MEDICAL UNIVERSITY – PLEVEN
FACULTY OF PUBLIC HEALTH
DEPARTMENT OF PSYCHIATRY AND MEDICAL PSYCHOLOGY

ALEKSANDAR ANGELOV TODOROV, MD

TRAINING OF MEDICAL STAFF IN EMERGENCY MEDICINE STRUCTURE IN THE PLEVEN REGION FOR MANAGEMENT OF THE PSYCHIATRIC EMERGENCY PATIENT

ABSTRACT

OF A DISSERTATION FOR AWARDING THE EDUCATIONAL AND SCIENTIFIC DEGREE "PhD"

PhD PROGRAM: "PSYCHIATRY"
FIELD OF STUDY: 7.1 MEDICINE
AREA OF HIGHER EDUCATION: 7. HEALTHCARE AND SPORTS

SCIENTIFIC SUPERVISOR:
Assoc. Prof. Petranka Georgieva Chumpalova–Tumbeva, MD, PhD, MHM

PLEVEN
2025

The dissertation consists of 126 standard pages, including 15 tables, 34 figures, and 3 appendices.

The bibliography includes 283 references, 23 in Cyrillic and 260 in Latin script.

Appendices include:

1. SMART Questionnaire Card
2. Ethics Committee Approval from the Research Institute at MU-Pleven
3. Survey “A” from the conducted study

In connection with the dissertation, 3 full-text publications and 3 scientific communications at national forums were made.

The dissertation was approved and submitted for public defense by the extended Departmental Council of the Department of Psychiatry and Medical Psychology, Faculty of Public Health, Medical University – Pleven, held on 17.02.2025.

The official defense of the dissertation will take place on **30/06/2025 at 11.00 o'clock** in the **“Aleksandar Fleming” Hall (102) of Facuty of Pharmacy** – Medical University – Pleven, according to the Regulations on the Conditions and Procedures for Acquiring Scientific Degrees and Holding Academic Positions at Medical University – Pleven, and based on Rector's Order № 640/25.02.2025 г. before a scientific jury consisting of:

Chair: Prof. Mariela Stefanova Kamburova, MD, PhD, DSc, MHM
Members:

- Prof. Petar Marinov Marinov, MD, PhD, DSc
- Prof. Rinaldo Savov Shishkov, MD, PhD, DSc
- Assoc. Prof. Kiril Dimitrov Atliev, MD, PhD
- Assoc. Prof. Ivanka Ilieva Veleva, MD, PhD

Official reviewers:

- Prof. Petar Marinov Marinov, MD, PhD DSc
- Assoc. Prof. Ivanka Ilieva Veleva, MD, PhD

Defense materials are published on the MU-Pleven website:
http://www.mupleven.bg/index.php/bg/

TABLE OF CONTENTS

USED ABBREVIATIONS

In latin

Mean – Arithmetic Mean

Median – Median

Min/max – Minimum/Maximum Value

OR – Odds Ratio

p – Probability Value; Statistical Significance

RR – Relative Risk

1. INTRODUCTION

Emergency psychiatry is an interdisciplinary model that encompasses the vast, uncharted, and enigmatic field of psychiatry, along with the still-emerging horizons of emergency medicine. Despite the rich and diverse arsenal of medications and tools for managing psychomotor agitation or suicidal behavior, these remain challenging conditions to control, often evoking the worst enemies of emergency care—panic and fear.

What is particularly significant is the lack of adequate psychiatric care—according to WHO data, only 29% of patients with psychosis and just one-third of individuals with affective disorders have access to psychiatric assistance. This constitutes a serious precondition for the emergence of psychiatric emergencies that pose significant risks to the health and lives of both the patients and the community.

A psychiatric emergency is defined as an acute disturbance in a patient's behavior, thoughts, or mood which, if left untreated, may result in harm to the individual or others in their surroundings. Thus, the definition of a psychiatric emergency differs from other medical emergencies by also considering the risk posed to society.

Emergencies can be classified as major—when there is a threat to the life of the patient or those around them—or minor, when there is no life threat, but severe functional impairment occurs. Emergency units—Emergency Medical Centers and Emergency Departments at general hospitals—are staffed by physicians and paramedics/physician assistants who are in direct contact with patients categorized as “psychiatric emergencies.”

Physicians working in emergency departments often only have basic university training in psychiatry, which includes knowledge and skills related to psychiatric emergencies (this typically includes about 60 hours of psychiatry training).

Paramedics/physician assistants also possess a limited set of competencies for assessing and managing psychiatric emergency patients—in their primary education, only about 30 hours are allocated to psychiatry.

The specialization in “Emergency Medicine” for physicians includes just one week of thematic training on “Psychiatric Emergencies.”

All this raises serious doubts as to whether the training of emergency personnel in the country is adequate.

In our daily work, we encounter serious issues in the management of psychiatric emergencies. Categorizing a patient as “emergency” is often inaccurate. The social aspect

sometimes accumulates factors that are considered to justify emergency hospitalization, which do not always correlate with the clinical reality.

Proper preparation of emergency medical personnel requires training in accurate assessment and categorization when encountering individuals with psychiatric and behavioral symptoms.

2. AIM

To study and analyze the level of preparedness among doctors and healthcare professionals working in emergency departments in the Pleven region for the effective management of psychiatric emergency patients, and to enhance their theoretical knowledge and practical skills.

SCIENTIFIC HYPOTHESIS

Doctors and healthcare professionals working in emergency structures have insufficient theoretical and practical preparation for effectively managing psychiatric emergencies. This results in significantly increased pressure on psychiatric healthcare services.

Through targeted and focused training, competencies in managing psychiatric emergencies will be improved. This, in turn, will yield positive outcomes for psychiatric institutions by reducing pressure and unnecessary social hospitalizations.

3. OBJECTIVES

To achieve the objective, the following tasks were set:

I. Analyze emergency admission data from the Psychiatric Clinics of “Dr. Georgi Stranski” University Hospital – Pleven.
II. Identify leading profiles of psychiatric emergency patients.
III. Assess the current skills of medical professionals and physicians working in emergency departments in the Pleven region regarding evaluation and management of psychiatric emergency patients.
IV. Conduct training for these professionals on modern approaches to managing psychiatric emergencies.
V. Compare and analyze the impact of current training on improving the effectiveness of emergency psychiatric care.

4. MATERIALS AND METHODS

4.1. MATERIALS

To implement the defined tasks and test the research hypothesis:

1. A retrospective documentary study was conducted to analyze emergency admissions in the Pleven region between 01.01.2021 and 31.12.2023, outlining profiles of psychiatric emergency patients.
2. A scientific study was conducted to enhance theoretical knowledge and practical readiness among physicians and healthcare professionals working in emergency units in the Pleven region.

DESIGN OF STUDY

An open invitation for participation in psychiatric emergency training was issued, both in person (at the Emergency Medical Center - Pleven, emergency hospital departments, and urgent care units) and online via social platforms. The training lasted 6–8 academic hours and was voluntary.

Participants were informed of the voluntary nature of the training, anonymity of the results, and their right to withdraw at any time. The study was conducted in three stages:

1. Survey A:

Part A: General questions about work experience and qualifications of physicians and medical professionals.

Part B: Specific questions about identifying psychiatric emergencies, appropriate behavior and actions, and legal/forensic issues in managing psychiatric emergency patients.

2. Educational Seminar:

A theoretical and practical training seminar for emergency personnel on psychiatric emergency management.

3. Survey B:

Contained the same specific questions from Survey A to assess knowledge gained.

Survey questions are provided in Appendix 1.

The study was approved by the Ethics Committee, under Protocol/Decision № 813-KENID / 14.06.2024.

A total of 106 participants from Emergency Medical Center – Pleven and the emergency department of “Dr. Georgi Stranski” University Hospital – Pleven completed all three parts of the study, including physicians, paramedics/physician assistants, nurses/midwives, and paramedics.

4.2. METHODS

1. **Document Analysis:** Review of emergency hospitalizations at the only facility treating patients with mental and behavioral disorders under emergency conditions in the Pleven region. Data included personal details, clinical status upon admission, hospitalization duration, and post-discharge follow-up (when available).
2. **Survey Method:** To gather information on the current training levels of emergency personnel and evaluate educational outcomes.
3. **Educational Seminar:** Theoretical-practical training for emergency personnel.
4. **Data Processing:** Specialized statistical software packages were used:
    - **STATGRAPHICS**, **SPSS**, and **EXCEL for Windows**.
    - Online tools:
        - Georgiev G.Z., "Odds Ratio Calculator": https://www.gigacalculator.com
        - MedCalc Software Ltd.: https://www.medcalc.org

Statistical Methods Applied:

- Calculation of relative shares of qualitative indicators.
- Measures of central tendency: arithmetic mean, mode, median.
- Measures of dispersion: standard deviation (SD), confidence intervals (CI).
- Comparison of means and qualitative traits (t-test), with significance at $p < 0.05$.
- One-way ANOVA for uneven samples ($p < 0.05$ considered significant).
- Correlation analysis of qualitative alternative traits (phi coefficient), using a 5-point scale to assess strength.
- Odds Ratio (OR) for determining factor influence (OR > 1.0 indicates increased risk).
- Visualization of results with tables and charts.

5. RESULTS AND DISCUSSION

5.1. ANALYSIS OF EMERGENCY PSYCHIATRIC ADMISSIONS IN THE PLEVEN REGION FOR THE PERIOD 01.01.2021 – 31.12.2023

We conducted a retrospective study analyzing emergency psychiatric admissions in the Pleven region for the period 01.01.2021 – 31.12.2023.

Pleven is one of the 28 administrative regions in Bulgaria. With an area of 4,653.32 km², a population of 220,346 (as of 31.12.2022), and a population density of 47.35 people/km², it ranks 9th in size in the country. It borders the regions of Vratsa, Vidin, Lovech, and Veliko Tarnovo, and to the north it shares a river boundary with Romania along the Danube. It belongs to the Northwestern planning region. Pleven region includes 11 municipalities: Pleven, Cherven Bryag, Levski, Knezha, Belene, Nikopol, Gulyantsi, Dolni Dabnik, Dolna Mitropoliya, Iskar, and Pordim (Fig. 1). The main hospital for the region is the University Multiprofile Hospital for Active Treatment "Dr. Georgi Stranski" EAD, in Pleven. Emergency psychiatric care is provided through the Regional Center for Emergency Medical Aid – Pleven and the multidisciplinary emergency department of the university hospital. There are three inpatient psychiatric facilities: the Psychiatric Complex of UMHAT "Dr. Georgi Stranski" – Pleven, and psychiatric wards at the hospitals in Levski and Belene. By the end of 2023, the latter two no longer provided emergency psychiatric admissions. Cherven Bryag Municipality, due to its proximity, partially uses the hospital in DPB Karlukovo. This leads to over 95% of emergency psychiatric cases being concentrated at the Psychiatric Complex of UMHAT "Dr. Georgi Stranski", which has two 24-hour psychiatric clinics. Most patients are admitted directly to the inpatient facility, and when diagnostic clarification is needed, they first go through the multidisciplinary emergency department.

Figure 1. Administrative Structure of Pleven Region with Area and Population

Ensuring timely emergency psychiatric care is an important task not only for emergency services and psychiatry but also for primary healthcare. Unfortunately, many unresolved issues in the work of general practitioners—one of which is the lack of communication training—form the basis for overloading the emergency care system and reducing its effectiveness in responding promptly to psychiatric emergencies.

With the exception of some emergency psychiatric cases from the municipality of Cherven Bryag, the remaining emergency psychiatric patients (between 90–95%) are referred for hospitalization at the Psychiatric Clinics of the University Multiprofile Hospital for Active Treatment “Dr. Georgi Stranski” EAD, Pleven. The main data source is the precisely maintained Register of Emergency Hospitalizations in the Psychiatric Clinics. Patients are brought in by the Regional Center for Emergency Medical Aid (RCEMA), law enforcement authorities, or private transport, and their condition is assessed as urgent by the on-duty psychiatrist.

It is also important to note that during the entire year of 2021 and part of 2022, our operations were conducted under the constraints of the COVID-19 pandemic, which significantly impacted the overall functioning of the healthcare system, especially the psychiatric facilities.

5.1.1. DISTRIBUTION BY GENDER AND AGE

During the observed period (01.01.2021 – 31.01.2023), a total of 793 individuals were hospitalized on an emergency basis: 200 in 2021, 275 in 2022, and 318 in 2023. The gender distribution shows 489 (62.8%) men and 304 (37.2%) women. Broken down by year: in 2021 – 132 (66.0%) men and 68 (34.0%) women; in 2022 – 167 (60.8%) men and 108 (39.3%) women; and in 2023 – 190 (59.8%) men and 128 (40.3%) women. Table 1 presents the gender distribution for the analyzed period. A statistically significant predominance of male patients is observed (p = 0.001).

Table 1. Gender Distribution of Hospitalized Patients

	All	Men		Women	
	Number	Number	Proportion	Number	Proportion
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	6,7%	304	38,3%

The age range is from 14 to 85 years for men and from 16 to 85 years for women. The average age for the analyzed period was 42.79 years in 2021, 41.91 years in 2022, and 42.99 years in 2023. The average age by gender was: 42.42 years, 40.78 years, and 42.17 years for men, and 43.49 years, 43.67 years, and 44.41 years for women in 2021, 2022, and 2023, respectively. Figures 2, 3, and 4 illustrate the variation in age distribution and trends among emergency psychiatric hospitalizations in the Pleven Region. A significantly uneven distribution is observed, with a leftward skew indicating a predominance of younger age groups, which corresponds to the nature and typical progression of mental disorders.

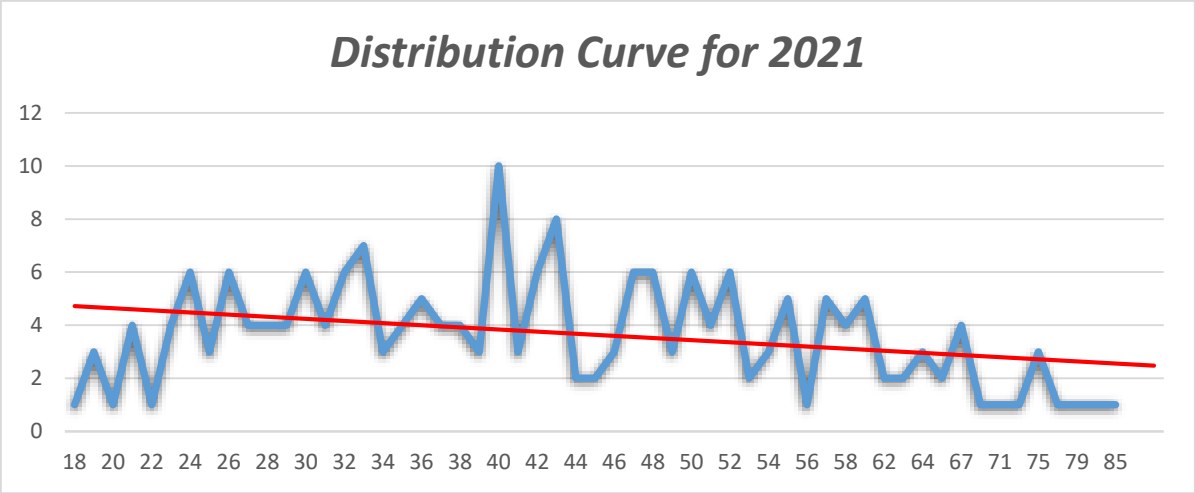

Figure 2. Age Distribution Curve with Variation Analysis for 2021

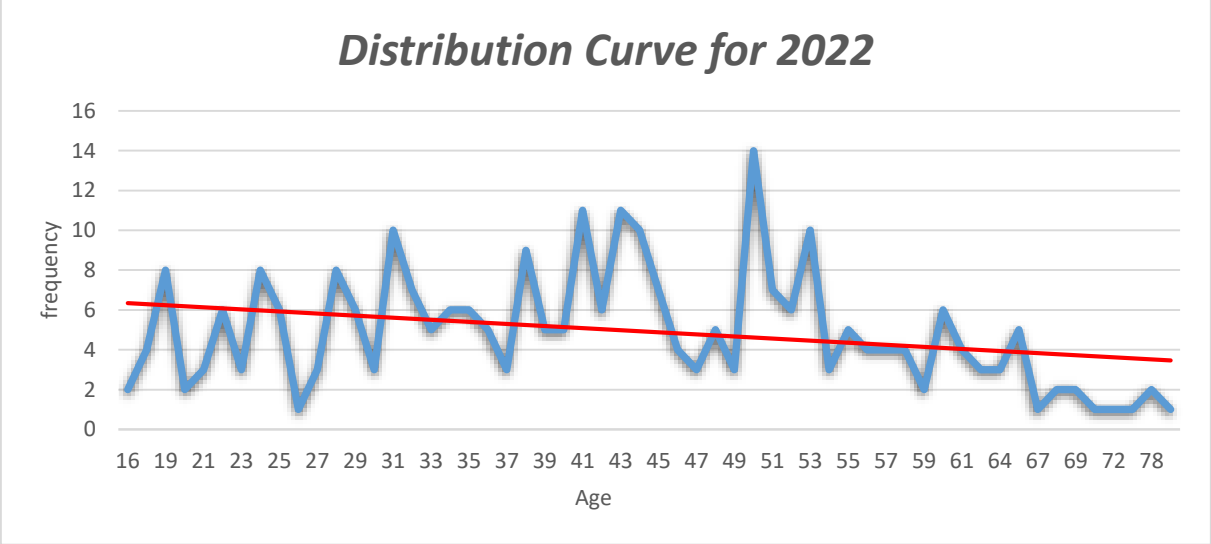

Figure 3. Age Distribution Curve with Variation Analysis for 2022

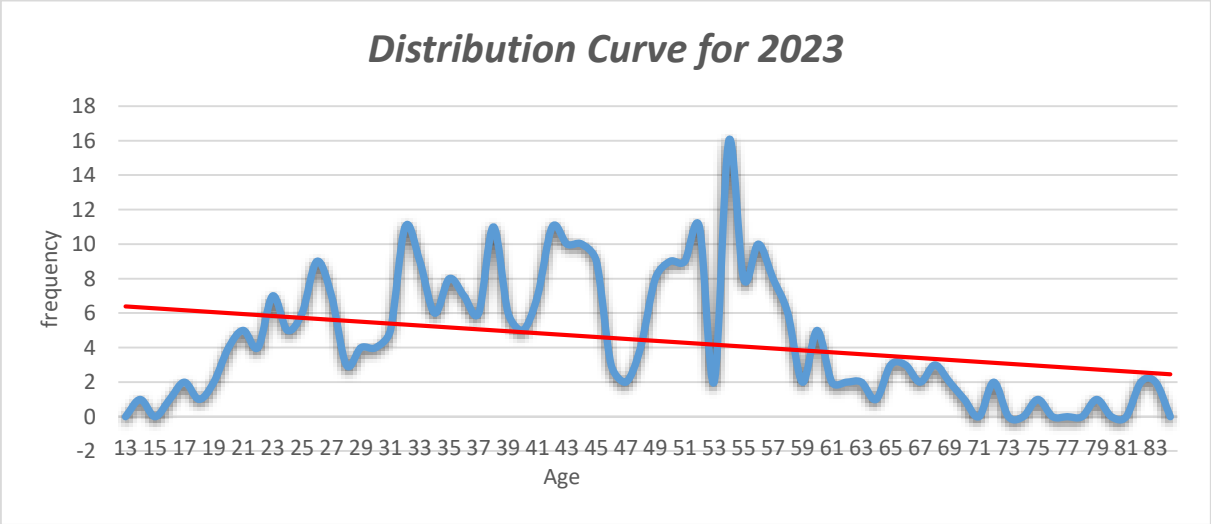

Figure 4. Age Distribution Curve with Variation Analysis for 2023

An increase in the total number of hospitalizations is observed from the very beginning — approximately 37% in 2022 and around 16% in 2023. Figure 5 illustrates the dynamics in the absolute number of hospitalizations, both by gender and in total for the period.

