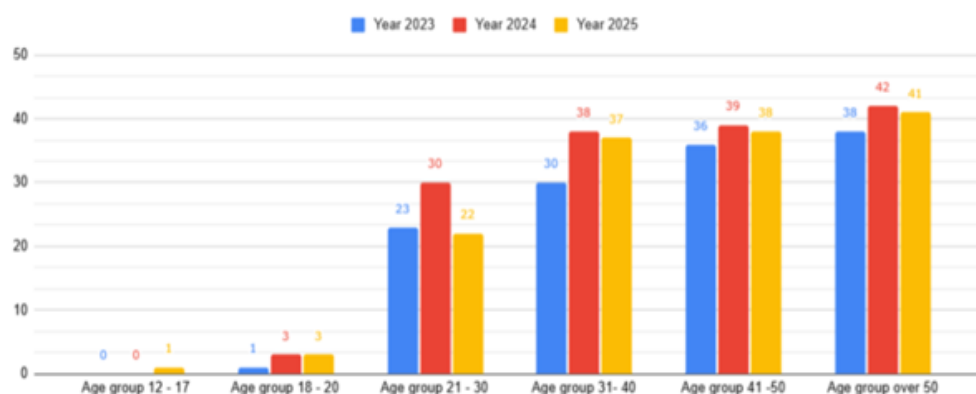
In the diagnosis of addiction syndrome, the number of patients admitted to hospitals in Romania, in 2023 compared to 2025 in the age groups 21-30 years, 31-40 years, 41-50 years, over 50 years, decreased from 78 to 74, 448 to 357, 906 to 663, 1109 to 833 patients. In the age group 12-17 years, 5 patients were admitted in 2025 compared to 2023 and 2024, years in which there were no admissions, and in the age group 18-20 years, the number of patients increased to 6 patients in 2025 from 5 patients in 2023. No admissions were identified in the age group 1-11 years, during the period 2023-2025 (Graph 5)

Regarding the distribution of the dependency syndrome by counties, in the 21-30 age group, the number of counties increased from 28 in 2023 to 31 in 2025, remained at 42 counties for the two years in the 31-40 age group and decreased in the 41-50 and over 50 age groups, from 23 to 18, respectively 34 to 25. For the 18-20 age group, the number of counties remained constant, at 5 counties both in 2025 and 2023. For the 1-11 age group, no patients were identified during the period 2023 - 2025, and for the 12-17 age group, patients were hospitalized in four

counties in 2025 compared to 2018. 2023, a year in which there were no hospitalizations with this diagnosis. (Graph 6)

In the diagnosis of withdrawal syndrome, the number of patients admitted to hospitals in Romania, in 2025 decreased in the age groups 21-30 years, 31-40 years, 41-50 years, over 50 years compared to 2023 from 66 to 48, 271 to 239, 537 to 462, 769 to 630 hospitalized patients. No hospitalizations were identified in the age group 1-11 years, during the period 2023-2025. In the age group 12-17 years, only in 2025 there was one hospitalization, and in the age group 18-20 years the number of hospitalizations increased in 2025 to 3 patients, while in 2023 only one patient was hospitalized with this diagnosis of withdrawal syndrome. (Graph 7)

Graph 8. Distribution by county of patients hospitalized with withdrawal syndrome



Regarding the diagnosis of withdrawal for distribution by counties, it is observed that in the age groups 18-20 years, 31-40 years, 41-50 years, over 50 years the number of counties increased in 2025 compared to 2023, from 1 to 3, 30 to 37, from 36 to 38 and from 38 to 41 counties. For the age group 21-30 years the number of counties was 23 in 2023 and 22 in 2025. For the age group 1-11 years, in the period 2023-2025 no counties were identified in which there were hospitalizations with this diagnosis, and for the age group 12-17 years only one county had hospitalization in 2025. (Graph 8)

V. DISCUSSIONS

The European Region has some of the highest levels of alcohol consumption worldwide, with significant differences between countries in alcohol consumption, driven by economic, cultural, social and political factors, according to data provided by WHO. The indicator used to assess consumption is total alcohol consumption per capita (people aged 15 years and over), expressed in litres of pure alcohol/year. Consumption patterns range from moderate consumption associated with social contexts to binge drinking, which is a major risk factor for accidents, chronic diseases and alcohol-related disorders. [3]

