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***FORENSIC PSYCHIATRIC PATIENT PROFILES.
TRAITS, CORRELATIONS AND EVOLUTIONARY TRENDS.***
PhD THESIS SUMMARY

PhD supervisor:

PROF. UNIV. DR. MANEA MIRELA

PhD student:

PARFENE – BANU I. MONICA – ELENA

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Introduction

Globally, the prevalence of mental disorders continues to grow. [1] At the same time, a significant increase in the incidence of violent behavior [2, 3] and criminality was observed, both in the general population and among patients diagnosed with mental disorders [4 - 6], including females. [7, 8] Consecutively, a substantial increase in the number of patients referred to forensic psychiatric institutions has been reported internationally. [9 - 13] Having these aspects in mind, we believe that the execution of the medical safety measures is a current issue in forensic psychiatry.

The alarming increase in the number of patients admitted for the execution of the safety measure according to article 110 of the Romanian Criminal Code was also noticed in Săpoca Psychiatry and Safety Measures Hospital (S.P.M.S. Săpoca). Associated with the low discharge rate, this has led to the overcrowding of dedicated wards. This context represents the motivation for choosing this research topic. The causes of this trend have to be clarified and solutions for the users of forensic psychiatric services that require long-term care need to be identified. Moreover, there are few epidemiological data available in the Romanian literature in the field of forensic psychiatry and those relating to female forensic inpatients are non-existent.

I. THE GENERAL PART

Structured in two chapters, the first part of the thesis reflects the theoretical foundation of the research and presents the current state of knowledge in the field.

Chapter 1. Mental disorders and criminal behavior

The chapter contains the definition of mental health and briefly presents the major impact that ill mental health has on the individual, his caregivers and society in general.

Next, the most important classification systems used in psychiatry and the main diagnostic groups according to the International Classification of Diseases (ICD-10) are presented. The chapter concludes with a review of the complex connections between violence, criminality and major mental disorders.

Chapter 2. Forensic implications of mental disorders

The chapter offers an overall look at forensic psychiatry and includes the methodological aspects of performing the forensic psychiatric expertise (EMLP) and the management of mentally disordered offenders in our country, pointing out the legislative similarities and differences between Romania and other countries, identified by reviewing the existing literature, with a focus on the legal systems of the European Union (EU) Member States.

The chapter also includes a brief descriptive statistic of EMLP conducted in Romania in 2019.

II. PERSONAL CONTRIBUTIONS

3. Working hypothesis and general objectives

This thesis aims to analyze the temporal evolution of the forensic psychiatric population in the largest capacity safety measures psychiatric hospital in the country, as well as to highlight the traits of some of its subpopulations: female patients and patients requiring long periods of hospitalization. The thesis comprises three studies.

The first study aims to identify the socio-demographic, clinical and legal traits of the forensic psychiatric patients admitted to S.P.M.S. Săpoca between 2008 and 2018 and to analyze their evolution over time, following the admission and discharge rates, the main psychiatric diagnoses, their criminal offenses and the court decisions regarding the replacement or termination of the safety measure for the discharged patients.

The second study aims to analyze the socio-demographic, clinical and legal traits of the female inpatients and to compare them with those of the male inpatients.

The third study aims to analyze the socio-demographic, clinical and legal traits of the patients who required long periods of hospitalization (> 5 years) and to compare them with those of the patients who were hospitalized for shorter periods of time (< 5 years).

Specific objectives:

- The characterization of the studied groups using socio-demographic, clinical and legal variables;
- The analysis of the temporal evolution of the forensic psychiatric population of S.P.M.S Săpoca during the study period;
- The identification of the female inpatients' traits and the potential gender differences;
- The identification of the profile of the patient who requires a long period of hospitalization and of the potential differences between them and those who were hospitalized for shorter periods of time;
- The identification of possible correlations between the considered variables, depending on the study.

To achieve the research objectives, the following hypotheses were issued:

Study 1 (Study on the evolution of the forensic psychiatric population of S.P.M.S. Săpoca):

- **Hypothesis 1:** The identified patient profile will be similar to that outlined by previous international studies;
- **Hypothesis 2:** There is an increase in the number of forensic psychiatric inpatients;
- **Hypothesis 3:** The main psychiatric diagnosis correlates with the perpetration of violence;
- **Hypothesis 4:** Having a criminal record correlates with the severity of the offense.

Study 2 (Comparative study on the socio-demographic, clinical and legal traits of female and male forensic psychiatric inpatients):

- **Hypothesis 1:** The profile of the female forensic psychiatric inpatient differs significantly from that of the male inpatient;
- **Hypothesis 2:** Compared to men, women are less likely to commit violent offenses.

