

Analysis of Emergency Psychiatric Admissions in Pleven District for the Period 2021-2023

Aleksandar Todorov

¹Medical University - Pleven, "Kliment Ohridski" Str. 1, Pleven, Bulgaria

Email: [alex_9020\[at\]abv.bg](mailto:alex_9020[at]abv.bg)

Abstract: *Emergency psychiatry is a critical interdisciplinary field that addresses the urgent needs of individuals with mental health crises. This study examines emergency psychiatric admissions in Pleven District from 2021 to 2023, focusing on demographic trends, nosological distribution, and hospitalization patterns. Findings indicate a steady increase in hospitalizations, with schizophrenia and bipolar affective disorder as dominant diagnoses. The study highlights the significance of organized psychiatric care in addressing mental health crises and emphasizes its impact on national security.*

Keywords: demographic characteristics, emergency psychiatry, gender distribution

1. Introduction

Emergency psychiatry is an interdisciplinary field that not only overlaps the fields of emergency medicine and psychiatry. Emergency psychiatry is an interdisciplinary field that overlaps with emergency medicine and psychiatry. Psychiatric interventions address conditions such as attempted suicide, substance abuse, depression, psychosis, violence, or sudden behavioral changes. Emergency psychiatric patients are an extremely colourful cohort with diverse symptoms, which are extremely dynamic and with a difficult to predict outcome. The importance of emergency psychiatric conditions is great, due to the fact that they have not only an individual character, but also a huge social significance. The optimization of their management has great practical application and leads to significant scientific searches.

In recent decades, there has been an increase in emergency psychiatric conditions as a result of many and varied reasons – changes in lifestyle, the specifics of the health insurance system, attempts at deinstitutionalization, the lack of supply of resources for minimal functioning, and others. [36]

Pleven District is one of the 28 districts in the Republic of Bulgaria. With an area of 4653.32 km², a population of 220 346 (as of 31.12.2022) and a population density of 47.35 people/km², it ranks 9th in terms of area in the country. It borders with the districts of Vratsa, Vidin, Lovech and Veliko Tarnovo, and to the north there is a water border with Romania through the Danube River. In the classification of regions, it falls within the North-West region. There are 11 municipalities in Pleven district – Pleven, Cherven Bryag, Levski, Knezha, Belene, Nikopol, Gulyantsi, Dolni Dabnik, Dolna Mitropolia, Iskar and Pordim. The role of a regional hospital is taken by the University Hospital "Dr. Georgi Stranski" - Pleven. Emergency psychiatric care is provided through the Center for Emergency Medical Care (CEMC) - Pleven and the Multidisciplinary Emergency Department of the University Hospital. There are 3 psychiatric structures for inpatient psychiatric care in the district – the Psychiatric Complex of the University Hospital "Dr. Georgi Stranski" – Pleven, the Psychiatric Department at the Levski Hospital and the Psychiatric Department at the Belene Hospital. Until the

end of 2023, the last two did not carry out emergency admission of patients with psychiatric nosology. The municipality of Cherven Bryag, partly due to its proximity, uses the hospital of State Psychiatric Hospital-Karlukovo. All this leads to the concentration of more than 95% of the emergency psychiatric cases in the Psychiatric Complex of the University Hospital "Dr. Georgi Stranski" with two Psychiatric Clinics for around-the-clock in-patient care. The main flow of patients is directed directly to the complex, and if diagnostic clarification is needed, the patient first passes through a multidisciplinary emergency department.

Providing timely emergency psychiatric care is an important task not only for emergency care and psychiatry, but also for primary health care. Unfortunately, many of the unresolved problems in the work of GPs, one of which is the lack of communication training, are the basis for overloading the emergency care system and reducing its effectiveness in terms of the timely response to emergency psychiatric conditions.

This study aims to analyze demographic and diagnostic trends in emergency psychiatric admissions in Pleven District from 2021 to 2023 to inform future strategies for psychiatric care management.

2. Materials and Methods

We conducted a retrospective study in which we analyzed the emergency psychiatric admission for the district of Pleven for the period 01.01.2021-31.12.2023. Excluding a small part of the patients for the Cherven Bryag municipality, the rest of the emergency psychiatric patients (90-95% of them) are referred for hospitalization in the Psychiatric clinics of the University Hospital "D-r Georgi Stranski"- Pleven. The main source of data is the created and precisely maintained Register of Emergency Hospitalizations in Psychiatric Clinics. Patients are brought by the CEMC, law enforcement agencies or personal transport, and the condition is assessed as urgent by the psychiatrist on duty. An additional clarification is the fact that throughout 2021 and part of 2022, all our activities were under the sign of the COVID pandemic, which has a particular impact on the overall activities of the health service and especially on psychiatric structures.