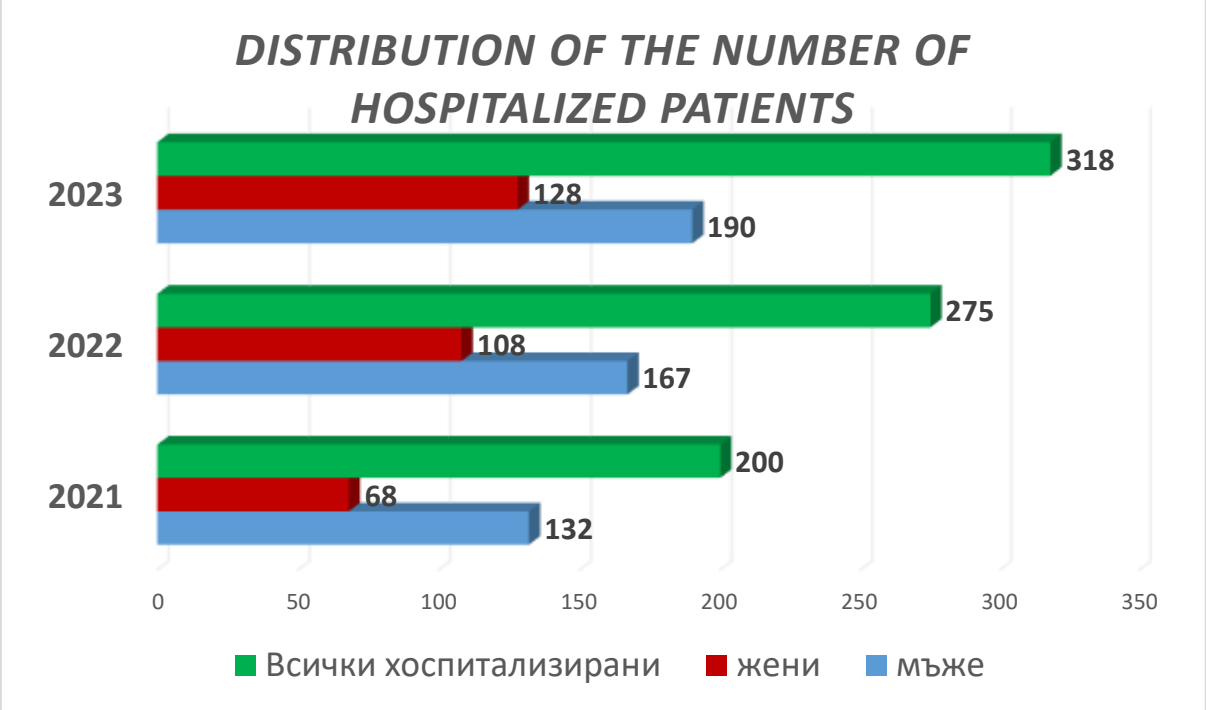

Figure 5. Distribution of the Number of Hospitalized Patients by Gender for the Period 2021–2023

This can be attributed to many factors, but the impact of COVID-19 must definitely be considered. A definitive answer regarding the significance of the pandemic on the dynamics of emergency psychiatric admissions will be possible once data from 2024 is analyzed and compared with previous results and trends. In terms of gender distribution, male patients are predominant. This is fully explainable by the characteristics of the male gender—being more dominant, exhibiting more aggressive behavior, and having more difficulty controlling impulses. Men have approximately twice as many emergency hospitalizations compared to women (Figure 6).

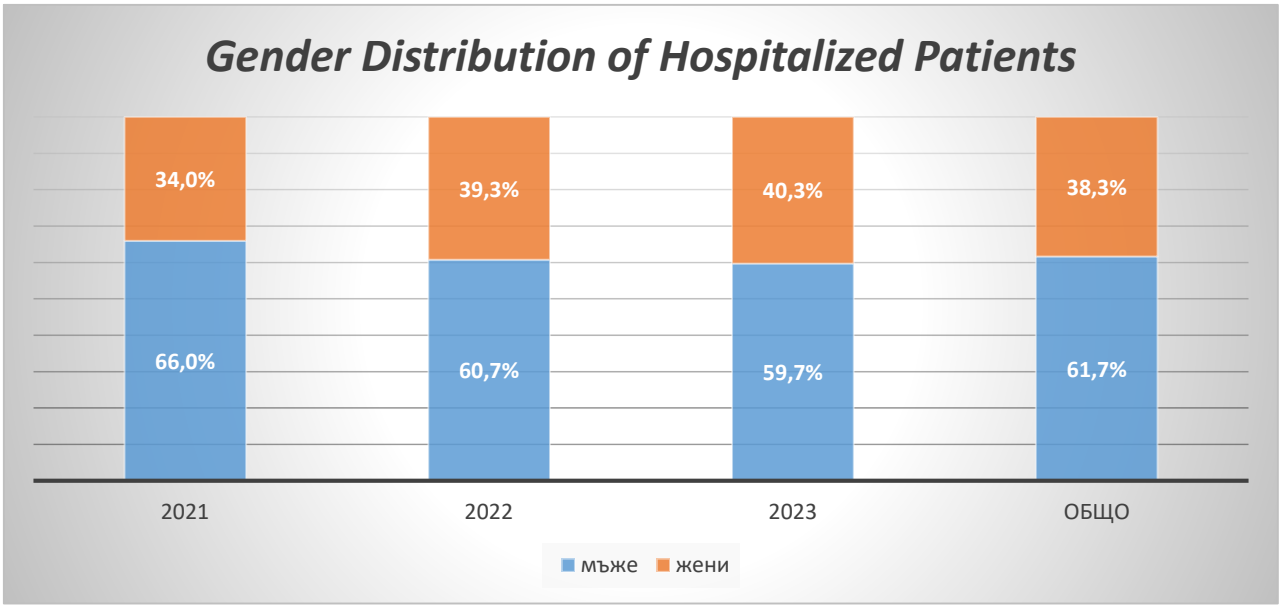

Figure 6. Gender Distribution of Hospitalized Patients for the Period 2021–2023

5.1.2. DISTRIBUTION BY ADMISSION DIAGNOSIS

In terms of nosology, schizophrenia clearly dominates (51.50% in 2021, 57.82% in 2022, and 46.54% in 2023), followed by bipolar affective disorder (9.00% in 2021, 8.00% in 2022, and 7.55% in 2023), mental and behavioral disorders due to alcohol and/or psychoactive substance use (8.50% + 4.50% in 2021, 6.55% + 2.91% in 2022, and 8.18% + 3.77% in 2023), and organic disorders (10.00% in 2021, 5.09% in 2022, and 6.92% in 2023).

Tables 2, 3, and 4, as well as Figure 7, present the absolute values and relative shares of patients with various diagnostic categories. Based on ICD-10, we differentiated the following diagnostic groups:

- F0x.x – Organic, including symptomatic disorders
- F10.x – Mental and behavioral disorders due to alcohol use
- F1x.x – Mental and behavioral 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 – Personality and behavioral disorders in adulthood
- F7x.x – Intellectual disabilities

Table 2. Distribution of Diagnoses of Hospitalized Patients in 2021.

2021 г.	Men		Women		Total	
Diagnosis	Number	Proportion	Number	Proportion	Number	Proportion
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%
Други	0	0,00%	0	0,00%	0	0,00%

Table 3. Distribution of Diagnoses of Hospitalized Patients in 2022

2022 г.	Men		Women		Total	
Diagnosis	Number	Proportion	Number	Proportion	Number	Proportion
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%
Други	0	0,00%	0	0,00%	0	0,00%

Table 4. Distribution of Diagnoses of Hospitalized Patients in 2023.

2023 г.	Men		Women		Total	
Diagnosis	Number	Proportion	Number	Proportion	Number	Proportion
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%
Други	3	1,58%	1	0,78%	4	1,26%

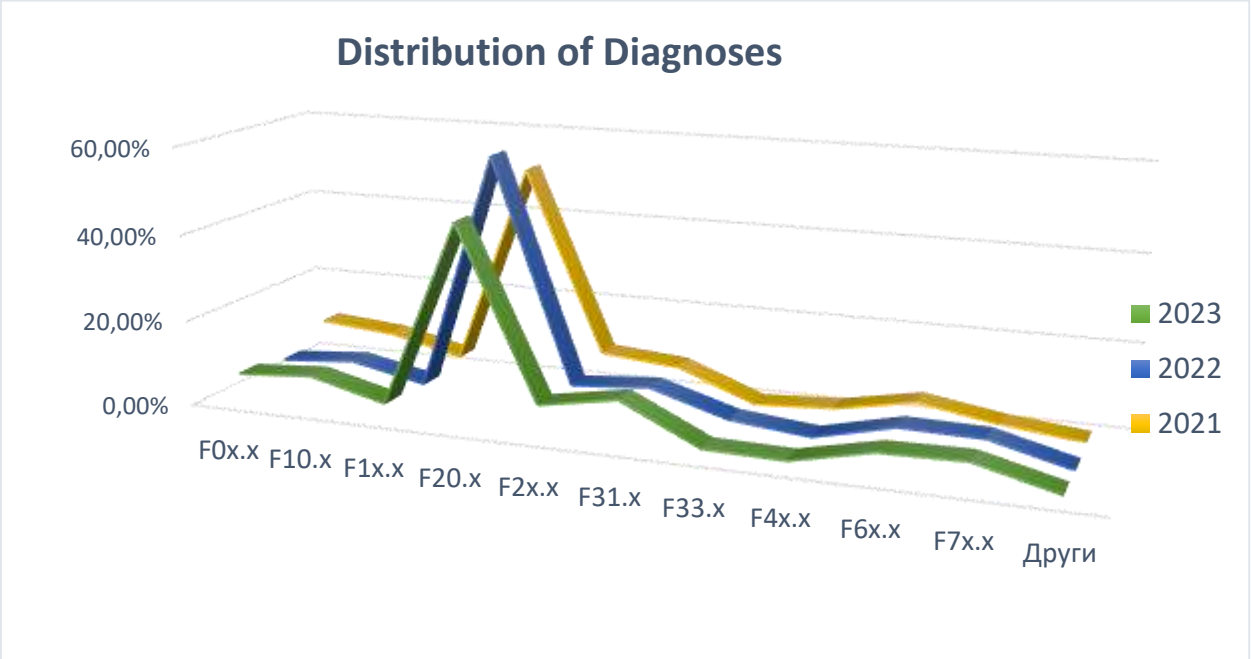

Figure 7. Distribution of Hospitalized Patients by Nosological Units for the Period 2021–2023

In terms of nosological distribution, patients with the most disabling psychiatric diagnosis—schizophrenia—statistically dominate to a significant degree ($p < 0.0001$). On the other end, patients with depressive and anxiety disorders have the lowest frequency of

emergency admissions. Notably, individuals with intellectual disabilities are also represented. They constitute a specific cohort of patients for whom recovery is not expected; rather, the goal is to reduce impulsivity and improve their integration into the home and community.

Figure 9 shows the diagnostic distribution of emergency hospitalized patients in the Psychiatric Clinics of UMHAT "Dr. Georgi Stranski" EAD – Pleven, for the period 2021–2023.

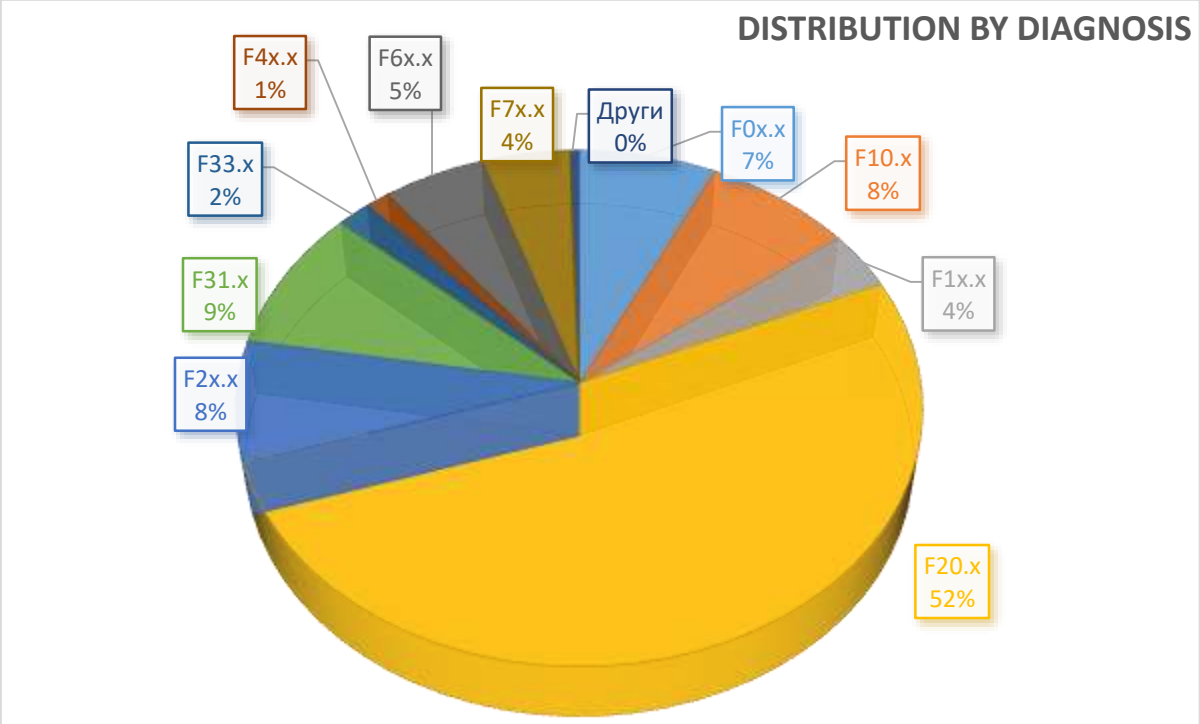

Figure 8. Distribution of diagnoses of emergency hospitalized patients in the Psychiatric Clinics of UMHAT "Dr. Georgi Stranski" EAD – Pleven, for the period 2021–2023

5.1.3. DISTRIBUTION BY SEQUENCE OF PSYCHIATRIC HOSPITALIZATION

Regarding the sequence of psychiatric hospitalization, it was found that for between 25–30% of patients, this was their first hospitalization. The same trend is preserved across subgroups. By gender, the relative share of patients hospitalized for the first time ranges between 24.74% and 30.56% of all emergency psychiatric hospitalizations.

Table 5. Gender Distribution of First-Time Hospitalized Patients

	2021 г.		2022 г.		2023 г.	
	Number	Proportion	Number	Proportion	Number	Proportion
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%

5.1.4. DISTRIBUTION BY LENGTH OF STAY

The data on the length of stay show a wide distribution, with the highest proportion (about one-third of all emergency hospitalizations) being for periods between 31 and 60 days, followed by stays of 16 to 20 days (about 10%). Tables 6, 7, and 8 and Figure 9 present summarized data on the duration of stay in emergency psychiatric cases.