Study 3 (Factors associated with length of hospital stay among adult patients in the execution of the safety measure of medical hospitalization).

- **Hypothesis 1:** The length of hospitalization correlates with the severity of the offense and social support.

4. General research methodology

To achieve the research objectives and to verify the hypotheses, we conducted three analytical, observational, cohort, retrospective and cross-sectional studies, which included all adult patients admitted to S.P.M.S. Săpoca between January 1st 2008 and December 31st 2018 according to Article 110 of the Romanian Criminal Code, based on a final criminal sentence. To ensure that all patients were monitored for at least one year, discharges were followed up until December 31st 2019. Patients hospitalized involuntarily in accordance with Law 487/2002 and those for whom temporary hospitalization for the medico-legal expertise was ordered according to Criminal Procedure Code, were excluded.

Data collection was carried out in 2019, and the study complied with the ethical principles of medical research, as well as the national legislation regarding the confidentiality of the information and the protection of personal data.

For each included patient, a form designed for the purpose of the research containing a numerical case identification code, the initials of the name, the date of admission and discharge, where available, was completed.

Discharges performed in order to investigate or treat medical or surgical pathologies that exceeded the level of competence or endowment of the hospital were not taken into account since the execution of the safety measure wasn't suspended during that time.

Based on the review of the literature, several socio-demographic, clinical and legal variables were identified and collected from the hospital's electronic database, clinical files, legal files and social assessment forms.

The data was entered into a Microsoft Excel 2019 database. After completing data verification and variable encoding, statistical analysis was performed using Statistical Packet for Social Science (SPSS) for Windows, version 20.

For the statistical analysis, depending on the type of variables, contingency tables, the Chi-square test (χ^2) and one-way ANOVA (analysis of variance) technique were used, with a complementary procedure for multiple comparisons (Tukey method) in order to determine the differences between categories when the ANOVA result was statistically significant. The significance threshold α was 0.05. Therefore, a calculated $p \leq .05$ value was considered statistically significant, at a 95% confidence interval (C.I.).

5. Study on the evolution of the forensic psychiatric population of S.P.M.S. Săpoca

5.1. Introduction (working hypothesis and specific objectives)

Despite the different legal provisions and procedures that apply to offenders diagnosed with mental disorders and the regional variations of crime rates, the increase in the number of forensic psychiatric inpatients is a common international phenomenon. [14, 15]

The main objective of this study was to analyze the temporal evolution of the forensic psychiatric population of S.P.M.S. Săpoca, following the hospitalization and discharge rates, the main psychiatric diagnoses, the committed offenses and the court decisions regarding the replacement or termination of the safety measure for the discharged patients.

As a secondary objective, we set out to investigate the possible associations between the clinical and legal variables.

The third objective of the study was to determine whether the profile of the forensic psychiatric patient admitted to S.P.M.S. Săpoca is in accordance with the literature.

5.2. Patients and methods

Of the total 842 patients admitted from January 1st 2008 to December 31st 2018 in one of the 3 dedicated wards of S.P.M.S. Săpoca, 192 were excluded according to the criteria described in Chapter 4. The final cohort included 650 patients.

5.3. Results

The patients' socio-demographic, clinical, and legal traits are summarized in Tables 5.1, 5.2 and 5.3.

The majority of the patients included in the study were male (84%) and lived in an urban area (52%). Most of the patients had a disability allowance (37.38%) or were retired (28.62%). Concerning the marital status and housing situation, two-thirds were single (62.46%) at the time of hospitalization and the majority (44.15%) lived with their parents prior to admission.

Table 5.1. Socio-demographic traits

Sex (n, %) - male	546, 84%
Age (mean ± SD)	44.33 ± 12.41 years
Area of residence (n, %) - urban	336, 52%
Professional status (n, %)	
Social aid	20, 3.08%
Unemployed	178, 27.38%
Disability allowance	243, 37.38%
Retired	186, 28.62%
Employed	23, 3.54%
Marital status (n, %)	
Married	57, 8.77%
Cohabiting	27, 4.15%
Divorced	130, 20.00%
Single	406, 62.46%
Widower	30, 4.62%
Education (n, %)	
No education	45, 6.92%
Primary education	63, 9.69%
Middle school	216, 33.23%
High school	151, 23.23%
Post-secondary	4, 0.62%
Vocational	116, 17.85%
Special	13, 2.00%
Superior studies	40, 6.15%
Postgraduate studies	2, 0.31%
Housing situation (n, %)	
Living alone	182, 28.00%
With life partner	57, 8.77%
With parents	287, 44.15%
With other relatives	65, 10.00%
With other persons, without kinship	39, 6.00%
Without housing	20, 3.08%
With offspring (n, %)	238, 36.62%

The most common main psychiatric diagnoses were paranoid schizophrenia (39.38%), organic personality disorder (11.53%) and moderate mental retardation (8.61%). More than half (55.69%) of the patients included in the study had at least one comorbidity, 36.61% had a history of alcohol use and the majority (85.53%) had a psychiatric history.