Romania is among the European countries with high levels of alcohol consumption. Available WHO data for Romania in 2024 indicate a total alcohol consumption of approximately 17 liters of pure alcohol per person (≥ 15 years/year), a value that highlights an increased exposure of the population to the risks associated with alcohol consumption. [4]

According to the analysis of hospital admissions of patients in Romania with the four diagnoses, during the period 2023 – 2025, we found the following:

Acute intoxication

The results of the study highlight changes in the distribution of acute intoxication cases due to alcohol consumption according to age and territorial distribution. Compared to 2023, in 2025 a decrease in the number of hospitalized patients was observed in the age groups 31–40 years, 41–50 years and over 50 years. This trend may suggest a reduction in excessive alcohol consumption among adults or an increase in the efficiency of prevention and

awareness measures addressed to these categories of the population. In contrast, maintaining the same number of hospitalizations in the age groups 12–17 years and 18–20 years indicates the persistence of alcohol consumption among adolescents and young people, despite information campaigns and regulations on minors' access to alcoholic beverages. The increase in the number of cases in the 21–30 age group may be associated with social and behavioral factors specific to this period of life, such as integration into the academic or professional environment, recreational activities and the influence of the group of affiliation.

A particularly important aspect is represented by the increase in the number of hospitalizations in the 1–11 age group. This evolution requires increased attention, as it may reflect accidental exposure to alcohol in the family environment, insufficient supervision of children or uncontrolled access to alcohol-containing products.

The analysis of the territorial distribution shows a reduction in the number of counties that reported hospitalizations for the 21–30, 31–40 and 41–50 age groups in 2025 compared to 2023. This trend suggests a decrease in the spread of the phenomenon in certain geographical areas. However, the increase in the number of counties that reported hospitalizations in the age groups 1–11 years, 12–17 years and 18–20 years indicates a territorial expansion of the phenomenon among children, adolescents and young people.

These results highlight the need to develop prevention programs adapted to each age category.

The increase in the number of cases and territorial distribution among young people emphasizes the importance of educational interventions in the family, school and community, as well as the strengthening of measures to control access to alcohol for minors.

Continuous monitoring of epidemiological trends is essential for identifying vulnerable groups and for implementing effective strategies to reduce the impact of alcohol consumption on public health.

Harmful use

The analysis of hospitalizations for the diagnosis of harmful use of alcohol highlights a general trend of decreasing the number of hospitalized patients in 2025 compared to 2024 for all investigated age groups.

The most important reductions were observed in the age groups 31–40 years and 41–50 years, where the number of hospitalizations decreased from 267 to 209 patients, respectively from 280 to 250 patients. Decreases were also recorded in the groups 12–17 years, 18–20 years, 21–30 years and over 50 years. This evolution indicates a decrease in the number of cases requiring hospitalization for harmful use of alcohol or a more pronounced

orientation towards medical and psychological services provided in outpatient settings. The results may also reflect the effects of prevention measures and health education implemented at the population level.

An important aspect of the study is the absence of hospitalizations in the age group 1–11 years during the entire analyzed period 2023–2025. This result suggests that the diagnosis of harmful use of alcohol was not identified among children in this age category, an aspect that can be explained by the clinical and diagnostic particularities of this condition, which is mainly associated with repeated consumption and its consequences on health.

The analysis of the territorial distribution also highlights a reduction in the number of counties that reported hospitalizations for the diagnosis of harmful use in most age groups. The decrease was observed in the groups 12–17 years, 18–20 years, 21–30 years, 31–40 years and 41–50 years, which may suggest a decrease in the territorial spread of the phenomenon. However, for the age group over 50 years, a slight increase in the number of counties reporting cases was observed, from 37 to 38, indicating that the problem of harmful use of alcohol continues to be present and widespread among the elderly.

The results obtained show that harmful use of alcohol affects especially the adult and elderly population, with the age groups 31–40 years, 41–50 years and over 50 years recording the most cases of hospitalization.

These findings are consistent with the specialized literature, which highlights the fact that the cumulative effects of problematic alcohol consumption become more evident with advancing age and can cause the emergence of medical complications, requiring hospitalization.

Overall, the decrease in the number of hospitalizations and the reduction in the territorial distribution of cases in 2025 represent a favorable evolution. However, the maintenance of a high number of cases in adult and elderly groups highlights the need to continue prevention, early detection and therapeutic intervention programs aimed at people with problematic alcohol consumption.

Addiction Syndrome

In the case of addiction syndrome diagnosis, the results indicate a general trend of decreasing hospitalizations during the period 2023–2025, especially among adults over 30 years of age.