Table 6. Distribution by Length of Stay in 2021

2021	Men		Women		Total	
Stay (days)	Number	Proportion	Number	Proportion	Number	Proportion
до 5	23	17,42%	9	13,24%	32	16,00%
6-10	7	5,30%	7	10,29%	14	7,00%
11-15	16	12,12%	1	1,47%	17	8,50%
16-20	14	10,61%	9	13,24%	23	11,50%
21-25	9	6,82%	6	8,82%	15	7,50%
26-30	8	6,06%	8	11,76%	16	8,00%
31-60	48	36,36%	21	30,88%	69	34,50%
61-90	5	3,79%	6	8,82%	11	5,50%
90+	2	1,52%	1	1,47%	3	1,50%

Table 7. Distribution by Length of Stay in 2022

2022	Men		Women		Total	
Stay (days)	Number	Proportion	Number	Stay (days)	Number	Proportion
до 5	18	10,78%	17	15,74%	35	12,73%
6-10	20	11,98%	11	10,19%	31	11,27%
11-15	20	11,98%	12	11,11%	32	11,64%
16-20	18	10,78%	13	12,04%	31	11,27%
21-25	14	8,38%	11	10,19%	25	9,09%
26-30	18	10,78%	11	10,19%	29	10,55%

31-60	47	28,14%	23	21,30%	70	25,45%
61-90	10	5,99%	4	3,70%	14	5,09%
90+	2	1,20%	6	5,56%	8	2,91%

Table 8. Distribution by Length of Stay in 2023

2023 Stay (days)	Men Number	Proportion	Women Number	Stay (days)	Total Number	Proportion
до 5	40	21,05%	21	16,41%	61	19,18%
6-10	28	14,74%	15	11,72%	43	13,52%
11-15	26	13,68%	23	17,97%	49	15,41%
16-20	16	8,42%	17	13,28%	33	10,38%
21-25	14	7,37%	14	10,94%	28	8,81%
26-30	12	6,32%	7	5,47%	19	5,97%
31-60	42	22,11%	22	17,19%	64	20,13%
61-90	10	5,26%	9	7,03%	19	5,97%
90+	2	1,05%	0	0,00%	2	0,63%

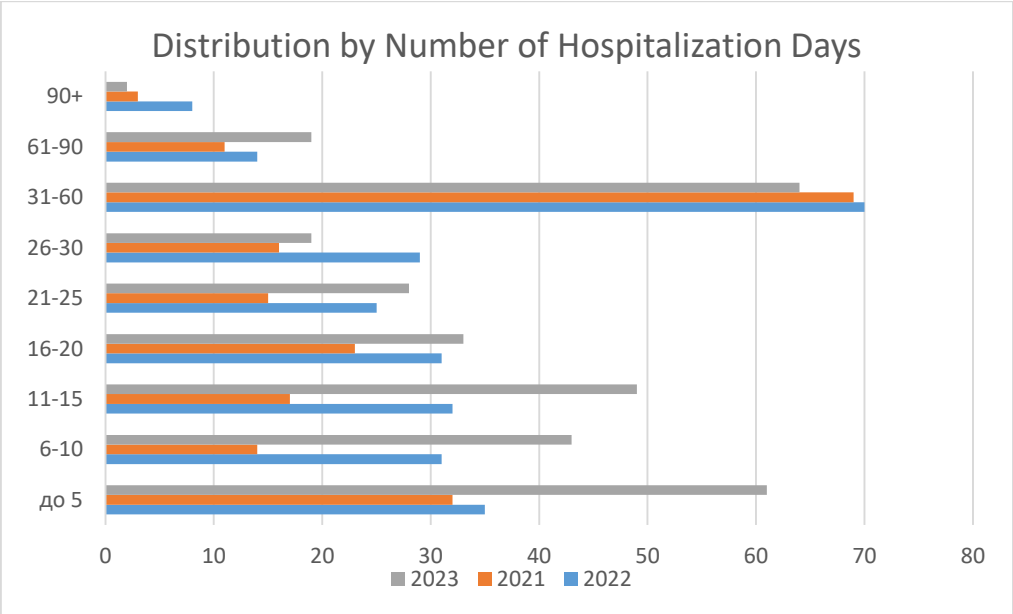

Figure 9. Distribution by Number of Hospitalization Days for the Period 2021–2023

The data on the duration of stay are illustrated in Figure 10. A trend is observed toward a reduction in the average stay and an increase in the proportion of patients with stays between 6–10 and 1–5 days at the expense of those with stays of 16–20 days. The clear majority is held by longer stays of 31–60 days, which correlates with the fact that if a patient is admitted in an emergency, the severity of symptoms is greater, and therapeutic stabilization requires more time.

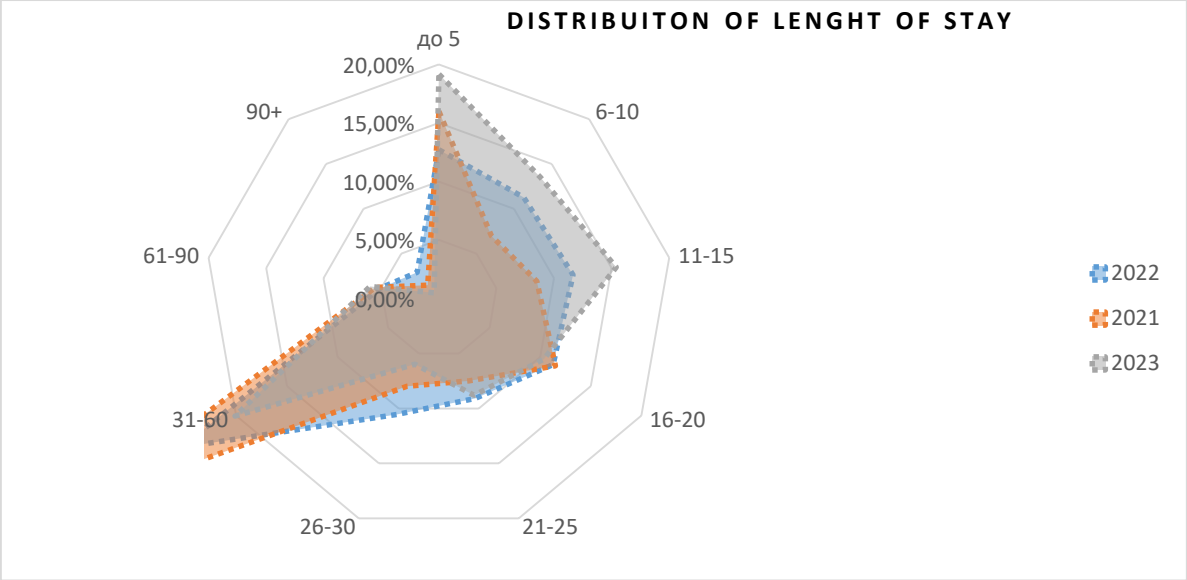

Figure 10. Distribution by Length of Stay of Emergency Hospitalized Patients

For about 30% of the emergency hospitalized patients, this is their first hospitalization. This shows that the psychiatric clinics at UMHAT "Dr. Georgi Stranski"—being the only inpatient psychiatric facilities in Pleven Region providing emergency hospitalizations—enjoy a high level of trust and are sought after in the diagnostic and therapeutic process as places where highly qualified professionals work and where patients receive the necessary care and high-level treatment.

On the other hand, in a more optimized primary healthcare setting, some of these individuals could be referred by their general practitioner to a psychiatrist for consultation, therapeutic intervention when needed, monitoring, and follow-up. This is one of the potential ways to reduce the burden on the healthcare system, especially on emergency medical services.

5.2. RESULTS AND ANALYSIS OF THE STUDY

5.2.1. RESULTS AND ANALYSIS OF DEMOGRAPHIC DATA

This study involved 106 participants—35 men and 81 women—with an average age of 53.19 years, working at RCEMC – Pleven and the Emergency Medical Unit of UMHAT "Dr. Georgi Stranski" – Pleven. Figure 11 shows the age distribution, which is uneven and right-skewed. The age trend is marked in red.

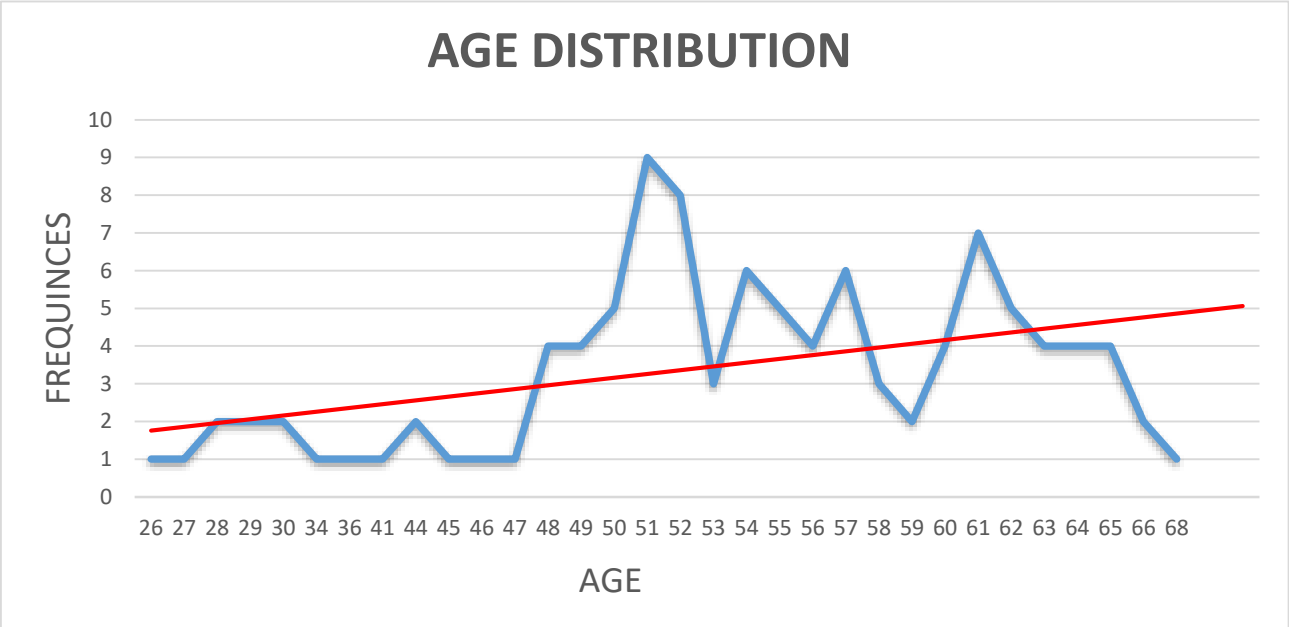

Figure 11. Age Distribution of Participants. Red – Age Trend

These data confirm the negative demographic trend of aging physicians and healthcare specialists. Confirming this trend proves the sample's representativeness for the general population of RCEMC workers. A confounding factor may be that EMU employs doctors in UMHAT "D-r Georgi Stranski" who have just completed their higher education and are under 30 years old.

The gender distribution shows a clear predominance ($p<0.0001$) of participants identifying as female—74.62% (n=81) compared to 33.02% (n=35) male (Figure 12). This result may be explained by the characteristic tendency of women to actively seek new knowledge and skills. Furthermore, psychiatric emergencies are among the most dangerous, and as a more vulnerable group, women may seek safety and protection by improving their qualifications to better manage psychiatric conditions.

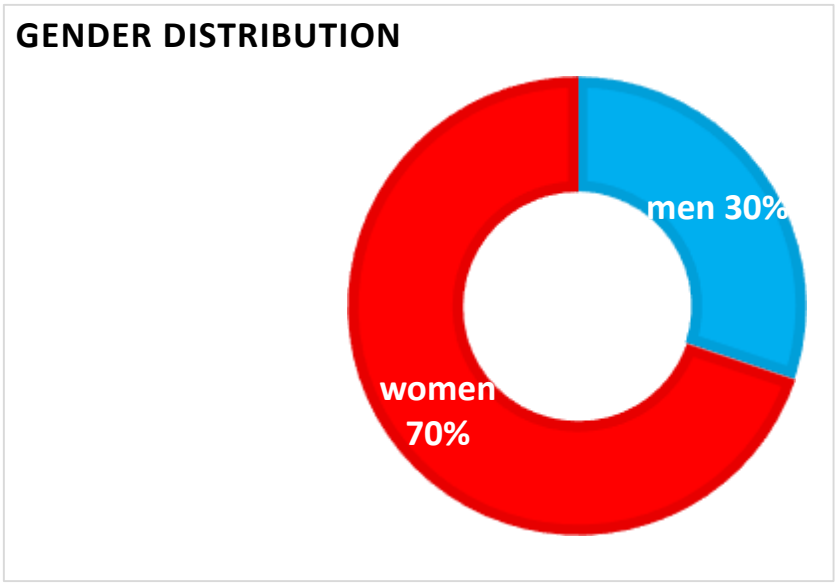

Figure 12. Gender distribution of participants

5.2.2. DISTRIBUTION AND ANALYSIS OF DATA ON QUALIFICATIONS, WORK EXPERIENCE, AND EXPERIENCE IN EMERGENCY MEDICINE

Figure 13 illustrates the distribution of participants by workplace, showing a dominance of RCEMC – Pleven staff—89.62% (n=95), with the remaining 10.38% (n=11) working in EMU.

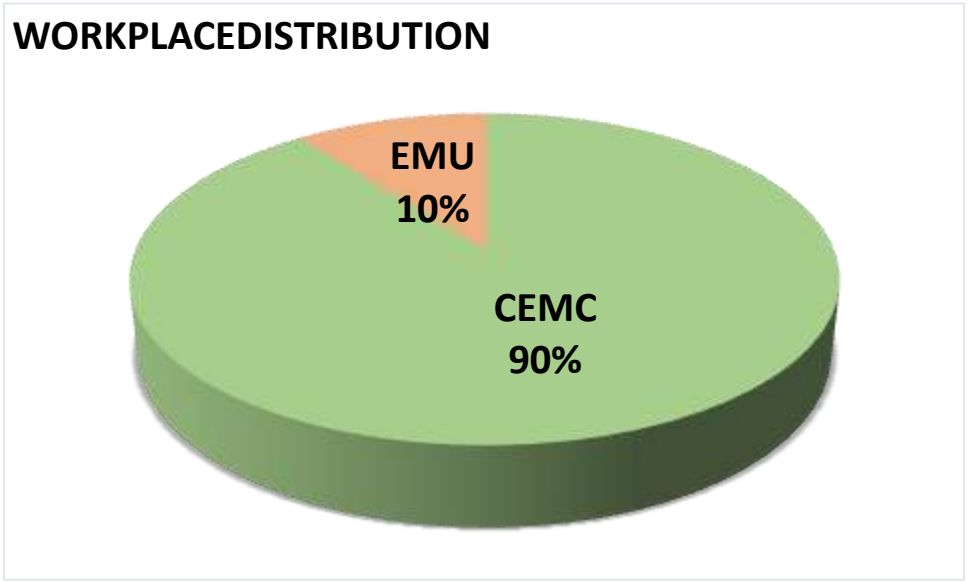

Figure 13. Workplace distribution of participants

By professional role, doctors dominate—almost two-thirds of the participants—60.38% (n=64), followed by physician assistants/paramedics—20.75% (n=22), and nurses/midwives—18.87% (n=20) (Figure 14).

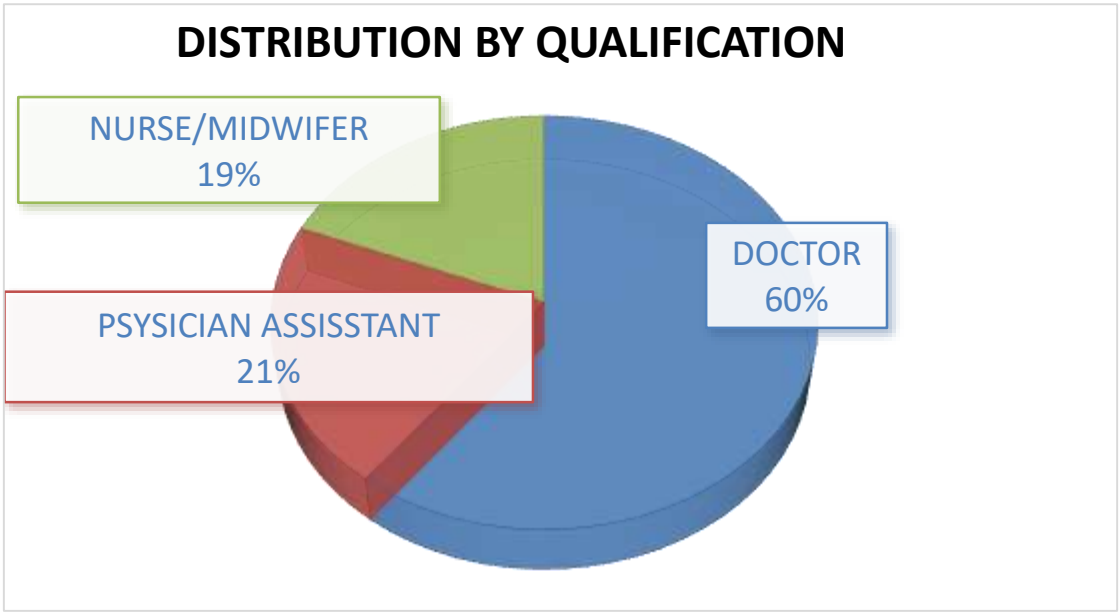

Figure 14. Distribution by qualification

More than half of the doctors have no specialty—56.25% (n=36), a little over a third have a different specialty—37.50% (n=24), only 4.69% (n=3) are certified in emergency medicine, and just one participant—1.56% (n=1)—has certifications in both emergency medicine and clinical toxicology. Figure 15 illustrates this distribution.