Table 5.2. Clinical traits

Diagnostic group (n, %)	
F00 - F03	20, 3.08%
F04 - F09	79, 12.15%
F10 - F19	7, 1.08%
F20 - F29	362, 55.69%
F30 - F39	38, 5.85%
F60 - F69	58, 8.92%
F70 - F79	86, 13.23%
Medical comorbidity (n, %)	362, 55.69%
Alcohol misuse (n, %)	238, 36.61%
Psychiatric history (n, %)	556, 85.53%

Regarding the legal traits, about two-thirds (60.24%) of the patients had a criminal record. The most frequently committed offenses were non-compliance with court decisions (18.3%) - mainly the replacement of the safety measure of mandatory treatment (article 109 of the Criminal code), hitting or other violence (13.23%) and threatening (8.46%). The most common type of offense was offenses against the person (48.15%), followed by offenses against property (23.38%) and the administration of justice (18.77%). More than half of the patients (59.23%) committed non-violent offenses, and in terms of severity, 38% of the patients committed minor offenses, 46% moderate offenses and 16% severe offenses.

Table 5.3. Legal traits

Type of offense (n, %)	
Against the authorities	19, 2.92%
Against the administration of justice	122, 18.77%
Against public order and peace	27, 4.15%
Against property	152, 23.38%
Against the person	313, 48.15%
Against public safety	9, 1.38%
Other	8, 1.23%
Violence (n, %) - without	385, 59.23%
Severity of the offense (n, %)	
Minor	247, 38%
Moderate	297, 46%
Severe	106, 16%
Criminal history (n, %)	391, 60.24%

The diagnostic group was significantly correlated with the type of crime ($p < .001$) and violence ($p = .001$). Patients diagnosed with schizophrenia and dementia committed offenses against the person more frequently, patients with organic mental disorders, mood disorders and mental retardation - against property, those with personality disorders - against the

administration of justice, while patients with substance use disorders - against public order and peace. Patients with diagnoses from the F20 - F29 and F70 - 79 groups committed violent offenses more often than the other diagnostic groups. The diagnostic group was also significantly associated with homicide and related offenses - attempted homicide, fatal blows or injuries, manslaughter ($p = .009$), with patients diagnosed with dementia, schizophrenia and mental retardation being more likely to commit such offenses. In contrast, no statistical association was identified between the diagnostic group and arson ($p = .070$).

Violence was significantly correlated with alcohol misuse ($p = .011$), patients with a history of alcohol misuse were more likely to commit violent offenses. A statistically significant association between violence and the existence of a criminal record was also identified ($p < .001$). Patients with a criminal record were more likely to commit violent offenses.

The severity of the offense was significantly correlated with the presence of a criminal record ($p < .001$). Patients with a criminal record were more likely to commit severe offenses than those without a criminal record.

Regarding the evolution of the forensic psychiatric population of S.P.M.S. Săpoca, we noticed a progressive increase in the number of court-ordered admissions for the execution of the safety measure between 2008 and 2018. There has also been an increase in the number of patients with a history of alcohol misuse and with a criminal record. Psychopathology didn't change significantly, with diagnoses from the F20 - F29 group being the most frequent. The proportion of admissions for severe offenses decreased, for moderate offenses it remained relatively constant, and for minor offenses it increased. Crimes against the person were dominant throughout the study period. In general, the number of discharges remained below the number of annual admissions. For the majority of the discharged patients, the court decided to replace the safety measure with mandatory treatment (art. 109 CP), and no statistical relationship was found between the decision to replace or terminate the safety measure and violence or the severity of the offense. But, the relationship with social support was statistically significant ($p = .001$).

5.4. Discussion

In this subchapter, the main results of our research were discussed in reference to the existing literature. To a large extent, our findings regarding the profile of the forensic psychiatric patient in the execution of the safety measure of medical hospitalization and the

temporal evolution of the forensic psychiatric population are supported by international studies. [11, 19, 20, 40]

Surprisingly, although high rates of psychoactive substance use have been reported in other countries among patients diagnosed with psychiatric disorders who commit crimes [16, 17], in our cohort, a very small number of cases had a record of other psychoactive substance use.

5.5. Conclusions

After analyzing our results, a profile of the forensic psychiatric inpatient was outlined: young (between 31 and 45 years old) male, single, without offspring, secondary school graduate, living with his parents, diagnosed with a schizophrenia spectrum disorder (F20 - F29), with a psychiatric history, who committed an offense against the person or property, finding that is in line with previous research [18 – 20] and thus confirming the first hypothesis (Hypothesis 1) issued for this study.