The most significant reduction was observed in the 41–50 and over 50 age groups, which may suggest either a decrease in severe cases requiring hospitalization or an increased orientation towards outpatient and community treatment services. It is also possible that some patients will benefit from monitoring and treatment outside the hospital, reducing the need for hospitalization.

In the 31–40 age group, although there was a decrease in the number of hospitalizations, this remains one of the most affected categories. This suggests that addiction syndrome continues to represent an important health problem in the professionally active population, with possible significant socio-economic consequences.

The emergence of cases in adolescents in the 12–17 age group and the slight increase observed in the 18–20 age group may indicate an extension of problematic consumption to younger ages. Even if the absolute number of cases is low, these results have epidemiological relevance because early onset of alcohol consumption is associated with a higher risk of developing chronic dependence and subsequent complications.

The absence of hospitalization cases in children aged 1 to 11 years is consistent with the clinical characteristics of the dependence syndrome, this pathology being rarely encountered in this age category.

The analysis of the geographical distribution reveals an interesting phenomenon: for the 21–30 age group, the number of counties that reported hospitalizations increased, although the total number of patients decreased. This result may suggest a greater territorial dispersion of the phenomenon, with the appearance of cases in counties where previously no hospitalizations were reported, concomitantly with a reduction in the concentration of cases in certain areas.

For the 31–40 age group, the continued reporting of cases in all Romanian counties demonstrates the widespread nature of the addiction syndrome in this age group and confirms that the problem has a national distribution, not limited to certain regions.

The decrease in the number of counties reporting hospitalizations in the 41–50 and over 50 age groups may reflect a reduction in the incidence of severe cases, changes in the accessibility of hospitalization services, or differences in reporting and diagnostic practices between counties.

In the case of adolescents in the 12–17 age group, the reporting of cases in four counties in 2025 suggests the emergence of local outbreaks or an improvement in the capacity to identify and diagnose problematic consumption among young people. This result may indicate the need to strengthen prevention programs aimed at the school population and adolescents.

Taken together, the results highlight a reduction in hospitalizations for addiction syndrome in most adult age groups, concomitant with the emergence of cases in adolescents and changes in territorial distribution. These trends suggest possible changes in the epidemiological profile of addictions in Romania, and further investigations are needed to determine whether the reduction in hospitalizations reflects a real decrease in the severity of the phenomenon or changes in access to services and reporting practices. At the same time, the identification of cases at younger ages highlights the importance of early preventive interventions and continuous monitoring of alcohol consumption among adolescents.

Withdrawal Syndrome

The analysis of admissions for the diagnosis of withdrawal syndrome highlights a reduction in the number of hospitalized patients in 2025 compared to 2023 in all adult age groups.

Most cases were recorded in the age groups over 50 years and 41–50 years, but a decrease in

the number of admissions was also observed in these categories. This trend may suggest a decrease in severe cases requiring hospitalization or an improvement in the therapeutic management of patients with alcohol-related disorders.

The absence of admissions in the age group 1–11 years over the entire analyzed period is consistent with the clinical characteristics of withdrawal syndrome, which occurs after the cessation or reduction of prolonged and excessive alcohol consumption. In contrast, the identification of a case of hospitalization in the 12–17 age group in 2025 and the increase in the number of cases in the 18–20 age group are aspects that require attention, as they may indicate the emergence of problematic alcohol consumption and associated complications at younger and younger ages.

The analysis of the territorial distribution highlights a particular situation. Although the total number of hospitalized patients decreased in most age groups, the number of counties reporting cases increased for the 18–20, 31–40, 41–50 and over 50 age groups. This phenomenon suggests that the withdrawal syndrome is present in a larger number of counties, even if the total number of cases is lower. Thus, the phenomenon seems to be more territorially dispersed, without being concentrated exclusively in certain regions of the country.

For the age group 21–30 years, a slight decrease was observed in both the number of patients and the number of counties reporting hospitalizations, which may indicate a reduction in the impact of this diagnosis among young adults. In contrast, the increase in the number of counties in older age groups suggests the maintenance of a public health problem with a wide distribution at the national level.

The occurrence of cases in adolescents and the increase in the number of hospitalizations in young people between the ages of 18 and 20 highlight the need to implement prevention and early intervention measures.

The specialized literature shows that the onset of alcohol consumption at a young age increases the risk of developing addiction and associated complications, including withdrawal syndrome.