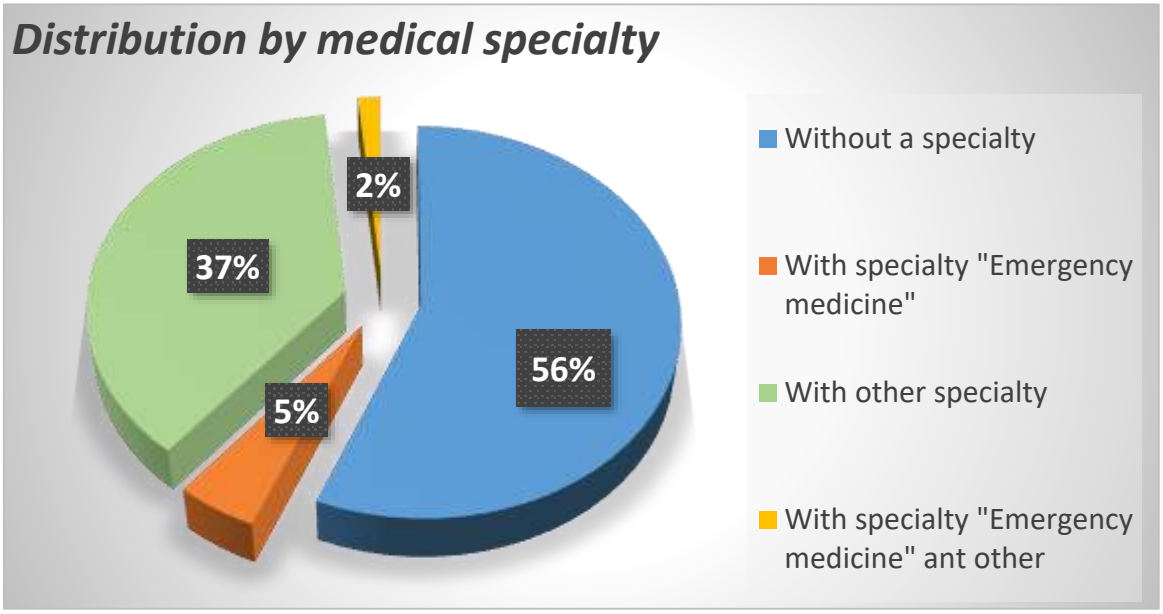

Figure 15. Distribution of the physician cohort by medical specialty

Professional experience shows a dominance of participants with 5 to 30 years of work experience—together accounting for over 80% of the participants. Participants with 1–5 years of experience comprise 18.87% (n=20), 6–10 years—16.98% (n=18), 16–20 years—16.04% (n=17), 21–25 years—11.32% (n=12), and 26–30 years—11.32% (n=12). The rest are split between less than one year—8.49% (n=9) and over 30 years of experience—7.55% (n=8) (Figure 16).

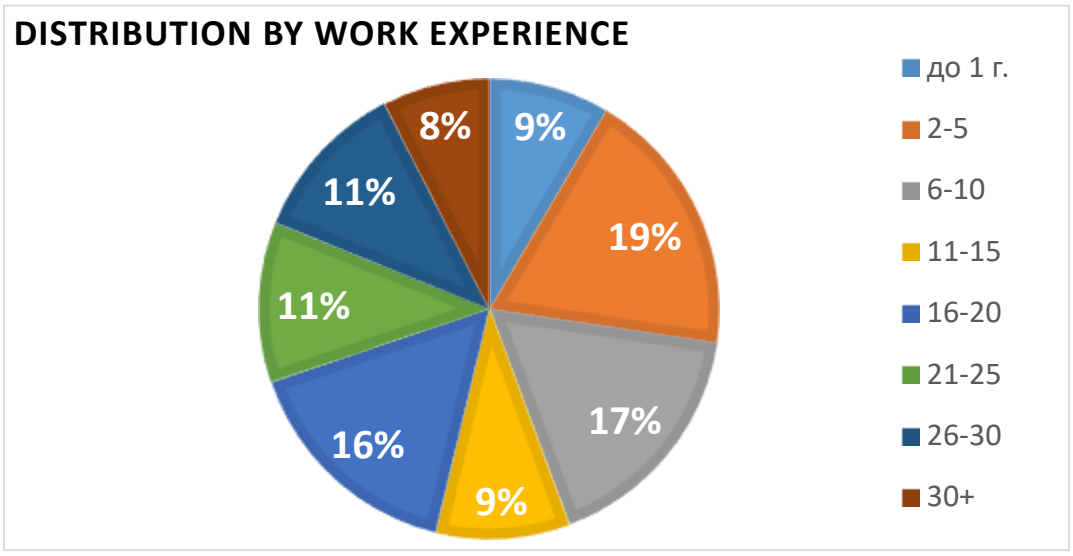

Figure 16. Distribution of participants by work experience

Experience in emergency medicine is notably skewed to the left (Figure 17)—a third of participants have up to 5 years of experience (up to 1 year—10.38% (n=11), 1–5 years—19.81% (n=21)), another third have between 6 and 15 years (6–10 years—16.98% (n=18), 11–15 years—13.21% (n=14)), and those with over 30 years of emergency experience comprise under 10%—5.66% (n=8).

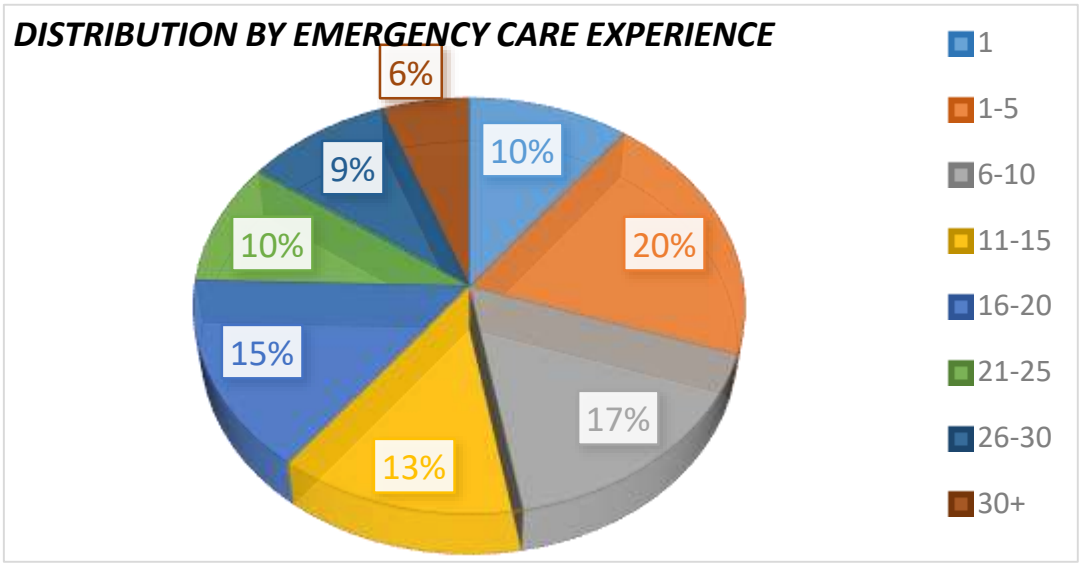

Figure 17. Distribution of participants by emergency care experience

5.2.3. DISTRIBUTION AND ANALYSIS OF DATA ON THE DYNAMICS OF EMERGENCY PSYCHIATRIC CONDITIONS AND SELF-ASSESSMENT OF THEIR MANAGEMENT

All participants unanimously reported an increase in emergency psychiatric cases, with nearly 75% stating the cases have worsened over time. Figure 18 illustrates this trend. More experienced respondents noted that in the past, psychiatric patients were rarely referred to emergency services due to better psychiatric infrastructure. On the other hand, most of the surveyed individuals reported that they are increasingly encountering cases of people with severe psychiatric diagnoses who do not follow treatment, live in extremely poor social and living conditions, and lack support from family and/or close ones.

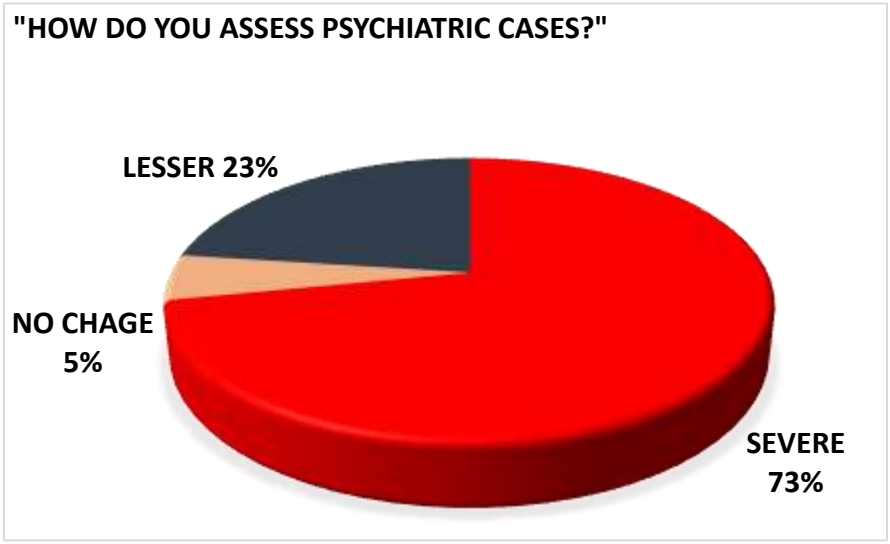

Figure 18. Perception of the increasing severity of psychiatric emergencies over time

Approximately two-thirds – 76.42% (n=81) of the participants – indicated that they do not feel prepared to handle an emergency psychiatric patient. Only 17.92% (n=19) reported that they manage emergency psychiatric conditions without concern. The remaining 5.66% (n=6) stated they are unsure whether they would be able to cope with such a case (Figure 19). The results are unambiguous, but it should be noted that this question is more representative of those working in the RCEMC, and less so for those in the EMU. The specific procedure for admitting patients to the psychiatric structures of the regional hospital – UMHAT "Dr. Georgi Stranski" – Pleven – significantly reduces the number of emergency psychiatric encounters experienced by EMU personnel. Psychiatric emergencies without accompanying somatic pathology are

referred directly for hospitalization at the Psychiatric Clinics, without the involvement of the EMU.

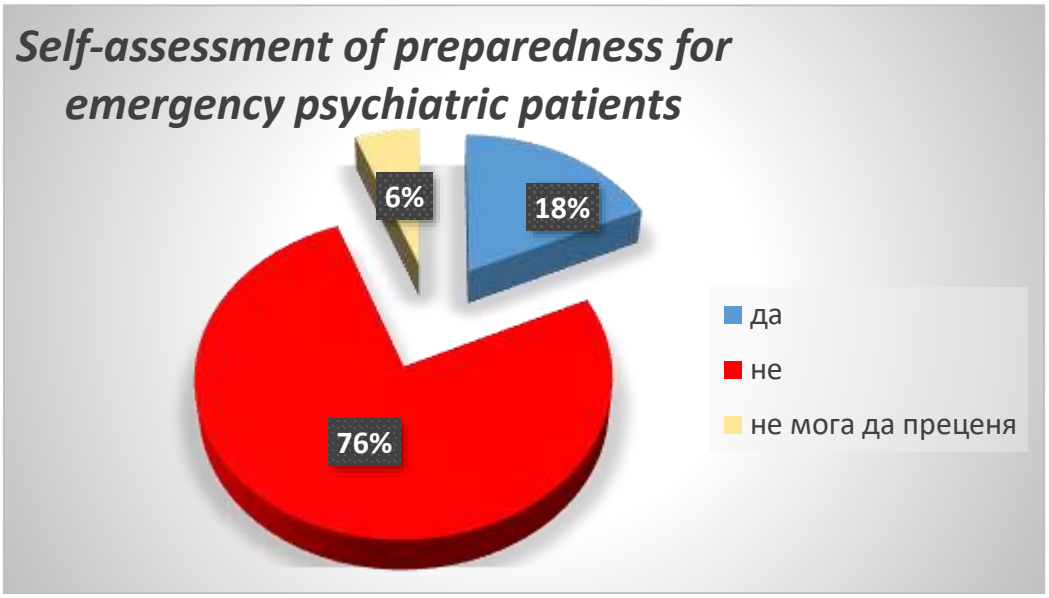

Figure 19. Self-assessment of preparedness for emergency psychiatric patients

A correlation analysis confirmed a significant relationship between confidence in managing an emergency psychiatric patient and experience in emergency medicine. A strong linear correlation was established, with a Spearman coefficient of 0.663.

Approximately 80% of those working at the RCEMC – Pleven and the EMU of UMHAT "Dr. Georgi Stranski" – 73.58% (n=78) – report encountering between 1 and 5 emergency psychiatric patients per month. Ten participants (9.43%) report having between 6 and 10 psychiatric cases monthly, 6 participants (5.66%) deal with between 11 and 15 psychiatric cases, and only 2 participants (1.89%) in the study report handling between 16 and 20 cases.

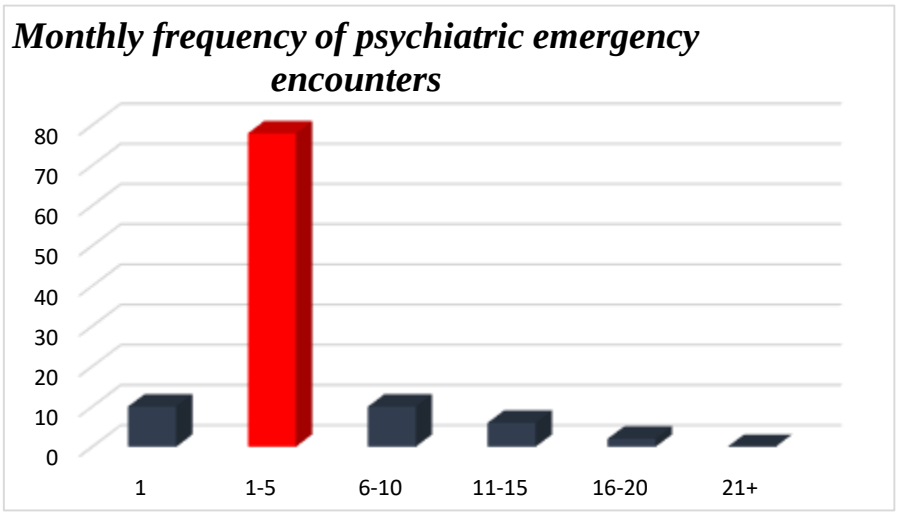

Figure 20. Monthly frequency of psychiatric emergency encounters

5.2.4. DISTRIBUTION OF DATA ON THE RECOGNITION OF EMERGENCY PSYCHIATRIC CASES

The correct identification of emergency psychiatric conditions—or the incorrect classification of non-emergency cases as emergencies—is of great importance in daily clinical practice. The participants in our study were presented with a list of 11 conditions and were asked to mark the ones that qualify as psychiatric emergencies. Both correct and incorrect responses were recorded, i.e., the correctly identified emergency psychiatric conditions as well as the incorrectly classified conditions marked as emergencies.

Table 9 and Figures 21 and 22 illustrate the change following the training. The results from Survey “A” show a gradual and fairly even distribution in the frequency of correctly identified emergency psychiatric conditions: 22.63% (n=24) of participants recognized only 2 of them, 29.25% (n=31) recognized 3, 28.30% (n=30) recognized 4, and only 19.81% (n=21) correctly identified all 5 of 5 possible conditions. The results are also positive regarding the misclassification of other emergency conditions as psychiatric: 30.19% (n=32) of participants did not incorrectly classify any conditions as psychiatric, 9.43% (n=10) misclassified one condition, 38.68% (n=41) misclassified two, 14.15% (n=15) made three errors, and more than one-fifth—21.62% (n=8)—misclassified four conditions as psychiatric emergencies.

After the training (Survey “B”), the results were significantly different. In terms of correctly identifying psychiatric emergencies: over half (56.60%, n=60) recognized all 5 conditions, 33.02% (n=35) recognized 4, and only 10.38% (n=11) identified 3. As for incorrectly identified emergency conditions post-training: 48.11% (n=51) did not select any incorrect ones, 31.13% (n=33) misclassified one condition, 19.81% (n=21) made two errors, and only 0.94% (n=1) made three errors.

The statistical analysis using Student's t-test confirmed a statistically significant difference in the results ($p < 0.05$), both in terms of correctly and incorrectly identified conditions, before and after the training seminar, which highlights the benefits of conducting the training.

Table 9. Correct and incorrect responses in identifying emergency psychiatric conditions

NUMBER ANSWERS	CORRECT ANSWERS				WRONG			
	BEFORE		AFTER		BEFORE		AFTER	
0	0	0,00%	0	0,00%	32	30,19%	51	48,11%
1	0	0,00%	0	0,00%	10	9,43%	33	31,13%
2	24	22,64%	0	0,00%	41	38,68%	21	19,81%
3	31	29,25%	11	10,38%	15	14,15%	1	0,94%
4	30	28,30%	35	33,02%	8	21,62%	0	0,00%
5	21	19,81%	60	56,60%	0	0,00%	0	0,00%
t	3,775				2,12			
p	0.009				0.04			