Regarding the evolution of the forensic psychiatric population of S.P.M.S. Săpoca, as the number of annual admissions increased significantly from 2008 to 2018, the proportion of admissions due to severe offenses, including murder and related offenses gradually decreased over the same time period. This result confirms the hypothesis that there is an increase in the number of forensic psychiatric inpatients (Hypothesis 2).

The third working hypothesis (Hypothesis 3) was confirmed by applying a Chi-square test, the main psychiatric diagnosis being significantly correlated with violence ($\chi^2(5, 650) = 20.975, p = .001, \phi_c = .180$). Patients in groups F20 - F29 and F70 - 79 committed violent offenses more frequently.

The last hypothesis (Hypothesis 4) was tested using a Chi-square test, its result ($\chi^2(2, 649) = 63.535, p < .001, \phi_c = .313$) confirming that the severity of the offense is associated with having a criminal record.

6. Comparative study on the socio-demographic, clinical and legal traits of female and male forensic psychiatric inpatients

6.1. Introduction (working hypothesis and specific objectives)

In the last 30 years, the number of forensic psychiatric beds increased worldwide [14, 15, 21, 22], which reflects both the increase of the number of patients and the length of

hospital stay. de Vogel and Nicholls [23] suggested that globally, women represent the fastest-growing forensic population.

To our knowledge, the traits of the female forensic psychiatric inpatient in Romania haven't been previously studied. Reports from other countries suggest that there are significant differences between the profiles of male and female patients admitted to medium security psychiatric hospitals. [24 – 26, 37].

The main objective of this study was to determine whether the profile of the forensic female inpatient differs significantly from that of the male inpatient.

As a secondary objective, we aimed to investigate the possible associations between gender and other socio-demographic, clinical and legal variables considered for this study.

6.2. Patients and methods

For this study, patients were divided into two lots, according to gender: Lot I included 546 male patients, representing 84% of the total, and Lot II, 104 female patients, 16%.

6.3. Results

The socio-demographic, clinical and legal traits of the patients in the two groups are summarized in Tables 6.1, 6.2 and 6.3.

Regarding the socio-demographic traits, the two lots differed in terms of the area of residence and marital status. Female patients came from urban areas, while men came from rural areas ($p = .009$). Female patients were more commonly divorced and widowed, while male patients were single ($p < .001$). Also, a higher percentage of women had children (57%) compared to men (33%) ($p < .001$).

Table 6.1. Socio-demographic traits

	Lot I	Lot II	χ^2
N, %	546, 84%	104, 16%	
Age (mean \pm SD)	43.98 \pm 12.10 years	46.24 \pm 13.86 years	$p = .264$
Length of hospital stay (mean \pm SD)	3.16 \pm 2.86 years	3.40 \pm 2.73 years	
Area of residence (n, %) - urban	270, 49%	66, 63%	$p = .009$
Professional status (n, %)			$p = .172$
Social aid	18, 3.30%	2, 2.60%	
Unemployed	155, 28.39%	23, 29.87%	
Disability allowance	207, 37.91%	36, 46.75%	
Retired	146, 26.74%	40, 38.46%	
Employed	23, 3.66%	3, 3.90%	
Marital status (n, %)			$p < .001$
Married	48, 8.79%	9, 8.65%	
Cohabiting	24, 4.40%	3, 2.88%	
Divorced	104, 19.05%	26, 25.00%	
Single	353, 64.65%	53, 50.96%	
Widower	17, 3.11%	13, 12.50%	
Education (n, %)			$p = .253$
No education	37, 6.78%	8, 7.69%	
Primary education	58, 10.62%	5, 4.81%	
Middle school	182, 33.33%	34, 32.69%	
High school	120, 21.98%	31, 29.81%	
Post-secondary	2, 0.37%	2, 1.92%	
Vocational	101, 18.50%	15, 14.42%	
Special	11, 2.01%	2, 1.92%	
Superior studies	33, 6.04%	7, 6.73%	
Postgraduate studies	2, 0.37%	0, 0.00%	
Housing situation (n, %)			$p = .158$
Living alone	152, 27.84%	30, 28.85%	
With life partner	42, 7.69%	15, 14.42%	
With parents	251, 45.97%	36, 34.62%	
With other relatives	54, 9.89%	11, 10.58%	
With other persons, without kinship	31, 5.68%	8, 7.69%	
Without housing	16, 2.93%	4, 3.85%	
With offspring (n, %)	179, 32.78%	59, 56.73%	$p < .001$

From a clinical point of view, differences were found in terms of the main psychiatric diagnosis. Women were more frequently diagnosed with dementia (F00 - F03), schizophrenia spectrum disorders (F20 - F29), affective disorders (F30 - F39) and mental retardation (F70 - F79), while men were more frequently diagnosed with other organic mental disorders (F04 - F09), disorders due to psychoactive substance use (F10 - F19) and personality disorders (F60 - F69). General comorbidity was high in both groups, but a higher

percentage of women had at least one associated medical condition (73% vs. 52%). History of alcohol misuse was more common among men ($p = .002$). No differences were found in regards to the psychiatric history and social support.