Overall, the results suggest a favorable evolution by reducing the total number of hospitalizations for withdrawal syndrome, but the expansion of the territorial distribution and the occurrence of cases at young ages indicate the need to maintain programs for the prevention, monitoring and treatment of alcohol-related disorders.

The data resulting from this analysis allow me to issue the following proposals for preventing alcohol consumption, for the age groups studied as follows:

Age group 1-11 years, 12-17 years — total prohibition, with the following measures:

Legislative measures

- Prohibition of alcohol advertisements on platforms used by minors (TikTok, Instagram, YouTube, etc.)

Medical measures

- Screening in family doctors' offices and school doctors

- Free psychological counseling for young people with early consumption, alcohol being a major risk of long-term addiction

Educational measures

- Dedicated hours with addiction specialists
- Social media campaigns
- Peer education programs — young people talking to young people .

Age group 18-20 years — strict limitation, with the following measures:

Legislative measures

- Prohibition of alcoholic beverages over 20 degrees, up to 20 years
- Prohibition of promotions aggressive (e.g. 1+1 free) in bars and shops
- Medical measures
- Counseling about combining alcohol with drugs or medication, about the risk of binge drinking, which is the main problem at this age

Educational measures

- Campaigns in universities and post-secondary schools
- Mobile applications for monitoring alcohol consumption
- Education about responsible drinking versus episodic excessive drinking

Age groups 21+ moderate limitation, awareness and monitoring, with the following measures: Legislative measures

- Progressive taxes on strong alcoholic beverages
- Prohibition of the sale of alcohol in gas stations — measure recommended by OECD experts
- Mandatory detailed labeling on products: calories, risks, drug interactions
- Prohibition of advertising, which associates alcohol with success, relaxation or health

Medical measures

- Periodic assessment of alcohol consumption by the family doctor
- Accessible detoxification programs
- Counseling on mental health
- Medical control mandatory if problematic consumption is detected
- Educational measures
- Campaigns about the impact of alcohol on fertility and pregnancy, about the myth: a glass of wine a day is healthy — FALSE
- Information at the workplace and in the social environment
- Materials accessible through family doctors

VI. CONCLUSIONS

The analysis highlights two simultaneous directions:

decrease in the number of hospitalizations for some of the diagnoses, in adults and the elderly;

- emergence or maintenance of cases in adolescents and young adults, which allow us to make the following findings:

1. The analysis of hospitalizations associated with alcohol consumption in Romania highlighted important differences between the four diagnoses investigated: acute intoxication, harmful use, dependence syndrome and withdrawal syndrome.
2. For the diagnosis of acute intoxication, a reduction in the number of hospitalized patients was observed in the adult and elderly age groups, but an increase in cases in the 1–11 and 21–30 year old groups. Also, the territorial distribution showed an expansion of the number of counties that reported cases in children, adolescents and young adults, suggesting the need to strengthen prevention measures addressed to these categories.
3. In the case of the diagnosis of harmful use, a general decrease in the number of hospitalizations and the number of counties affected was observed in most age groups. Most cases were registered in the adult and over 50 age groups, which highlights the long-term impact of problematic alcohol consumption on health.
4. For the dependence syndrome, a reduction in the total number of hospitalized patients was observed in the adult and elderly age groups, but cases appeared in adolescents aged 12-17 years and the number of cases increased in the 18-20 year group. These results indicate a possible earlier onset of problematic alcohol consumption and the development of addiction.
5. In the case of withdrawal syndrome, the number of hospitalizations registered a decreasing trend in most age groups, but the territorial distribution of cases expanded in many counties. This suggests that, although the severity of the phenomenon may be decreasing, the problem remains present at the national level.
6. For all four diagnoses, most hospitalizations were recorded in the adult and elderly age groups, especially in people over 40 years of age, which confirms the cumulative effects of chronic alcohol consumption on health.
7. The absence or very low number of cases in the age group 1–11 years for the diagnoses of harmful use, dependence syndrome and withdrawal syndrome indicates that these conditions are characteristic of repeated and long-term consumption. However, the increase in cases of acute intoxication in this age group is an alarming signal and requires prevention measures and family surveillance.
8. The results of the study highlight the need to continue and develop health education programs, alcohol prevention and early identification of people at risk, with particular emphasis on adolescents and young adults, in order to reduce the impact of alcohol consumption on the health of the population and the medical system.
9. The extent of the alcohol consumption phenomenon requires the implementation of unitary prevention and treatment strategies, as well as the need to develop public health policies at the national level.

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