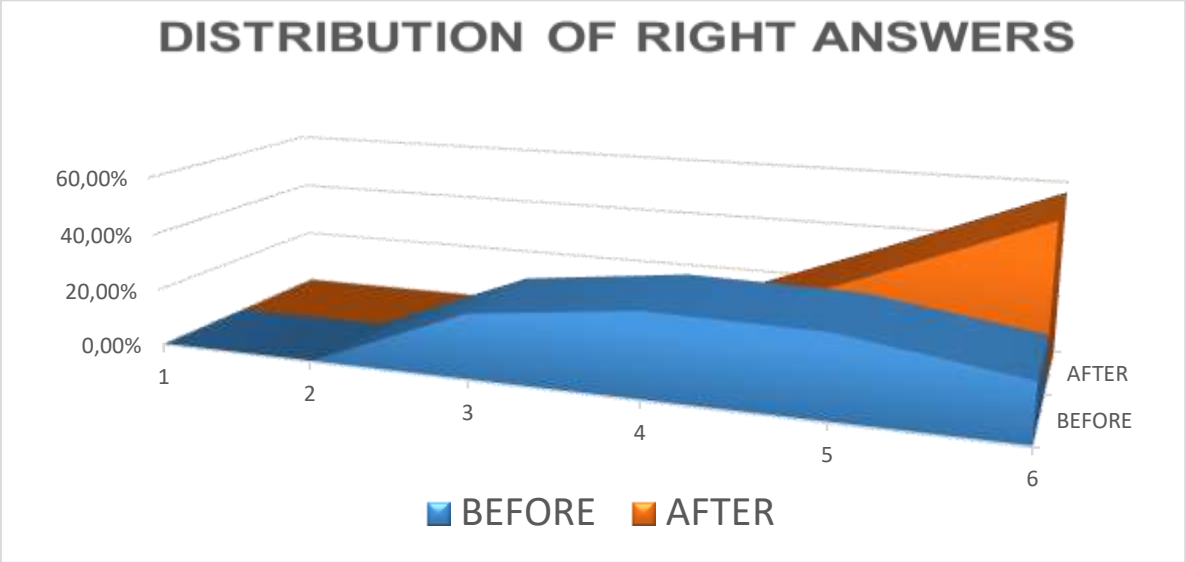

Figure 21. Distribution of correctly identified emergency psychiatric conditions

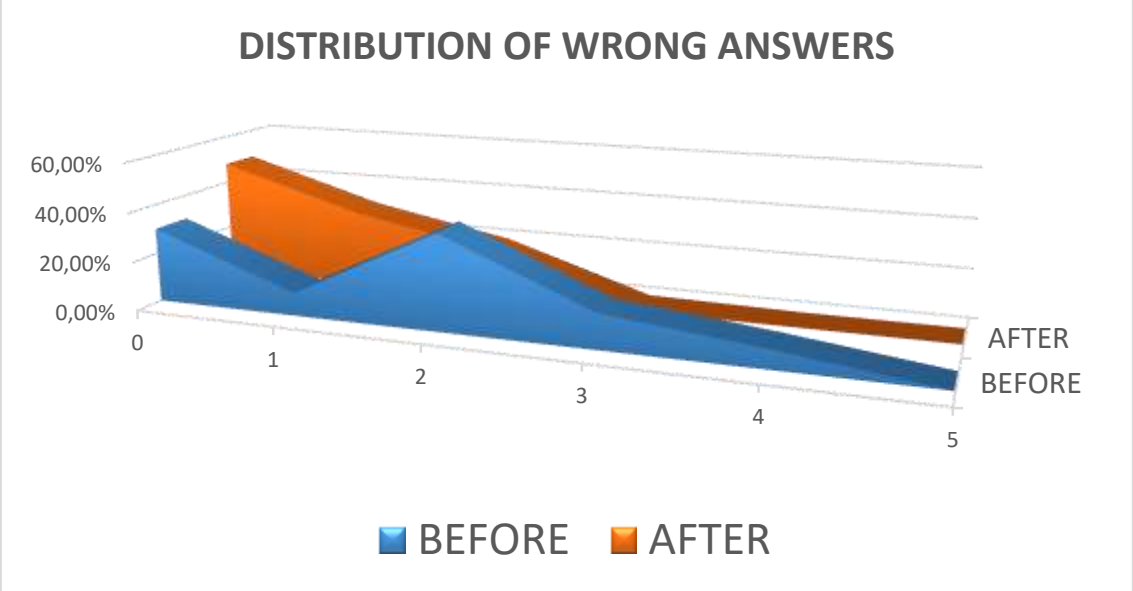

Figure 22. Distribution of incorrectly identified emergency conditions as psychiatric

5.2.5. DISTRIBUTION AND ANALYSIS OF DATA ON THE MANAGEMENT OF EMERGENCY PSYCHIATRIC CASES

The management of emergency psychiatric conditions remains a challenge for those working in emergency care units. Often, the lack of adequate training leads to unnecessary fear and the unwarranted avoidance of medication. When asked to indicate the permitted methods for managing psychomotor agitation or other psychiatric conditions, nearly one-fifth of the study participants identified medication as the sole method – 17.92% (n=19). A significant proportion—65.09% (n=69)—included isolation and physical restraint as extreme but authorized methods for preventing manifestations of aggression and self-harm. Table 10 presents the distribution of correct and incorrect responses regarding the possible pharmacological and other means for managing states of aggression.

Table 10. Results of Correct and Incorrect Permitted Methods

NUMBER ANSWERS	CORRECT				WRONG			
	BEFORE		AFTER		NUMBER ANSWERS		BEFORE	
0	0	0,00%	0	0,00%	28	26,42%	103	97,17%
1	19	17,92%	0	0,00%	30	28,30%	3	2,83%
2	18	16,98%	2	5,41%	35	33,02%	0	0,00%
3	69	65,09%	104	98,11%	13	12,26%	0	0,00%
4					0	0,00%	0	0,00%
5					0	0,00%	0	0,00%
6					0	0,00%	0	0,00%
t		3,11				1,99		
p		0,04				0,04		

A positive trend is observed toward expanding the arsenal of available intervention methods. On the other hand, there is a clear absence of significantly misidentified methods—both before and after the training, the incorrectly selected measures and actions remained at a low relative frequency. Before the training, the incorrectly identified methods were distributed as follows: no incorrect methods – 26.42% (n=28), one incorrect method – 28.03% (n=30), two incorrect methods – 33.02% (n=35), and three incorrect methods – 12.26% (n=13). After the training, misidentified methods were reduced to a minimum—103 participants (97.17%) did not indicate a single incorrect method, and only 3 (2.83%) selected one incorrect method. All of this, when related to experience in emergency medicine, demonstrates empirically acquired

correct principles and behavioral models—those with longer professional experience in emergency departments have developed effective practices for managing emergency psychiatric patients. Figures 23 and 24 illustrate the change in recognition of correct and incorrect methods for managing emergency psychiatric conditions before and after the training. Statistical analysis using Student's t-test confirmed a statistically significant difference in the results ($p < 0.05$) before and after the training seminar, which highlights the benefits of conducting such training.

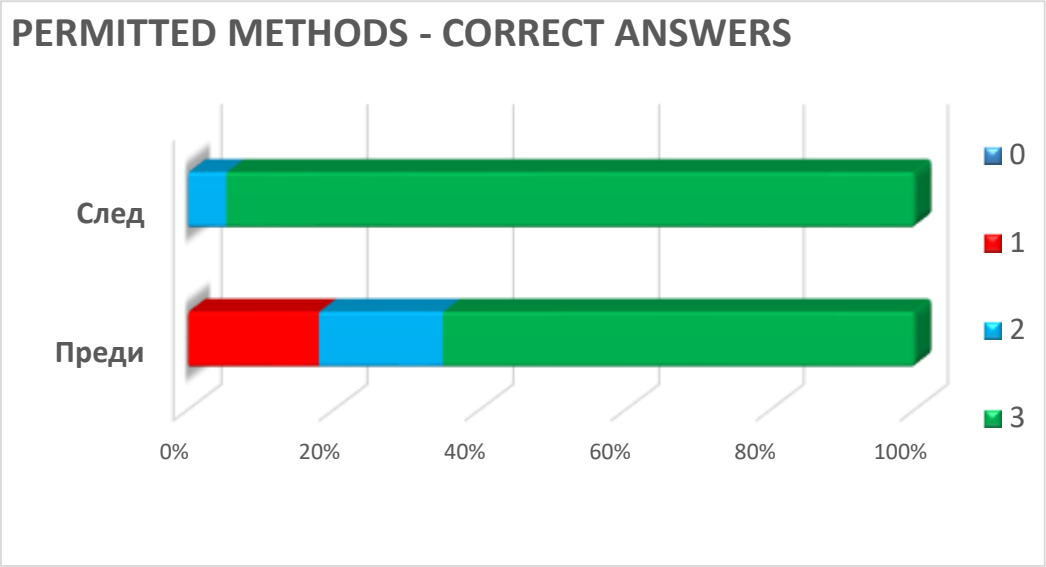

Figure 23. Permitted methods – correct answers for managing emergency psychiatric conditions

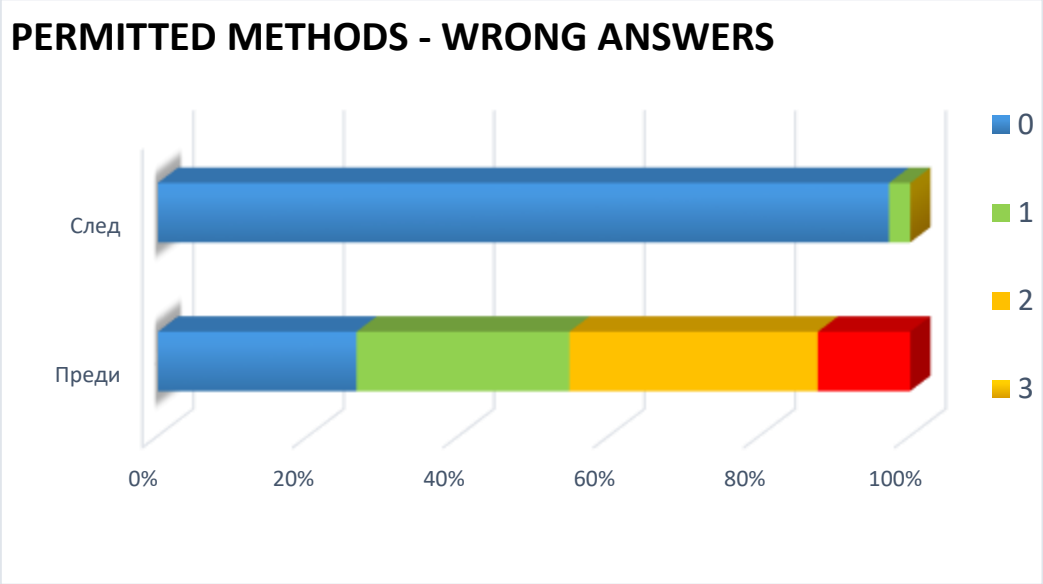

Figure 24. Permitted methods – wrong answers for managing emergency psychiatric conditions

The psychopharmacological arsenal used in managing emergency psychiatric patients is often a source of significant fear and hesitation among emergency medical professionals, leading to reduced utilization. When asked which medications they would use for handling emergency psychiatric conditions, the study participants significantly limited their choices, prioritizing benzodiazepines and bromide salts, while antipsychotics—such as chlorpromazine and haloperidol—were mentioned far less frequently. Specifically, 43.24% (n=16) listed only one medication, and the majority—54.72% (n=58)—identified two medications. About one-third of participants indicated three—13.21% (n=14)—or four—16.88% (n=18)—preferred medications from the options above. Around 10% cited naloxone as a drug of choice, although its primary use is in emergency toxicology rather than in managing psychiatric emergencies. Table 11 presents the results regarding which psychopharmacological agents are considered appropriate.

Table 11. Correctly and incorrectly identified methods for managing an emergency psychiatric patient

NUMBER ANSWERS	CORRECT				WRONG			
	BEFORE		AFTER		NUMBER ANSWERS		BEFORE	
0	0	0,00%	0	0,00%	32	30,19%	90	84,91%
1	16	43,24%	0	0,00%	38	35,85%	14	13,21%
2	58	54,72%	6	16,22%	26	24,53%	2	1,89%
3	14	13,21%	12	11,32%	10	9,43%	0	0,00%
4	18	16,98%	88	83,02%				
t	2,09				1,99			
p	0,04				0,04			

Regarding incorrectly identified medications for use in emergency psychiatric cases in the preliminary survey, nearly one-third of participants identified 1—35.85% (n=38)—and 2—30.19% (n=32)—incorrect medications. Significantly fewer participants selected 3—24.53% (n=26)—or 4—9.43% (n=10) wrongly classified medications. After the training, a notable improvement was observed—only 2 participants (1.89%) selected 2 incorrect medications, 14 (13.21%) selected 1 incorrect medication, and 90 (84.19%) did not identify any incorrect medications (Figure 26, Figure 27).

Statistical analysis using Student's t-test confirmed a statistically significant difference in the results ($p < 0.05$) before and after the training seminar, which highlights the benefits of conducting the training.

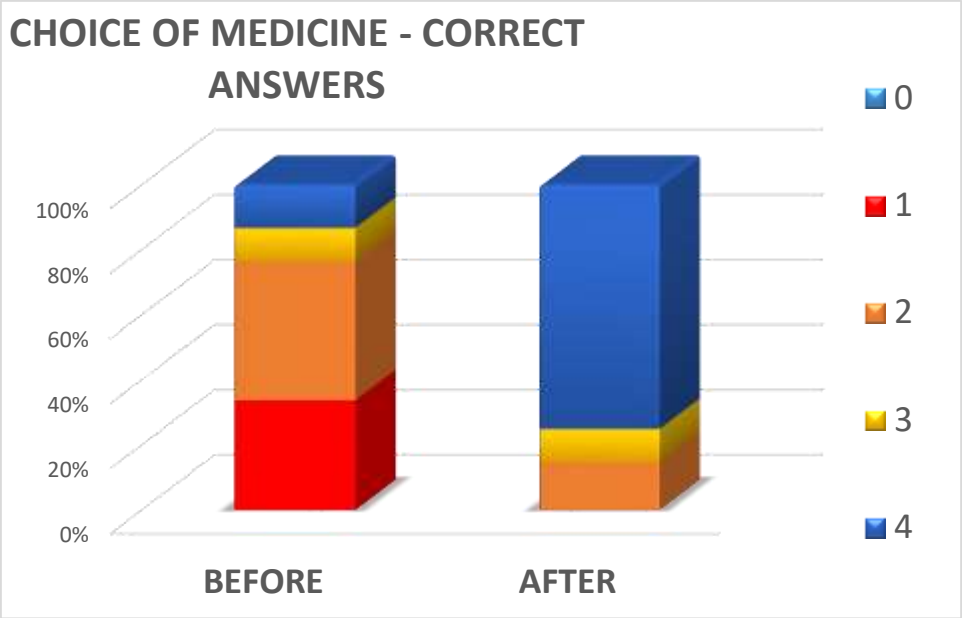

Figure 25. Correctly identified medications of choice before and after the training

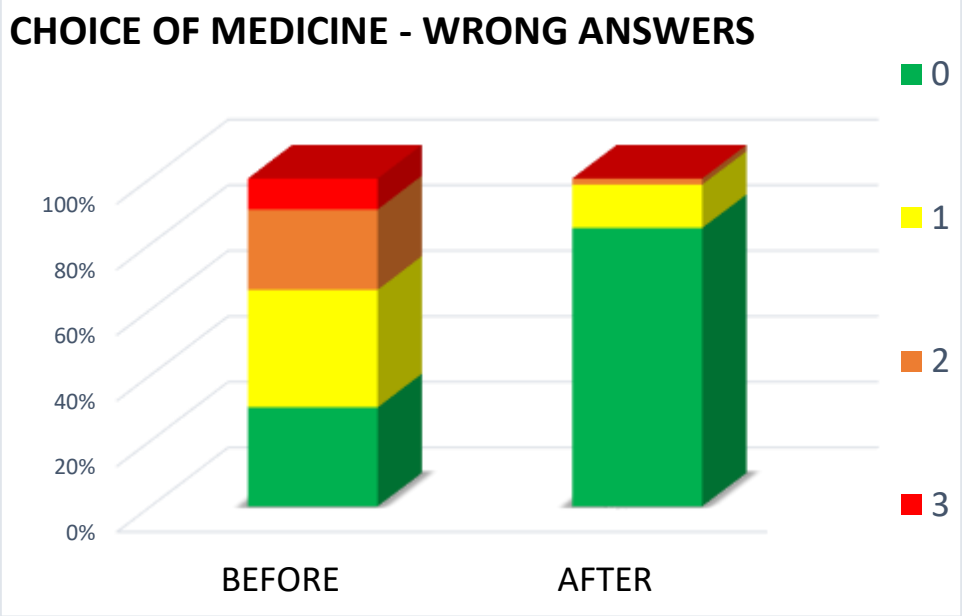

Figure 26. Incorrectly identified medications of choice before and after the training

Uncertainty and the presence of significant potential serious side effects are the main factors that contribute to the cautious approach and low frequency of psychopharmacological drug use. Modern internationally recognized clinical guidelines include a broader range of medications, providing a foundation for expanding therapeutic options in psychiatric emergency situations.

Non-pharmacological methods for managing emergency psychiatric conditions are highly important but, unfortunately, have low representation. Emergency care workers

demonstrate a low level of awareness and knowledge of possible non-medication approaches—only about one-third, 33.02% (n=35), are familiar with and correctly identify the use of psychotherapeutic techniques. On the other end, 79.25% (n=84) provide incorrect answers, and 16.04% (n=17) do not respond at all, stating they do not know or are unsure. After the training, a significant increase in awareness is observed—98.11% (n=104) correctly recognize psychotherapeutic methods, and only one participant—0.94%—gave an incorrect answer or did not respond. This is likely due to the specificity of the subject and the need for in-depth and specialized training to develop such skills.

As for knowledge and skills related to the immobilization and restraint of emergency psychiatric patients, awareness is high—prior to the training, over three-quarters—80.19% (n=85)—were familiar with the conditions and methods of restraint and isolation; only 11.32% (n=12) gave incorrect responses, and 8.49% (n=9) did not answer due to lack of knowledge or uncertainty. Table 12 and Figures 27 and 28 illustrate these results.