Table 6.2. Clinical traits

	Lot I	Lot II	χ^2
Diagnostic group (n, %)			$p = .028$
F00 – F03	12, 2.20%	8, 7.69%	
F04 – F09	75, 13.74%	4, 3.85%	
F10 – F19	7, 1.28%	0, 0.00%	
F20 – F29	298, 54.58%	64, 61.54%	
F30 – F39	29, 5.31%	9, 8.65%	
F60 – F69	56, 10.26%	2, 1.92%	
F70 – F79	69, 12.64%	17, 16.35%	
Medical comorbidity (n, %)	286, 52%	76, 73%	
Alcohol misuse (n, %)	214, 39.19%	24, 4.40%	$p = .002$
Social support (n, %)	226, 41.39%	44, 42.31%	$p = .024$
Psychiatric history (n, %)	461, 84.43%	95, 91.35%	$p = .066$

Regarding the legal traits, fewer women had a criminal record than men ($p = .024$). The relationship between gender and the type of offense had no statistical significance ($p = .860$). Most of the patients in both groups committed non-violent offenses. Male patients were more likely to commit minor offenses, while female patients were more likely to commit moderate and severe offenses.

Table 6.3. Legal traits

	Lot I	Lot II	χ^2
Type of offense (n, %)			$p = .860$
Against the authorities	15, 2.75%	4, 3.85%	
Against the administration of justice	105, 19.23%	17, 16.35%	
Against public order and peace	21, 3.85%	6, 5.77%	
Against property	126, 23.08%	26, 25.00%	
Against the person	264, 48.35%	49, 47.12%	
Against public safety	8, 1.47%	1, 0.96%	
Other			
Violence (n, %) - without	329, 60.26%	56, 53.85%	$p = .223$
Severity of the offense (n, %)			$p = .275$
Minor	214, 39.19%	33, 31.73%	
Moderate	247, 45.24%	50, 48.08%	
Severe	85, 15.57%	21, 20.19%	
Criminal history (n, %)	31, 29.81%	227, 41.58%	$p = .024$

6.4 Discussion

In this study, we analyzed and compared the traits of two groups of forensic psychiatric patients (male and female), admitted to S.P.M.S. Săpoca during the same time period (2008 - 2018) for the execution of the safety measure of medical hospitalization. In this subchapter, the results were analyzed by reference to previous international studies that addressed this topic.

6.5. Conclusions

Our findings are comparable to those previously reported by other studies that analyzed the profiles of female and male forensic psychiatric patients. [26] In respect to the socio-demographic traits, differences were observed in terms of the area of residence and marital status. Women in our cohort were more often from the urban area and were more likely to be divorced or widowed, while men were more often from rural areas and were single.

Regarding the clinical traits, the observed differences concerned the main psychiatric diagnosis and alcohol misuse, which was more common among men. [29, 39] Women had a diagnosis from the following groups more often: F00 - F39, F20 – F29 and F70 - F79, while men had a diagnosis from the following categories more frequently: F04 - F09, F10 - F19 and F60 - F69.

Regarding the legal traits, the two groups differed in terms of the offense and the existence of a criminal record, which was more common among men. [30, 31] Women committed the following offenses more frequently: threatening, destruction of property (including arson), harassment, hitting or other violence, murder, robbery, disturbance of public order and peace, and outrage. Men were more likely to commit sexual assault and corruption, driving a vehicle without a license/under the influence of alcohol, forgery, theft, deception, non-compliance with court decisions, bodily harm and domestic violence.

These results partially confirm the hypothesis (Hypothesis 1) according to which the profile of the female forensic psychiatric patient differs significantly from that of the male patient. The identified differences concerned the area of residence, the marital status, the main psychiatric diagnosis, history of alcohol misuse, the committed offense and the presence of a criminal record.

The second hypothesis (Hypothesis 2), namely that women commit violent offenses less often than men, was rejected. The result of the Chi-square test used to analyze it was: $\chi^2(1,650) = 1,487, p = .223$.