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We subjected the results to standard statistical processing and graphically illustrated the results using highly specialized software.

3. Results

During the review period (January 1, 2021, to January 31, 2023), 793 individuals were hospitalized in an urgent order, respectively 200 for 2021, 275 for 2022 and 318 for 2023. The gender distribution shows 489 (62.8%) males and 304 (37.2%) females. Broken down by year – for 2021 – 132 (66.0%) men and 68 (34.0%) women, for 2022 – 167 (60.8%) men and 108 (39.3%) women, and for 2023 – 190 (59.8%) men and 128 (40.3%) women. Table 1 presents the gender distribution for the period under review.

Table 1: Gender distribution of hospitalized patients

	All hosp.	Men		Women	
	Count	count	%	count	%
2021	200	132	66,0%	68	34,0%
2022	275	167	60,7%	108	39,3%
2023	318	190	59,7%	128	40,3%
Total	793	489	61,7%	304	38,3%

The age range is from 14 to 85 for men and from 16 to 85 for women. The average age for the period under review is 42.79 for 2021, 41.91 for 2022 and 42.99 for 2023. The average age by sex is: 42.42, 40.78 and 42.17 for men and 43.49, 43.67 and 44.41 for women for 2021, 2022 and 2023.

In terms of nosology, schizophrenia unequivocally dominates, followed by bipolar affective disorder, mental and behavioural disorders as a result of the use of alcohol and/or psychoactive substances, organic damage and mental retardation.

Tables 2,3 and 4 and Fig. 1 show the absolute values and relative shares of patients with different nosological units. According to ICD-X we form the following nosologic groups:

- F0x.x – Organic, including symptomatic, mental disorders;
- F10.x – Mental and behavioural disorders due to alcohol use;
- F1x.x – Mental and behavioural disorders due to psychoactive substance use;
- F20.x – Schizophrenia;
- F2x.x – Schizotypal and delusional disorders;
- F31.x – Bipolar affective disorder;
- F33.x – Recurrent depressive disorder;
- F4x.x – Neurotic, stress-related and somatoform disorders;
- F6x.x – Disorders of adult personality and behaviour;
- F7x.x – Mental retardation.

Table 2: Distribution by diagnosis of hospitalized people in 2021

2021	Men		Women		Total	
	Count	%	Count	%	Count	%
F0x.x	14	10,61%	6	8,82%	20	10,00%
F10.x	15	11,36%	2	2,94%	17	8,50%
F1x.x	9	6,82%	0	0,00%	9	4,50%
F20.x	56	42,42%	47	69,12%	103	51,50%
F2x.x	13	9,85%	5	7,35%	18	9,00%
F31.x	10	7,58%	5	7,35%	15	7,50%

F33.x	0	0,00%	1	1,47%	1	0,50%
F4x.x	2	1,52%	1	1,47%	3	1,50%
F6x.x	10	7,58%	0	0,00%	10	5,00%
F7x.x	3	2,27%	1	1,47%	4	2,00%
Other	0	0,00%	0	0,00%	0	0,00%

Table 3: Distribution by diagnosis of hospitalized in 2022

2022	Men		Women		Total	
	Count	%	Count	%	Count	%
F0x.x	6	3,59%	8	7,41%	14	5,09%
F10.x	14	8,38%	4	3,70%	18	6,55%
F1x.x	8	4,79%	0	0,00%	8	2,91%
F20.x	88	52,69%	71	65,74%	159	57,82%
F2x.x	11	6,59%	7	6,48%	18	6,55%
F31.x	11	6,59%	11	10,19%	22	8,00%
F33.x	6	3,59%	1	0,93%	7	2,55%
F4x.x	1	0,60%	1	0,93%	2	0,73%
F6x.x	13	7,78%	1	0,93%	14	5,09%
F7x.x	9	5,39%	4	3,70%	13	4,73%
Other	0	0,00%	0	0,00%	0	0,00%

Table 4: Distribution by diagnosis of hospitalized in 2023

2023	Men		Women		Total	
	Count	%	Count	Count	Number	%
F0x.x	13	6,84%	9	7,03%	22	6,92%
F10.x	18	9,47%	8	6,25%	26	8,18%
F1x.x	10	5,26%	2	1,56%	12	3,77%
F20.x	80	42,11%	68	53,13%	148	46,54%
F2x.x	14	7,37%	10	7,81%	24	7,55%
F31.x	20	10,53%	14	10,94%	34	10,69%
F33.x	3	1,58%	3	2,34%	6	1,89%
F4x.x	2	1,05%	3	2,34%	5	1,57%
F6x.x	15	7,89%	3	2,34%	18	5,66%
F7x.x	12	6,32%	7	5,47%	19	5,97%
Other	3	1,58%	1	0,78%	4	1,26%