Table 12. Results from questions on other methods in emergency psychiatry and knowledge of immobilization and restraint of emergency psychiatric patients

	OTHER METHODS					
NUMBER OF ANSWERS	BEFORE		p	AFTER		p
CORRECT	35	33,02%	<0,001	104	98,11%	0,142
WRONG	84	79,25%	<0,001	1	0,94%	<0,001
N/A	17	16,04%	<0,001	1	0,94%	<0,001
	IMMOBILIZATION AND FIXATION					
NUMBER OF ANSWERS	BEFORE		p	AFTER		p
CORRECT	85	80,19%	<0,001	104	98,11%	14,20%
WRONG	12	11,32%	<0,001	0	0,00%	
N/A	9	8,49%	<0,001	2	1,89%	<0,001

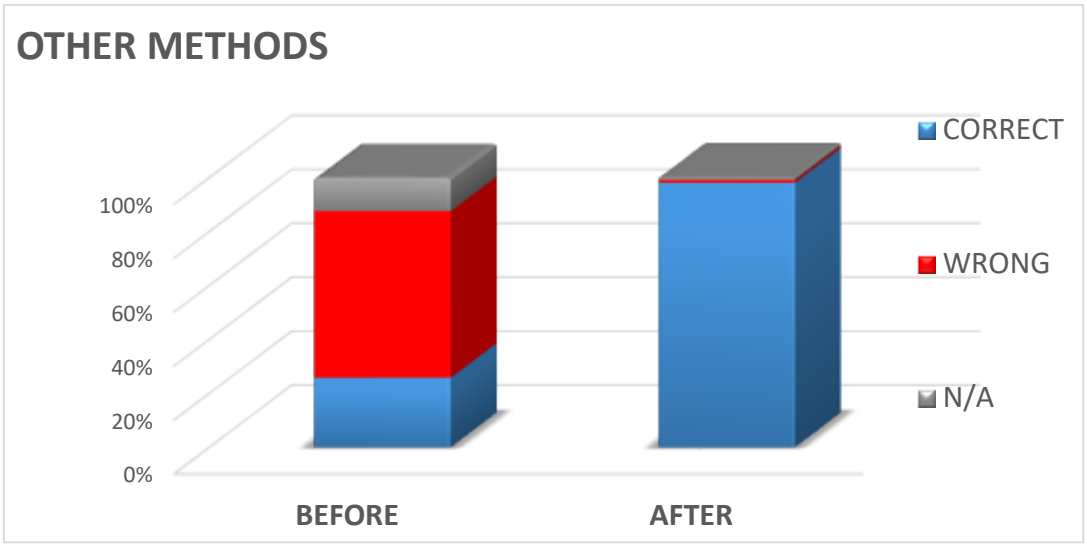

Figure 27. Response to the question on other methods for managing an emergency psychiatric condition

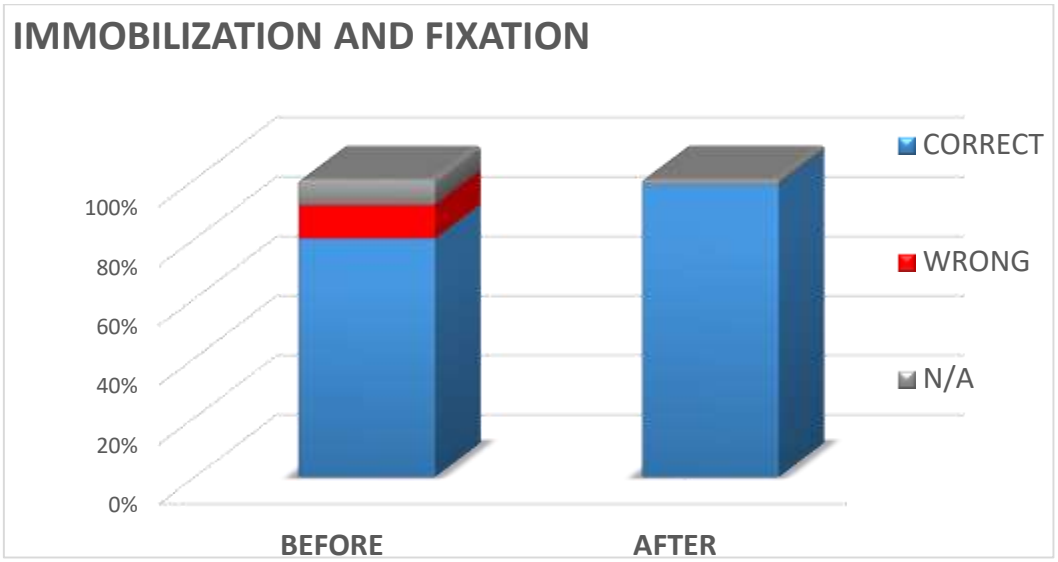

Figure 28. Results from the question on knowledge and skills for immobilization and restraint

Managing emergency psychiatric conditions is the next major challenge facing professionals working in emergency settings. Experience contributes to a certain, albeit limited, routine when it comes to administering psychopharmacological agents. Nevertheless, a high level of uncertainty and caution regarding their use persists. Due to their specific nature, non-pharmacological methods are difficult to demonstrate and even more challenging to apply to emergency psychiatric patients. Therefore, more in-depth training is needed to acquire the practical skills required for effectively managing psychiatric emergencies.

5.2.6. DISTRIBUTION AND ANALYSIS OF DATA ON THE MEDICO-LEGAL ASPECTS OF EMERGENCY PSYCHIATRIC CONDITIONS

The forensic psychiatric aspects of managing emergency psychiatric patients raise serious doubts and challenges in everyday clinical practice. Emergency medical professionals are often significantly confused when faced with a situation involving a person diagnosed with a psychiatric disorder who, at the time of contact, does not present an immediate or elevated risk of aggression or self-harm. On the other hand, relatives or close family members may insist that the person be admitted to a psychiatric facility, arguing that hospitalization should be mandated by a decision from a judicial authority. Table 13 presents the results from the participants in the study regarding two forensic psychiatric questions: "Who has the authority to order compulsory admission to a medical facility?" and "For how long can a person be hospitalized in a medical facility without their consent?"

Table 13. Data on participants' responses to forensic psychiatric questions

	Who has the authority to order compulsory admission to a medical facility					
NUMBER OF ANSWERS	BEFORE		p	AFTER		p
CORRECT	35	33,02%	<0,001	101	95,28%	0,895
WRONG	56	52,83%	<0,001	3	2,83%	<0,001
N/A	15	14,15%	<0,001	2	1,89%	<0,001
	For how long can a person be hospitalized in a medical facility without their consent					
NUMBER OF ANSWERS	BEFORE		p	AFTER		p
CORRECT	32	30,19%	<0.0001	100	94,34%	0,753
WRONG	54	50,94%	<0.0001	4	3,77%	<0.0001
N/A	20	18,87%	<0,0001	2	1,89%	<0.0001

In response to the question "Who can order compulsory admission to a psychiatric facility?" prior to the training, 33.02% (n=35) correctly identified the court. More than half—52.83% (n=56)—incorrectly selected another position or institution, while 14.15% (n=15) did not provide an answer. After the training, the distribution of responses changed significantly—95.28% (n=101) gave the correct answer, only 2.83% (n=3) gave an incorrect answer, and 1.89% (n=2) did not respond. These data are illustrated graphically in Figure 29.

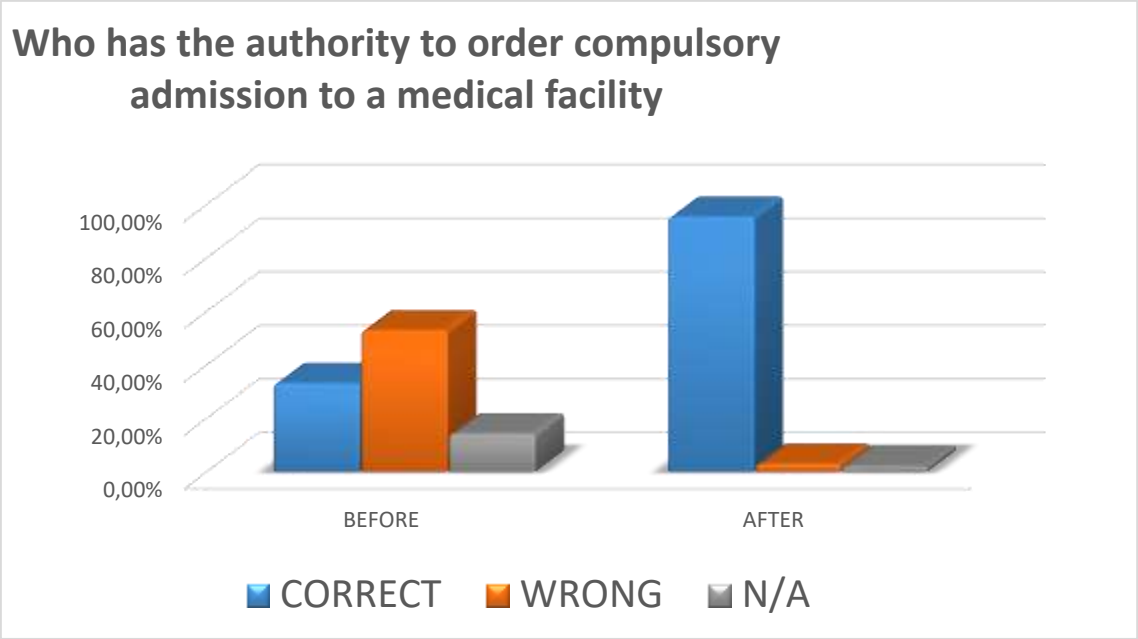

Figure 29. Distribution of responses to the question "Who can admit a patient to a medical facility?"

A similar distribution of results is observed regarding the maximum duration for admitting a person to a medical facility without their consent. Only about one-third of the participants—30.19% (n=32)—correctly identified 24 hours as the maximum period for hospitalization without a signed Informed Consent declaration. Slightly more than half—50.94% (n=54)—gave an incorrect answer, while 18.87% (n=20) did not respond. After the training, a significant improvement in results was recorded—94.34% (n=100) of participants correctly identified the maximum duration for hospitalization without the patient's consent. Only 4 participants—3.77%—gave an incorrect answer, and 2 participants—1.89%—did not respond. Figure 30 displays these results.

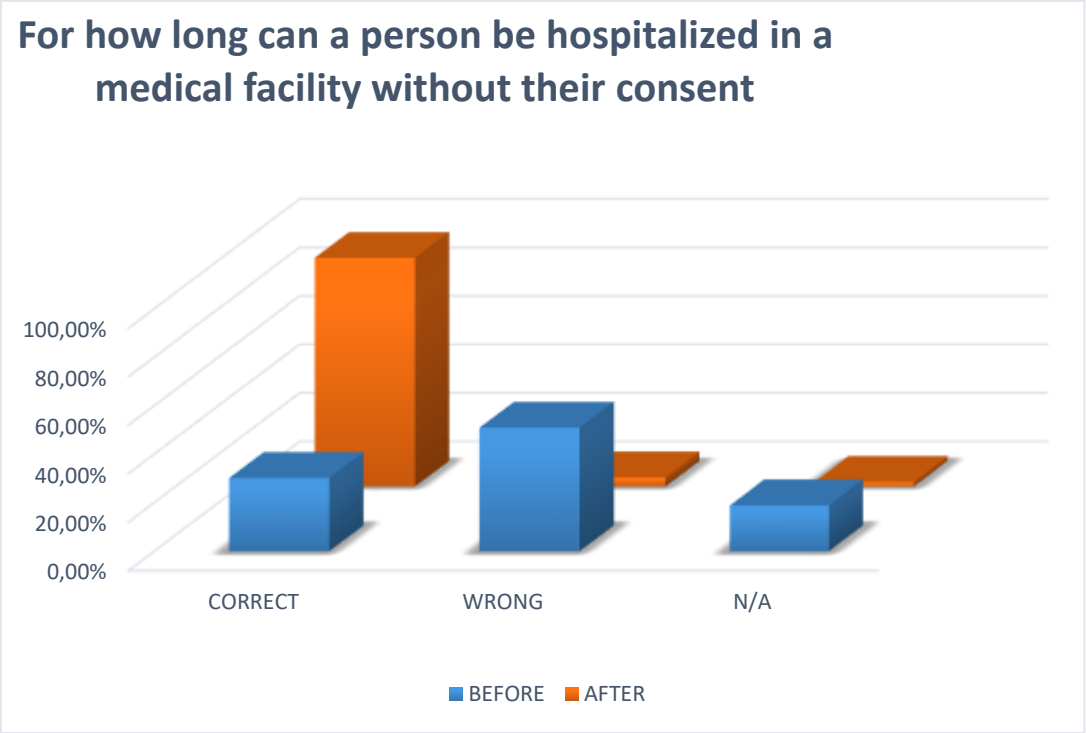

Figure 30. Distribution of responses to the question "For how long can a rerson be hospitalized in a medical facility without their consent?"

The statistical analysis shows a statistically significant difference in favor of the alternative hypothesis when comparing the cohort of participants before and after the training, which confirms the high effectiveness of the training.

The issues examined in the daily practice of emergency medical professionals are of great importance for optimizing the medical care provided, as well as for managing the workload of psychiatric healthcare services. Understanding the conditions and procedures for hospitalization in emergency situations, along with the correct identification of psychiatric emergencies, could reduce unnecessary admissions to psychiatric inpatient facilities for individuals who do not meet the criteria for such care.

In the context of a severe shortage of psychiatrists and mental health professionals in psychiatric facilities, this represents a potential strategic solution for easing the pressure on the psychiatric healthcare system. Moreover, improving the legal literacy of emergency personnel would foster an environment of confidence, calm, and greater success when facing such situations.

5.2.7. DISTRIBUTION AND ANALYSIS OF DATA FROM CLINICAL CASE RECOGNITION

Recognizing emergency psychiatric conditions and distinguishing them from other life-threatening syndromes and diseases is crucial in the triage of emergency patients. In everyday clinical practice, any physician—regardless of specialty—may encounter behavioral and psychological abnormalities in patients that result from a variety of factors, but are not manifestations of a psychiatric disorder. On the other hand, there are numerous cases in which the stigma surrounding psychiatry significantly increases the risk to a patient's life and health, by consciously or subconsciously leading clinicians to interpret the situation through the lens of a mental disorder—even when it is, in fact, a purely somatic condition causing the symptoms.

In the study, participants were presented with three clinical cases and asked to identify and determine the appropriate management strategy. The results are presented in Table 14.

Table 14. Results from Responses to the Clinical Cases in Both Surveys

NUMBER OF ANSWERS	CLINICAL CASE 1					
	BEFORE		p	AFTER		p
CORRECT	36	33,96%	<0,001	93	87,74%	0,0006
WRONG	62	58,49%	<0,001	13	12,26%	<0,001
N/A	8	7,55%	<0,001	0	0,00%	<0,001
NUMBER OF ANSWERS	CLINICAL CASE 2					
	BEFORE		p	AFTER		p
CORRECT	68	64,15%	<0,001	104	98,11%	<0.0001
WRONG	28	26,42%	<0,001	0	0,00%	<0.0001
N/A	10	9,43%	<0,001	2	1,89%	<0,0001
NUMBER OF ANSWERS	CLINICAL CASE 3					
	BEFORE		p	AFTER		p
CORRECT	8	7,55%	<0,001	94	88,68%	0,0028
WRONG	85	80,19%	<0,001	10	9,43%	<0,0001
N/A	13	12,26%	<0,001	2	1,89%	<0,0001

Clinical Case No. 1 involves a patient with a psychiatric disorder who, at the time of the emergency call made by relatives, does not exhibit behavior that endangers their own life or health, or that of others. Nevertheless, the relatives insist on the patient being admitted to a

psychiatric facility, claiming there is a "prosecutor's order." The results from the survey conducted before the training show a slight predominance of incorrect responses—51.89% (n=55) gave an incorrect answer, 40.57% (n=43) gave the correct answer, and the remaining 7.55% (n=8) did not respond. After the training, the results showed a significant positive shift—87.74% (n=93) gave the correct answer, and the remaining 12.26% (n=13) responded incorrectly. This distribution is graphically illustrated in Figure 31.

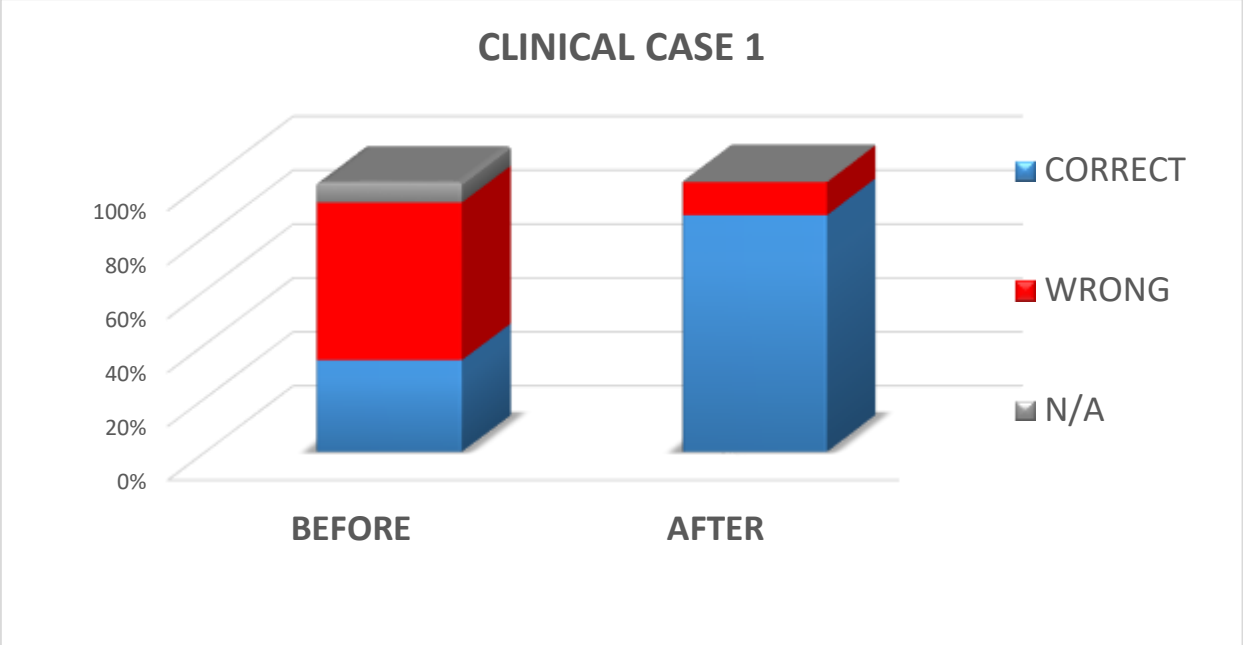

Figure 31. Dynamics in the responses to clinical case 1

Clinical Case No. 2 involves a patient who has attempted suicide by ingesting medication. In Survey "A," 64.15% (n=68) of participants correctly indicated that the patient should be transported to the Emergency Medical Unit (EMU) for referral to a Clinical Toxicology clinic. 26.42% (n=28) incorrectly suggested hospitalization in a Psychiatric Clinic or outpatient follow-up, and 9.43% (n=10) were unsure or did not provide an answer. After the training, the results became definitive—98.11% (n=104) correctly determined the appropriate course of action, while only 1.89% (n=2) were unable or unwilling to provide a correct response. This distribution is illustrated graphically in Figure 32.