7. Factors associated with length of hospital stay among adult patients in the execution of the safety measure of medical hospitalization

7.1. Introduction (working hypothesis and specific objectives)

Currently there is no international agreement on the time period defining a “long-term hospitalization” in a forensic psychiatric institution [27], and previous studies used thresholds of two up to fifteen years, depending on the level of security. [28 - 31] As in other countries [38], in Romania the safety measure of medical hospitalization is taken for an indefinite period of time.

In the context of a reported increase in the number of patients referred to forensic psychiatric services [14, 15], the increase of hospital stay translates into an overcrowding of the safety measures hospitals, increased costs [32], more associated risks and a decreased quality of the provided services.

To our knowledge, no study examined the factors that influence the length of hospital stay of forensic psychiatric patients in our country and currently there are no services available for the forensic patients who require longer periods of hospitalization.

The study aimed to determine the factors that influence the length of hospital stay in a safety measures psychiatric hospital in Romania and to compare the socio-demographic, clinical and legal traits of patients with shorter and longer periods of hospitalization (</> 5 years), to identify the potential differences between the two groups. As a secondary objective, we set out to investigate the possible associations between the period of hospitalization and the other variables collected for the study.

7.2. Patients and methods

The length of hospital stay was calculated either from the date of admission to discharge, or from the date of admission until December 31st 2019 for those patients who were still in the hospital at that time (n = 262, 40.31%).

Patients were divided into groups, depending on the length of hospitalization: Lot I included 496 patients with a hospital stay of less than 5 years and Lot II, 154 patients whose length of hospitalization exceeded 5 years.

7.3. Results

The socio-demographic, clinical and legal traits of the patients in the two groups are summarized in Tables 7.1, 7.2 and 7.3.

From a socio-demographic point of view, differences between the two groups were observed in terms of the educational level, marital status, housing situation and professional status. In addition, about two-thirds of patients in Lot I had children (61.90%), compared to only one-third of Lot II (31.82%). Approximately half of the patients in Lot II graduated middle school (48.05%) compared to only 28.63% in Lot I. 7.06% of patients in Lot I had superior studies compared to 3.25% (n = 6) in Lot II. Patients in Lot I were more often married, in a consensual relationship or widowed, while patients in Lot II were more often single. Also, more patients in Lot I lived with their life partner. More patients in Lot I were employed at the time of admission (4.44% vs. 0.65%), while in Lot II there were more retired patients (26.8% vs. 34.42%).

Table 7.1. Socio-demographic traits

	Lot I	Lot II
N, %	496, 76.31%	154, 23.69%
Sex (n, %) - male	416, 83.87%	130, 84.42%
Age (mean ± SD)	44.71 ± 12.96 years	43.14 ± 10.42 years
Length of hospital stay (mean ± SD)	1.83 ± 1.22 years	7.60 ± 1.92 years
Area of residence (n, %) - urban	251, 50.60%	85, 55.19%
Professional status (n, %)		
Social aid	17, 3.43%	3, 1.95%
Unemployed	136, 27.42%	42, 27.27%
Disability allowance	188, 37.90%	55, 35.71%
Retired	133, 26.81%	53, 34.42%
Employed	22, 4.44%	1, 0.65%
Marital status (n, %)		
Married	51, 10.28%	6, 3.90%
Cohabiting	25, 5.04%	2, 1.30%
Divorced	98, 19.76%	32, 20.78%
Single	296, 59.68%	110, 71.43%
Widower	26, 5.24%	4, 2.60%
Education (n, %)		
No education	34, 6.85%	11, 7.14%
Primary education	52, 10.48%	11, 7.14%
Middle school	142, 28.63%	74, 48.05%
High school	118, 23.79%	33, 21.43%
Post-secondary	4, 0.81%	0, 0.00%
Vocational	99, 19.96%	17, 11.04%
Special	11, 2.22%	2, 1.30%

Superior studies	35, 7.06%	5, 3.25%
Postgraduate studies	1, 0.20%	1, 0.65%
Housing situation (n, %)		
Living alone	137, 27.62%	45, 29.22%
With life partner	54, 10.89%	3, 1.95%
With parents	206, 41.53%	81, 52.60%
With other relatives	53, 10.69%	12, 7.79%
With other persons, without kinship	31, 6.25%	8, 5.19%
Without housing	15, 3.02%	5, 3.25%
With offspring (n, %)	307, 61.90%	49, 31.82%

The most frequent main psychiatric diagnoses were those in group F20 - F29 for both lots, followed by F00 - F09 for Lot I and F70 - F79 for Lot II. More than half of the patients in Lot I had social support (52.22%), compared to only 21.43% in Lot II. Most patients in both groups had a psychiatric history.