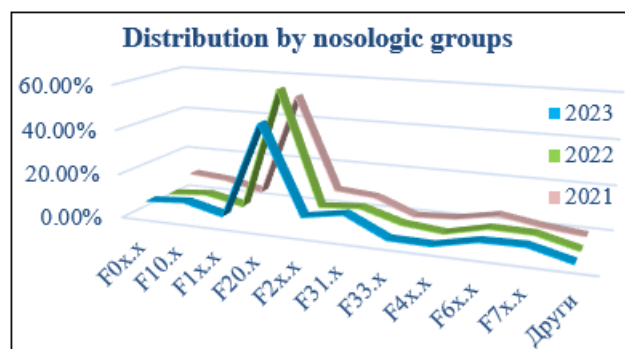


Figure 1: Distribution of hospitalized by nosological units for 2021-2023

Regarding the order of admission, it is found that for a quarter of patients this is the first hospitalization. By gender, the relative share is between a quarter and a third of all patients hospitalized in an emergency are in hospital for first time.

Table 5: Gender distribution of first-time hospitalized

	2021		2022		2023	
	Count	%	Count	%	Count	%
Men	40	30,30%	42	25,15%	47	24,74%
Women	18	26,47%	43	39,81%	33	30,56%
Total	58	29,00%	85	30,91%	80	25,16%

Data on the duration of admission show a wide distribution, with the highest share (about a third of all hospitalizations in emergency settings) occupied by hospitalizations for a period

between 31 and 60 days, followed by those lasting between 16 and 20 days (about 10%). Fig. 2 summarize data on the duration of stay in emergency psychiatric cases.

4. Discussion

From the very beginning, there is an increase in the total number of hospitalizations with 37 % for 2022 and 16% for 2023.

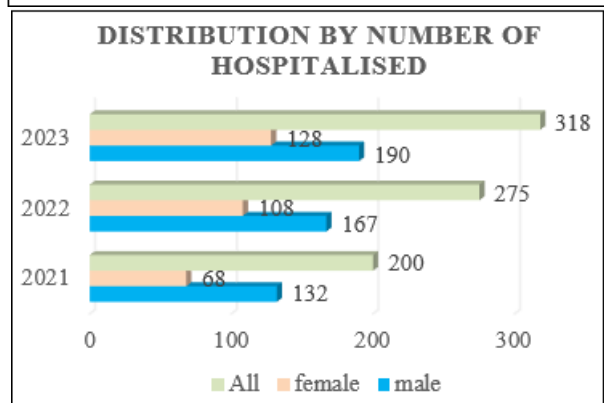
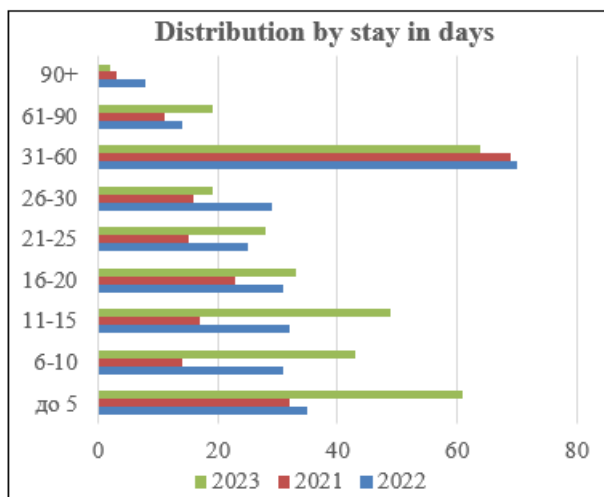


Figure 3: Distribution of the number of hospitalized by sex for the period 2021-2023

This can have many explanations, but the COVID-19 factor must also be included. The definitive answer to the question about the impact of the pandemic on the dynamics of emergency psychiatric admission will be given when analyzing the data from 2024 and comparing the results and their dynamics.

In terms of gender distribution, males dominate. This is completely deducible from the characteristics of the male sex as more dominant, with more manifestations of aggression and more difficult impulse control. Fig. 4 shows the dominance of the male sex in emergency psychiatric hospitalizations – almost twice as many men as compared to women.