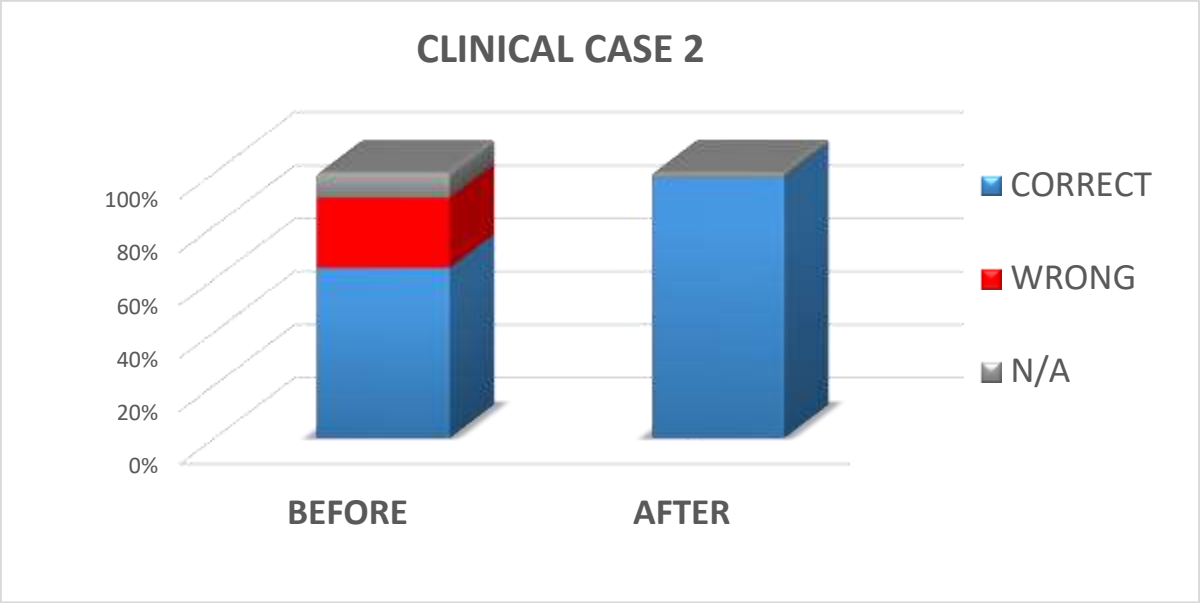

Figure 32. Dynamics in the Responses to Clinical Case 2

Clinical Case No. 3 involves a patient exhibiting extremely severe aggressive behavior as a result of psychoactive substance (PAS) use. The results from the preliminary survey show a clear predominance of incorrect referrals—80.19% (n=85) directed the patient to a psychiatric facility. Only 7.55% (n=8) correctly indicated that the patient should be referred to a toxicology unit, while 12.26% (n=13) were unable or unwilling to provide an answer. After the training, the results shifted dramatically—88.68% (n=94) of participants gave the correct answer, 9.43% (n=10) gave an incorrect answer, and only 1.89% (n=2) did not respond or were unsure. This distribution is graphically presented in Figure 33.

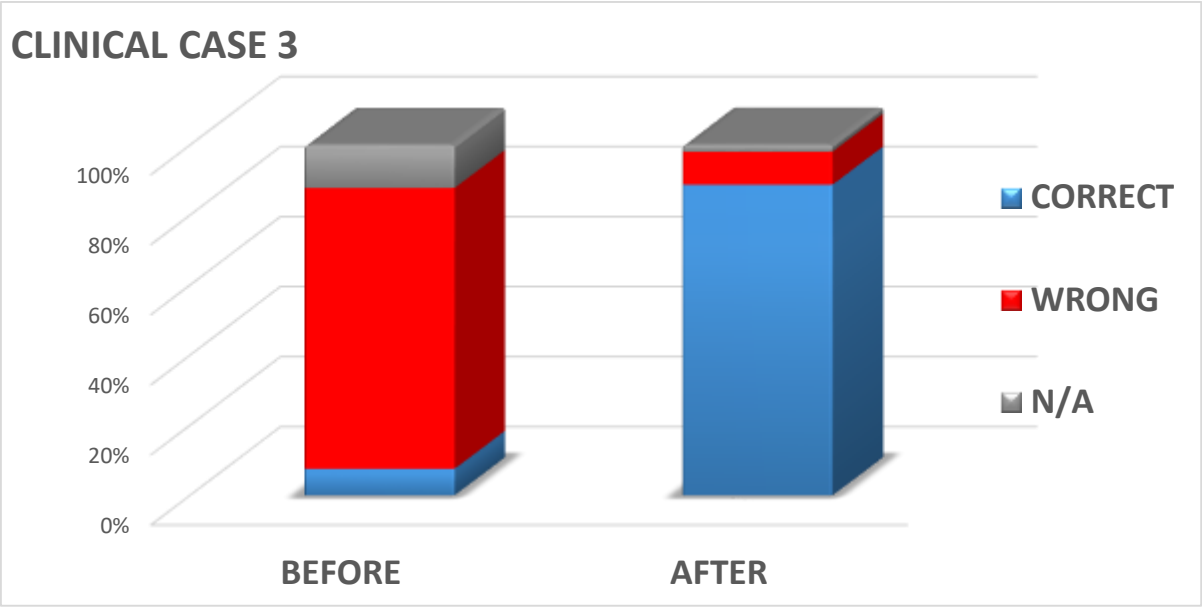

Figure 33. Dynamics in the Responses to Clinical Case 3

All participants in the training reported that they had improved their knowledge and skills in managing emergency psychiatric patients. The average rating given by the participants was 9.5 on a 10-point scale.

All participants clearly expressed their willingness to take part in similar types of training that would enhance their qualifications not only in psychiatry but also in other medical specialties.

5.3. DISCUSSION OF THE RESULTS IN RELATION TO THE SET GOAL AND OBJECTIVES

5.3.1. DISCUSSION OF THE RESULTS FROM THE ANALYSIS OF EMERGENCY PSYCHIATRIC ADMISSIONS IN THE PLEVEN REGION FOR THE PERIOD 01.01.2021–31.12.2023

Emergency psychiatric admissions in the Pleven region were concentrated 95–99% at UMHAT "Dr. Georgi Stranski" during the analyzed period. A total of 793 individuals were hospitalized. A dynamic increase in emergency hospitalizations is observed—from 200 in 2021, to 275 in 2022 (an increase of 37.50%), and 318 in 2023 (an increase of 59.00% compared to 2021). This negative trend results from the complex influence of numerous and diverse factors. Inevitably, one of these is the COVID-19 pandemic. On March 11, 2020, the WHO declared the start of the pandemic, and its end was announced on May 5, 2023, although in Bulgaria, the state of emergency was lifted on March 22, 2022. On one hand, people with psychiatric disorders, driven by fear of infection, often did not seek timely medical help; on the other, restrictions on hospital admissions—such as mandatory quarantine and negative test requirements—led to a reduction in psychiatric hospitalizations. Unfortunately, this had negative consequences: psychiatric symptoms worsened, and patients reached psychiatric facilities in significantly poorer condition compared to earlier episodes.

The cohort of individuals who tested positive for COVID-19 and had a psychiatric disorder was often subjected to unnecessary restrictions—driven by the stigma of mental illness, COVID wards often refused to treat them, leading to complications in psychiatric wards, which had to create separate COVID sectors. Our observation clearly indicates that patients with psychiatric disorders generally experienced milder COVID-19 illness, which correlates with studies suggesting a protective effect of psychopharmacotherapy (Rodrigo Macardo-Viera, 2025).

Gender distribution shows a trend toward an increasing proportion of women—from 34.00% in 2021, to 39.30% in 2022, and 40.30% in 2023—at the expense of a decreasing share of men: from 66.00% in 2021, to 60.70% in 2022, and 59.70% in 2023. Overall, men are hospitalized more frequently than women, which can be attributed to gender-specific characteristics and the typical course of psychiatric illnesses. These findings are supported by various studies (Dyer CB, 1995 and Keller Sh, 2023).

As for the average age of emergency psychiatric patients during the three-year study period, there is a significant left-skewed distribution, indicating a predominance of younger patients. This can be explained by the nature and typical onset of psychiatric disorders, and these data are consistent with a study conducted in Italy by Marzola E. et al. (2022).

Regarding diagnostic distribution, schizophrenia is overwhelmingly the most common reason for emergency hospitalization—accounting for 52%. It is followed by bipolar affective disorder (9%), behavioral disorders due to alcohol and/or psychoactive substance use (8%), and organic disorders and intellectual disability (around 5%). There is no significant dynamic in the relative distribution—schizophrenia remains dominant, while bipolar disorder, substance-related behavioral disorders, and organic conditions remain between 5–10%. Notably, depressive disorders—whether as a first episode or part of a recurrent course—are the least frequent, comprising up to 2.5% of all annual hospitalizations. This is likely due to the fact that individuals with depressive and/or anxiety disorders tend to be highly self-critical and generally adhere to outpatient treatment. Additionally, they often do not wish to be hospitalized. Our findings are supported by various international studies. It is important to clarify that this analysis considers the diagnostic profile of patients admitted on an emergency basis to the psychiatric clinics of the university hospital.

As for psychiatric consultations conducted in emergency departments, anxiety disorders are the most common cause of visits, with some authors reporting rates as high as 93% (Stoychev K. et al., 2012; Marzola E. et al., 2022). Dyer CB (1995) and Keller Sh. (2023) found that the most common reasons for psychiatric consultations in emergency departments are suicide attempts (28.9%) and first psychotic episodes (16.1%).

The duration of emergency hospitalizations is an important indicator—both for evaluating inpatient performance and assessing the clinical severity of cases. During the three-year study period, a trend was observed toward shorter average stays and an increase in patients hospitalized for 1–5 and 6–10 days, at the expense of those staying 16–20 days. Despite this trend, the highest percentage of hospitalizations remained in the 31–60 day range, which correlates with the understanding that emergency admissions typically involve more severe symptoms requiring longer stabilization.

These data should be interpreted with caution, as the "COVID-19 factor" may serve as a significant confounder. During the pandemic, hospitalizations were reduced, and patients—motivated by fear and uncertainty—often concealed their actual condition, which led to complications and worsening of symptoms, in turn requiring longer hospital stays.

Based on these results, we can describe the profile of the most typical emergency psychiatric patient admitted to UMHAT "Dr. Georgi Stranski" – Pleven. In a theoretical model, this would be a man aged 42–45 with a recurrent exacerbation of paranoid schizophrenia, admitted on an emergency basis, not for the first time, with an average hospital stay of about 40 days.

Using these data and mathematical modeling, it is possible to create theoretical but predictive models for planning hospital operations and developing personalized treatment plans aimed at optimizing care, enhancing resocialization, and improving patient adaptation.

5.3.2. DISCUSSION OF THE RESULTS FROM THE SCIENTIFIC STUDY WITH EMERGENCY UNIT STAFF IN THE PLEVEN REGION

Based on the data from the conducted scientific study, it becomes clear that professionals working in emergency structures—RCEMC, EMU, and urgent care—possess basic medical training, which proves insufficient when dealing with emergency psychiatric conditions.

A total of 106 individuals participated in the study, with an uneven gender distribution—35 men (33.01%) and 81 women (66.99%). This result can be explained by the tendency of women to more actively seek new knowledge and skills. On the other hand, it is important to consider that emergency psychiatric conditions are among the most dangerous for medical personnel, and as a more vulnerable and sensitive group, women seek security and protection through further qualification, enabling them to better predict and manage psychiatric conditions.

The age distribution is also uneven, showing a rightward shift in the normal curve, indicating an aging workforce. The average age of participants is 53.19 years. This confirms the negative trend in the age structure of healthcare workers, particularly in emergency services, where lack of motivation, high work intensity, and serious psycho-emotional stress are leading factors in the reluctance to work in such settings. A confounding factor may be that some doctors working in the EMU at UMHAT "Dr. Georgi Stranski" have only recently graduated and are under 30 years of age.

The workplace distribution of participants shows a dominance of staff from the RCEMC – Pleven: 89.62% (n=95), while the remaining 10.38% (n=11) work in the EMU. The organizational specifics of the Pleven region play a major role, as patients assessed as requiring emergency psychiatric hospitalization are referred by RCEMC teams directly to the psychiatric

clinics, not to the EMU. This significantly reduces the contact EMU staff have with emergency psychiatric cases. Consequently, physicians and health professionals in emergency departments show less interest in improving their qualifications for managing psychiatric emergencies.

In terms of professional roles, physicians dominate—nearly two-thirds of participants—60.38% (n=64), followed by physician assistants/paramedics—20.75% (n=22), and nurses/midwives—18.87% (n=20). According to data from the Ministry of Health, RCEMC staff include 1,134 physicians (40.23%), 1,476 paramedics/physician assistants (52.04%), 110 nurses (3.90%), and 108 midwives (3.83%). These differences stem from the current structure of RCEMC teams, which are composed of physician-led (resuscitation) and pre-physician-led (paramedic/assistant) teams. This may explain the higher interest among this cohort of medical professionals.

The cross-sectional analysis reveals that more than half of the physicians participating in the study lack a medical specialty—56.25% (n=36), just over one-third hold another specialty—37.50% (n=24), only 4.69% (n=3) have a recognized specialty in emergency medicine, and only one participant—1.56% (n=1)—holds recognized specialties in both emergency medicine and clinical toxicology. According to Ministry of Health data, 44.62% (n=506) of RCEMC physicians are without a specialty, and 55.38% (n=628) hold one. Of those, 5.73% (n=65) are certified in emergency medicine. These proportions should not be considered fully representative. On one hand, many RCEMC staff lack a specialty because regulations do not require one. On the other hand, a large portion (about 75%) of EMU staff are also without a specialty and are just beginning their specialization. Emergency medicine is among the most comprehensive specialties, and although legally required, it is difficult to find candidates willing to specialize in it.

Interestingly, there are physicians working at the RCEMC who specialize in psychiatry—3.13% (n=2). Although both are trained in managing psychiatric emergencies, both also participated in the training.

Professional experience shows a predominance of participants with between 5 and 30 years of work experience—together making up over 80% of the sample. It should be noted that many of those with up to 5 years of experience are EMU staff who will terminate their contracts after completing one year of service. This is due to the policy of UMHAT "Dr. Georgi Stranski" – Pleven, which requires one year of work in the EMU as a prerequisite for entry into a medical specialty training program. Additionally, many medical residents during their early career years often work extra shifts in the EMU or RCEMC for various reasons—mainly to earn additional income or gain clinical experience.

The duration of work in emergency medical sectors shows a significant left shift—30% have up to 5 years of experience, followed by 43% with 6 to 15 years. Emergency medicine is one of the most demanding, intense, and stressful specialties. It requires dedication and high levels of personal sacrifice. The work is exhausting, often performed under extremely difficult conditions, and is frequently underappreciated. The number of professionals in emergency medicine decreases as their experience increases, due to accumulating fatigue, dissatisfaction, and emotional burnout. This is one of the weak points of the Bulgarian healthcare system—the severe shortage of emergency doctors and the aging workforce.

Simultaneously, there is an emerging personnel crisis among physician assistants/paramedics, who form the backbone of emergency care. Each year, an insufficient number of physician assistants graduate, while many of the remaining feldshers are already of retirement age and increasingly leaving the system. On the other hand, the newly introduced paramedic specialty still lacks proper regulation and recognition, partly because a wide variety of institutions—ranging from accredited universities (e.g., Military Medical Academy – Sofia, MU – Plovdiv, Burgas University "Prof. Dr. Assen Zlatarov") to questionable training centers—offer programs in this field. The paramedic profession requires a highly specific and robust theoretical and practical foundation, which should be acquired in an academic setting over a sufficient duration. This creates an urgent need for a national strategy to reform emergency care by defining specific actions to preserve, develop, and adapt emergency medicine to modern standards and requirements.

All participants unanimously reported that emergency psychiatric cases are increasing. According to 72%, the cases have become more severe; 23% believe they have become milder, and 5% were unsure. Respondents with over 25 years of experience stated that prior to the closure of psychiatric dispensaries, emergency services were rarely called for psychiatric patients, which points to the past effectiveness of the psychiatric care system. Many respondents noted an increasing number of cases involving individuals with severe psychiatric diagnoses who are not receiving treatment, live in extremely poor social conditions, and lack family or social support.

Among the study participants, 64.15% (n=68) reported feeling unprepared to manage psychiatric emergencies, 15.09% (n=16) felt confident in handling such situations, and 20.75% (n=22) were uncertain. While these results are clear, it is important to note that this question is more representative of RCEMC workers than of EMU staff. The psychiatric admission system

in Pleven significantly limits EMU staff's exposure to psychiatric emergencies, as non-somatic psychiatric cases are referred directly to psychiatric clinics, bypassing the EMU

Of those working at RCEMC – Pleven and EMU at UMHAT "Dr. Georgi Stranski", 73.58% (n=78) reported encountering between 1 and 5 psychiatric emergencies per month. This number is difficult to predict, as many variables influence it—seasonality being one major factor. For example, affective disorders tend to worsen in spring and autumn, while psychoses are more common in summer. Social issues also play a role—individuals with severe social problems are often hospitalized in psychiatric wards as a last resort.

One of the key daily tasks in emergency settings is the proper recognition and triage of emergency cases to the correct medical specialty. This can be particularly difficult in psychiatric emergencies. Poor training, overlapping somatic symptoms, and pressure from family members can complicate the assessment of whether a psychiatric condition truly constitutes an emergency.

Participants in our study were presented with a list of 11 conditions and asked to identify which were psychiatric emergencies. The results included both correct and incorrect classifications. Survey A showed relatively uniform frequency distribution for correct identifications. The highest rate of misclassification was for two conditions wrongly identified as psychiatric emergencies—38.68%. After the training (Survey B), results improved significantly: over half (56.60%) correctly identified all five emergency psychiatric conditions, and 48.11% made no errors.

Statistical analysis using the Student's t-test confirmed a statistically significant difference in results ($p < 0.05$), both in terms of correct and incorrect answers before and after the training seminar—highlighting the effectiveness of the educational intervention.