Table 7.2. Clinical traits

	Lot I	Lot II
Diagnostic group (n, %)		
F00 - F09	87, 17.54%	12, 7.79%
F10 - F19	5, 1.01%	2, 1.30%
F20 - F29	256, 51.61%	106, 68.83%
F30 - F39	35, 7.06%	3, 1.95%
F60 - F69	63, 10.48%	6, 3.90%
F70 - F79	61, 12.30%	25, 16.23%
Medical comorbidity (n, %)	259, 54.23%	93, 60.39%
Alcohol misuse (n, %)	190, 38.31%	67, 43.51%
Social support (n, %)	259, 52.22%	33, 21.43%
Psychiatric history (n, %)	420, 88.31%	136, 84.68%

Patients in Lot I had a criminal record more frequently than patients in Lot II. For Lot I, the most frequently committed offense was non-compliance with court decisions and for Lot II, murder and related offenses (attempted murder, fatal blows or injuries, manslaughter). More than half of the patients in Lot II committed violent offenses (59.09%) compared to only a third of the patients in Lot I (37.90%). Most of the patients in both groups committed moderate offenses. Severe offenses were mostly committed by patients in Lot II, and minor offenses by patients in Lot I.

Table 7.3. Legal traits

	Lot I	Lot II
Type of offense (n, %)		
Against the authority	12, 2.42%	7, 4.55%
Against the administration of justice	111, 22.38%	11, 7.14%
Against public order and peace	20, 4.03%	7, 4.55%
Against property	111, 22.38%	41, 26.62%
Against the person	229, 46.17%	85, 55.19%
Other	13, 2.62%	3, 1.95%
Violence (n, %) - without	308, 62.10%	63, 40.91%
Severity of the offense (n, %)		
Minor	219, 44.15%	28, 18.18%
Moderate	219, 44.15%	78, 50.65%
Severe	58, 11.69%	48, 31.17%
Criminal history (n, %)	207, 41.73%	52, 33.77%

From the initial cohort of 650 patients admitted according to art. 110 CP for the execution of the safety measure between 2008 - 2018, approximately a quarter (n = 154, 23.7%) had a length of hospital stay that exceeded 5 years. Of these, 19, representing 2.92% of the total, were hospitalized for 10 years or more.

Most of the patients included in the study (n = 264, 40.62%) had a hospital stay of one to three years. Patients who had a period of hospitalization of less than a year accounted for 21.82% (n = 142).

Tables 7.4, 7.5 and 7.6 summarize the average lengths of hospital stay by categories of socio-demographic, clinical and legal variables and the results of the applied statistical tests.

From a socio-demographic point of view and with statistical significance, the longest average hospital stays were observed for patients who were retired (3.54 ± 3.05 years), single (3.50 ± 2.96 years), middle school graduates (3.83 ± 3.07 years) and living with their parents (3.52 ± 3.00 years).

The length of hospital stay under/over 5 years was statistically associated with gender ($p = .016$), the professional status ($p = .001$), educational level ($p = .002$) and the housing situation ($p = .011$).

Table 7.4. Duration of hospital stay by socio-demographic variables categories

	Length of stay (mean ± SD)	ANOVA	χ²
Gender		<i>p</i> = .440	<i>p</i> = .016
Male	3.16 ± 2.86 years		
Female	3.40 ± 2.73 years		
Age		<i>p</i> = .043	<i>p</i> = .107
18 – 30 years	3.16 ± 2.89 years		
31 – 45 years	3.36 ± 3.00 years		
46 – 59 years	3.32 ± 2.74 years		
>60 years	2.38 ± 2.22 years		
Area of residence		<i>p</i> = .095	<i>p</i> = .112
Urban	3.38 ± 2.87 years		
Rural	3.01 ± 2.79 years		
Professional status		<i>p</i> = .004	<i>p</i> = .001
Social aid	2.66 ± 2.34 years		
Unemployed	2.91 ± 2.77 years		
Disability allowance	3.37 ± 2.72 years		
Retired	3.54 ± 3.05 years		
Employed	1.42 ± 2.21 years		
Marital status		<i>p</i> < .001	<i>p</i> = .050
Married/Cohabiting	2.12 ± 2.18 years		
Divorced	3.11 ± 2.76 years		
Single	3.50 ± 2.96 years		
Widower	2.43 ± 2.20 years		
Education		<i>p</i> = .002	<i>p</i> = .002
No education	3.26 ± 2.80 years		
Primary education	2.87 ± 2.88 years		
Middle school	3.83 ± 3.07 years		
High school	3.16 ± 2.96 years		
Post-secondary	2.30 ± 1.66 years		
Vocational	2.56 ± 2.24 years		
Special	2.84 ± 2.20 years		
Superior studies	2.48 ± 2.27 years		
Housing situation		<i>p</i> = .003	<i>p</i> = .011
Living alone	3.23 ± 2.68 years		
With life partner	1.88 ± 1.61 years		
With parents	3.52 ± 3.00 years		
With other relatives	2.82 ± 2.90 years		
With other persons, without kinship	3.35 ± 3.11 years		
Without housing	2.93 ± 2.83 years		

Regarding the clinical variables, the longest average lengths of hospital stay were observed for patients with a diagnosis from the F10 - F19 diagnostic group (4.48 ± 4.15 years), without social support (3.81 ± 3.04 years) and with a psychiatric history (3.29 ± 2.82 years).