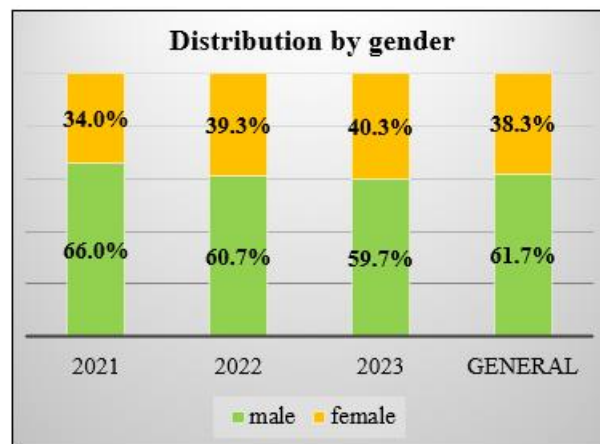


Figure 4: Gender distribution

In terms of nosological distribution, patients with psychiatric diagnoses with serious disability dominate to a significant extent – schizophrenia, followed by BAD and disorders related to alcohol use and psychoactive substances. On the other hand, patients with depressive and anxiety disorders have the lowest frequency of emergency admissions. The fact that persons with mental retardation are also represented is impressive. They are a specific cohort of patients in whom recovery cannot be expected, but only a reduction in impulsivity and some subordination. Fig. 5 shows the distribution by diagnosis for the period 2021-2023 of the patients hospitalized in an emergency.

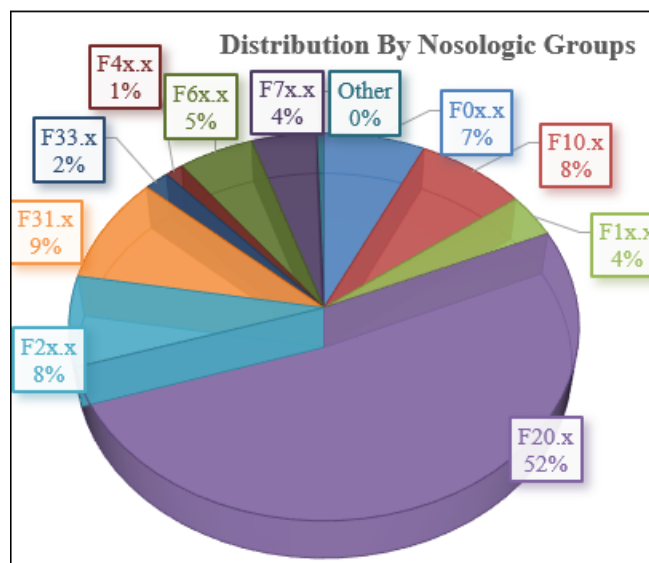


Figure 5: Distribution by diagnosis of emergency hospitalized patients

The length of stay is shown in Fig.6. There is a tendency towards a decrease in the average stay and an increase in the share of patients with a stay of 6-10 and 1-15 days at the expense of those with a stay of 16-20 days. The longer stay of 31-60 days takes decisive precedence, which correlates with the dependence that once the patient is admitted urgently, the severity of the symptoms is greater, and the therapeutic stabilization requires a longer time.

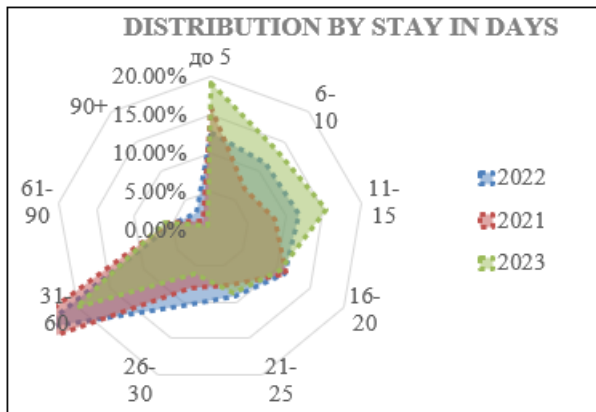


Figure 6: Breakdown by stay of emergency hospitalized patients

In about 30% of patients hospitalized in an emergency, this is the first hospitalization. This shows that the psychiatry clinics at the University Hospital "Dr. Georgi Stranski" have a high level of trust and are demanded in the diagnostic and therapeutic process as a place where highly qualified people work.

On the other hand, in the conditions of more optimized primary health care, some of these persons would be referred by a personal physician to a psychiatrist, where consultation with subsequent therapeutic influence, if necessary, monitoring and follow-up would take place. This is one of the possibilities to reduce the burden on the health system, especially that of emergency medical centers.

The findings underline the critical role of emergency psychiatric care in addressing public health challenges and improving healthcare delivery for vulnerable populations.

5. Conclusion

Emergency psychiatric care plays a vital role in addressing public health and national security challenges. This study's findings provide a strong foundation for optimizing psychiatric services in Pleven District and ensuring timely and effective care for vulnerable populations.

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Author Profile



Aleksandar Todorov received M.S. degrees in Medicine and Health management from Medical University – Pleven in 2015 and 2019. From 2015 till now is assistant in Psychiatry and Anatomy departments in Medical University – Pleven. On same time he works in Center for Emergency Medicine-Pleven. He has publication and scientific interests in the area of emergency psychiatry, neuroanatomy, telemedicine.