These findings practically demonstrate the core objective of the study: to show the lack of preparedness and the importance of improving qualifications through targeted training seminars.

Another critical issue beyond recognizing psychiatric emergencies is their actual management. This process can be a mystery for healthcare professionals without sufficient, quality training. When asked to identify the approved methods for managing psychomotor agitation or other psychiatric conditions, 17.92% (n=19) of participants selected medication as the only option. A large proportion—65.09% (n=69)—included isolation and immobilization as extreme but permitted methods for preventing aggression and self-harm. A positive trend was observed in the diversification of management strategies. On the other hand, there was no notable rate of incorrect responses—both before and after the training, incorrect selections

remained low. Post-training, these errors were reduced to a minimum—103 participants (97.17%) made no incorrect selections.

All of this, related to emergency medical experience, indicates empirically developed appropriate principles and behavioral models—those with longer work experience in emergency settings have developed effective practices for managing emergency psychiatric patients.

The psychopharmacological arsenal used to manage emergency psychiatric patients is often a source of serious concern and barriers for emergency medical staff, leading to reduced utilization. When asked which medications they would use to manage psychiatric emergencies, participants in the study significantly restricted their choices, prioritizing benzodiazepines and bromide salts, while much less frequently indicating antipsychotics such as chlorpromazine and haloperidol. A total of 43.24% listed only one medication, while 54.72% indicated two. About 10% mentioned naloxone as a drug of choice, although its primary use is in emergency toxicology rather than in the management of psychiatric emergencies.

Regarding incorrectly identified medications for psychiatric emergencies, Student's t-test statistical analysis confirmed a statistically significant improvement ($p<0.05$) in results after the training seminar, which indicates the effectiveness of the training.

The cautious behavior surrounding whether and which medication to use stems from uncertainty and concerns over potentially serious adverse drug reactions. At present, many practical and concrete guidelines exist for proper and comprehensive therapeutic behavior, which could benefit emergency care providers.

Non-pharmacological methods for managing psychiatric emergencies are of great importance but unfortunately have low representation—largely due to lack of awareness, resulting in their infrequent application. Emergency personnel are not familiar with possible non-medication-based approaches—only 33.02% had knowledge and correctly identified the use of psychotherapeutic techniques. On the other hand, 79.25% gave incorrect answers, and 16.04% either gave no answer or stated they did not know or were unsure. Following the training, awareness increased significantly—98.11% correctly recognized psychotherapeutic methods. The lack of theoretical training and practical experience is at the root of these results, indicating a strong need for targeted educational efforts.

In terms of knowledge and skills regarding restraint and isolation of psychiatric patients, a higher baseline level of familiarity was demonstrated—before the training, 80.19% were aware of the protocols. After the training, this rose to 98.11%.

Managing psychiatric emergencies is one of the greatest challenges facing emergency personnel. Experience may lead to some degree of routine when it comes to administering psychopharmacological agents. Nevertheless, a high degree of uncertainty and caution in their use persists. The specific nature of non-pharmacological methods makes them difficult to demonstrate, let alone apply, in acute psychiatric cases. Deeper training is necessary to gain practical skills for managing psychiatric emergencies effectively.

Forensic psychiatric issues that most often concern emergency medical professionals involve who is authorized to order involuntary hospitalization and what is the maximum period a patient can be held in a facility without informed consent. Emergency physicians are often confused when encountering patients with a psychiatric diagnosis who, at the time of examination, pose no increased risk of aggression or self-harm. Simultaneously, strong pressure may come from relatives, who may exaggerate symptoms or claim that the legal system has mandated hospitalization.

When asked “Who can order involuntary hospitalization in a psychiatric facility?” 52.83% incorrectly identified a role/structure other than the court before training, while after the training, 95.28% gave the correct answer.

A similar distribution was seen regarding the maximum legal period a person can be hospitalized without consent. Before the training, 50.94% gave an incorrect answer. After training, 94.34% correctly identified the legal limit for hospitalization without the patient’s consent.

Lack of knowledge about regulations, along with other confounding factors—such as influence from family members—are among the reasons for a portion of hospitalizations in psychiatric wards being falsely classified as emergencies.На участниците в научното изследване бяха предоставени 3 клинични случая, които да разпознаят и да определят стратегия за поведение.

Three clinical cases were presented to the participants in the scientific study, which they were asked to identify and determine an appropriate management strategy.

The first case focused on a situation lacking actual emergency status, but the patient’s relatives insisted that the person be transported to a healthcare facility. Results prior to the training showed that 40.57% of participants gave the correct answer. After the training, 87.74% responded correctly. This case illustrates frequent and unnecessary attempts to hospitalize individuals stigmatized by psychiatry—“once diagnosed, always diagnosed.” These are not isolated incidents but a common practice in which frontline physicians, pressured and fearing they may appear incompetent or uninformed, readily agree with the patient’s family and, under

the guise of real or formal care, direct the person to psychiatric hospitalization. Moreover, individuals with psychiatric disorders, subjected to daily psychological pressure from relatives asserting their lives are meaningless and parasitic, eventually become financially and socially dependent on their pseudo-caregivers and obediently accept everything, including unnecessary hospitalization, for the sake of retaining someone to care for them. The significant depressive demoralization resulting from the chronic nature of psychiatric disorders reduces their logical resistance to abuse, making them "compliant."

The second case involved a patient who had made a failed suicide attempt by ingesting medications. In Survey A, 64.15% of participants correctly indicated that the patient should be transported to an Emergency Medical Department (EMD) for referral to a Clinical Toxicology Clinic. Only 26.42% incorrectly suggested psychiatric hospitalization or outpatient psychiatric follow-up, and 9.43% were unsure or gave no response. After the training, results improved significantly, with 98.11% selecting the correct approach. This case reflects everyday emergency medical practice. Unfortunately, the stigma of psychiatry again led to an incorrect approach in one-quarter of cases. The emergency aspect of the situation is linked to the patient's behavior, but the mechanism of the event requires that immediate risk and medical care be focused on the specific act—entirely within the realm of toxicology, not psychiatry. Other suicide attempts follow the same logic—management should be based on the pathogenesis, not etiology. Accordingly, injuries should be treated in the relevant departments: wounds in surgical/plastic surgery/trauma clinics; ingestion of toxic substances in toxicology units, and when needed, dialysis centers; upper/lower airway injuries in ENT departments. The guiding principle should be that emergency responders detach from the psychiatric history and focus on the immediate life-threatening mechanism.

The third case presented a patient exhibiting extremely severe aggression following substance use. Initial survey results showed an incorrect referral to psychiatric care in 80.19% of responses. After training, this reversed: 88.68% of participants gave the correct answer. This case again highlights frequent and systematic practices that are clearly not in the best interest of the patient's life and health. The incorrect management stemmed from interpreting aggressive and disorganized behavior as purely psychiatric, whereas a significant portion is due to somatic suffering, especially affecting the central nervous system. Such cases, lacking sufficient information, may lead to various ethical and legal problems. For example, if insufficient data are provided about the patient's state prior to their aggressive behavior, involuntary psychiatric hospitalization could later be grounds for legal claims of malpractice or even intentional harm.

That is why the psychiatric ward team relies on an accurate initial assessment from emergency personnel, including a thorough evaluation of the scene where the patient was found.

All training participants unanimously stated that their knowledge and skills for managing emergency psychiatric patients significantly improved. Many shared they learned things they had never known or been able to apply before.

The average score given by participants for the training was 9.5 out of 10—a remarkably high rating. Most noted that such training not only enhances their qualifications but also boosts their confidence, which is a vital aspect of any emergency medic's overall performance. According to the participants, highlighting practical situations had a particularly positive impact relevant to daily practice.

All participants clearly expressed their desire to participate in similar training to improve their qualifications not only in psychiatric care but also across other medical specialties.

Currently, in Bulgaria, the predominant model is that of a consultant psychiatrist who, when necessary, supports, directs, and determines the strategy for handling psychiatric emergencies in emergency rooms and other hospital structures. This psychiatrist-consultant also makes the final decision on whether treatment in a psychiatric facility is indicated. However, due to the structure of Bulgaria’s healthcare map, this model proves extremely difficult to implement under current conditions. There is a lack of competent professionals who can logistically reach each Emergency Department (ED) across the country in time. The ongoing staff shortages also hinder the realization of other models proposed by Stoichev K. (2012)—such as establishing a psychiatric sector within EDs or independent psychiatric emergency centers. Another complicating factor is the growing frequency of emergencies presenting with behavioral changes that are not of psychiatric origin. In an ideal setting, a hybrid model would be applicable—designating several psychiatric emergency sectors within EDs in major cities (Sofia, Pleven, Ruse, Varna, Burgas, Stara Zagora, Plovdiv), along with the provision of consultant psychiatrists in all EDs of regional hospitals.

6. CONCLUSIONS

1. The Psychiatric Clinics of "Dr. Georgi Stranski" University Multiprofile Hospital for Active Treatment (UMHAT) – Pleven are the only facilities in Pleven Region that admit emergency psychiatric patients. A total of 793 individuals were hospitalized over the 3-year period (2021–2023), with a yearly increase in emergency hospitalizations.
2. The gender distribution shows an increase in the relative share of women compared to men—from 34% to 40%.
3. The age range is from 14 to 85 years for men and from 16 to 85 years for women. The average age for the observed period remained unchanged across gender and years—approximately 42 years.
4. Schizophrenia dominates the nosological structure (52%), followed by bipolar affective disorder (9%), mental and behavioral disorders due to alcohol and/or psychoactive substance use (8%), organic brain damage (7%), and intellectual disability (4%).
5. Over the three-year period, between 25% and 33% of emergency hospitalizations were first-time admissions.
6. The length of stay analysis indicates that the largest proportion of hospitalizations are between 31 and 60 days, although this is decreasing in favor of 11–15-day stays.
7. Based on a theoretical model, the most common emergency psychiatric patient would be a 42–45-year-old male with a long history of paranoid schizophrenia, hospitalized in crisis (not for the first time), with a stay of approximately 40 days.
8. Based on these data, mathematical modeling can help create predictive models for hospital planning and the development of personalized treatment plans to optimize care and promote resocialization and adaptation.
9. The research shows that staff in emergency departments—ambulance services (EMCC), emergency hospital departments (EDs), and urgent care—have a basic medical background that proves insufficient when managing psychiatric emergencies.
10. The study involved 106 participants, of whom 67% were women. The age distribution was skewed toward older participants, with an average age of 53.19 years.
11. The majority of participants worked at EMCC–Pleven (89.62%), and most were physicians (60.38%).
12. Cross-sectional analysis revealed that over half of the physicians had no specialty or had a specialty other than emergency medicine, with only 4.69% holding a recognized emergency medicine specialty.

13. The majority of participants had between 5 and 30 years of work experience—together comprising over 80% of the group.
14. All participants unanimously reported that psychiatric emergencies are increasing and becoming more severe.
15. 64.15% of respondents indicated they do not feel prepared to manage emergency psychiatric patients.
16. Around 75% of staff at EMCC–Pleven and the hospital ED report encountering 1 to 5 emergency psychiatric patients monthly.
17. Before the training seminar, not all psychiatric emergencies were correctly identified, and many non-psychiatric emergencies were mistakenly classified as such. After training, over half correctly identified all five key emergency psychiatric conditions.
18. Prior to training, many emergency physicians were unfamiliar with the full range of available and appropriate psychopharmacological tools. After training, they reported greater confidence and a broader selection of treatment options.
19. Non-pharmacological approaches to psychiatric emergencies are highly significant but underutilized due to lack of awareness. After the seminar, a high level of awareness and readiness to apply these methods was reported.
20. Knowledge and skills related to immobilization and restraint of psychiatric patients were significantly improved post-training.
21. Legal-psychiatric questions—such as who can mandate involuntary hospitalization and what the maximum duration is without consent—were unclear before training. Afterward, they were clearly understood and correctly applied.
22. The lack of knowledge and skills contributes to frequent and unnecessary attempts to hospitalize individuals stigmatized by psychiatric diagnoses. This can improve significantly with practical training.
23. A patient's behavior may indicate an emergency, but medical care must focus on the underlying cause, which may not be psychiatric but rather somatic.
24. The average rating for the training was 9.5 out of 10—an extremely high score reflecting its benefits.
25. All participants expressed a strong interest in attending future training sessions—not only in psychiatry, but also in other areas of medical specialization.

7. RECOMMENDATIONS

RECOMMENDATIONS TO THE MINISTRY OF HEALTH

Targeted, consistent, and timely actions by the Ministry are needed to improve the quality of training for the management of psychiatric emergencies.

Attracting young physicians to enroll in the Emergency Medicine specialty through incentives such as simplified enrollment procedures for state-funded residency positions, additional financial motivation, and others.

Launching public education programs aimed at improving health literacy and awareness regarding mental health patients.

RECOMMENDATIONS TO PROFESSIONAL ORGANIZATIONS (BULGARIAN MEDICAL ASSOCIATION, BULGARIAN ASSOCIATION OF HEALTH CARE PROFESSIONALS, BULGARIAN SOCIETY OF EMERGENCY MEDICINE, AND BULGARIAN PSYCHIATRIC ASSOCIATION)

It is necessary to update the curricula and training courses in both initial and continuing education, with a focus on recognizing and managing psychiatric emergencies, as well as depressive and anxiety disorders due to their significant social and economic burden.

Continuing education should ideally become mandatory, or completion of such courses should offer specific professional or financial incentives.

General practitioners should be encouraged to acquire competencies for assessing psychiatric patients in emergency situations.

RECOMMENDATIONS TO MEDICAL UNIVERSITIES

Where possible, increase or introduce dedicated hours in the curriculum under the topic “Recognition and Management of Psychiatric Emergencies” for students in all master’s and bachelor’s degree programs, considering their key role in the initial assessment and management of emergency psychiatric patients.

8. CONTRIBUTIONS

CONTRIBUTIONS OF SCIENTIFIC AND ORIGINAL CHARACTER

The frequency, demographic characteristics, and profile of emergency psychiatric cases hospitalized in the Psychiatry Clinics of University Hospital “Dr. Georgi Stranski” – Pleven over a three-year period (2020–2023) have been established.

For the first time in the Republic of Bulgaria, a study has been conducted assessing both the theoretical and practical preparedness of emergency medical personnel to manage psychiatric emergency patients.

This research is the first of its kind in Bulgarian practice to utilize a structured educational module aimed at increasing the readiness of emergency staff to respond to psychiatric emergencies.

CONTRIBUTIONS OF PRACTICAL/APPLIED CHARACTER

Based on the results of the emergency admission analysis, a prevention and prophylactic program can be developed targeting the most vulnerable groups of patients with mental disorders.

The results provide a foundation for designing a long-term training and qualification program for emergency healthcare professionals in the management of psychiatric emergencies.

This qualification enhancement model should be expanded and adapted for all categories of healthcare personnel and implemented regularly, due to its demonstrated benefits and positive outcomes.

9. PUBLICATIONS AND PARTICIPATIONS IN SCIENTIFIC EVENTS RELATED TO THE DISSERTATION

FULL-TEXT PUBLICATIONS

1. **Тодоров А.,** Цанкова В., Костов К., Димитрова-Илиева Е., Чумпалова-Тумбева П. ПРЕДИЗВИКАТЕЛСТВОТО СПЕШНА ПСИХИАТРИЯ. *ЮБИЛЕЙНА НАУЧНА КОНФЕРЕНЦИЯ* С МЕЖДУНАРОДНО УЧАСТИЕ *"50 години Медицинско Образование и Наука в Плевен" 01 – 03 Ноември 2024 ПЛЕВЕН*: доклади /под ред. на ДОБРОМИР ДИМИТРОВ/ 2024; стр. 353-357; ISBN 978-954-756-346-9;

2. **Aleksandar Todorov.** ANALYSIS OF EMERGENCY PSYCHIATRIC ADMISSIONS IN PLEVEN DISTRICT FOR THE PERIOD 2021-2023. *International Journal of Science and Research (IJSR)* ISSN: 2319-7064 ;

3. **ТОДОРОВ А.А.**, ЦАНКОВА В. СВ., КОСТОВ К. Б., ЧУМПАЛОВА-ТУМБЕВА П. Г. ПОДГОТОВКА НА РАБОТЕЩИТЕ В СИСТЕМАТА НА СПЕШНА ПОМОЩ ЗА ПРЕДИЗВИКАТЕЛСТВОТО „СПЕШЕН ПСИХИАТРИЧЕН ПАЦИЕНТ". *БЪЛГАРСКО СПИСАНИЕ ЗА ПСИХИАТРИЯ.* 2025 (под печат);

PARTICIPATIONS IN SCIENTIFIC FORUMS

1. **Aleksandar Todorov**, Vesela Tzankova, Kamen Kostov, Emiliya Dimitrova-Ilieva, Petranka Chumpalova-Tumbeva THE CHALLENGE OF EMERGENCY PSYCHIATRY. ***Юбилейна научна сесия 20 години Факултет „Обществено здраве", посветена на 50 – годишнината на Медицински университет – Плевен в рамките на JUBILEE SCIENTIFIC CONFERENCE WITH INTERNATIONAL PARTICIPATION "50 Years of Medical Education and Science in Pleven" 01 – 03 November 2024.***

2. **A. Todorov**, E. Dimitrova-Ilieva, V. Tzankova, K. Kostov, G. Dogancali-Yancheva, S. Kapinchev, I. Veleva, P. Chumpalova-Tumbeva. Sociodempgraphic characteristics defining the profile of an emergency psychiatric patient ***37th ECNP Congress 21-24 September 2024, Milano, Italy***.

3. **Todorov A. A.**, Chumpalova-Tumbeva P. G., Dimitrova-Ilieva E. M., Stoimenova-Popova M. I. The Significance of Using Scales and Questionnaires in the Evaluation of a Psychiatric Patient in Case of Emergency ***6-та Национална конференция „Обществено здраве: предизвикателства пред здравната система“ – 26-27.05.2023, Плевен, България***