Table 7.5. Duration of hospital stay by clinical variables categories

	Length of stay (mean ± SD)	ANOVA	χ^2
Diagnostic group		$p < .001$	$p < .001$
F00 - F09	2.34 ± 2.18 years		
F10 - F19	4.48 ± 4.15 years		
F20 - F29	3.68 ± 2.88 years		
F30 - F39	1.74 ± 2.03 years		
F60 - F69	1.75 ± 2.44 years		
F70 - F79	3.68 ± 3.01 years		
Medical comorbidity		$p = .501$	$p = .887$
Yes	3.27 ± 2.84 years		
No	3.11 ± 2.83 years		
Alcohol misuse		$p = .053$	$p = .186$
Yes	2.92 ± 2.75 years		
No	3.37 ± 2.87 years		
Social support		$p < .001$	$p = .001$
Yes	2.34 ± 2.25 years		
No	3.81 ± 3.04 years		
Psychiatric history		$p = .037$	$p = .005$
Yes	3.29 ± 2.82 years		
No	2.63 ± 2.83 years		

The length of hospital stay under/over 5 years was statistically associated with the diagnostic group ($p < .001$), social support ($p = .001$) and psychiatric history ($p = .005$).

Concerning the legal variables, the longest average lengths of hospital stay were observed for patients who committed severe offenses (4.74 ± 3.08 years), violent offenses (4.00 ± 3.16 years) and offenses against the authority (4.41 ± 3.93 years).

The duration of hospital stay under/over 5 years was statistically associated with the type of offense ($p = .002$), violence ($p = .027$) and the severity of the offense ($p = .004$).

Table 7.6. Duration of hospital stay by legal variables categories

	Length of stay (mean ± SD)	ANOVA	χ^2
Type of offense		$p = .002$	$p = .002$
Against the authority	4.41 ± 3.93 years		
Against the administration of justice	2.25 ± 1.98 years		
Against public order and peace	3.28 ± 2.90 years		
Against property	3.39 ± 3.06 years		
Against the person	3.40 ± 2.86 years		
Other	3.10 ± 2.83 years		
Violence		$p < .001$	$p = .027$
With	4.00 ± 3.16 years		
Without	2.65 ± 2.44 years		
Severity of the offense		$p < .001$	$p = .004$
Minor	2.36 ± 2.14 years		
Moderate	3.35 ± 2.99 years		
Severe	4.74 ± 3.08 years		
Criminal history		$p = .032$	$p = .201$
Yes	2.91 ± 2.61 years		
No	3.39 ± 2.96 years		

7.4. Discussion

In this subchapter, our results were compared with those found in the existing literature, noticing that the figures are similar to those previously reported internationally. [33-35]

7.5. Conclusions

In this study we identified an average length of hospital stay of 3.20 years. For Lot I, the average duration of hospital stay was 1.83 ± 1.22 years, and for Lot II, 7.60 ± 1.92 years. The majority of patients were hospitalized between one and three years (40.62%), and 23.69% of the sample was classified as "long-term hospitalization" (> 5 years). Only 2.92% of the patients remained in the hospital for more than 10 years. [33 - 35]

The factors associated with the length of hospital stay were the educational level ($p = .002$), the marital status ($p = .003$), the housing situation ($p = .011$), social support ($p = .001$), the main psychiatric diagnosis ($p < .001$), the type of offense ($p = .002$), violence ($p = .027$) and the severity of the offense ($p = .004$). [27, 28, 32, 36]

The study hypothesis was confirmed, the duration of hospital stay was significantly correlated with the severity of the offense ($\chi^2 (2, 650) = 49,276, p < .001, \phi_c = .275$) and with social support ($\chi^2 (1, 650) = 33.609, p < .001, \phi_c = .227$). Patients who committed severe

offenses were hospitalized, on average, for 4.74 ± 3.08 years and patients without social support, for 3.46 ± 2.98 years. In contrast, patients who committed minor offenses had a mean length of hospital stay of 2.36 ± 2.14 years, and those who had social support, 2.34 ± 2.25 years.

8. Conclusions and personal contributions

8.1. Conclusions

For the most part, our results regarding the evolution of the forensic psychiatric population, the length of hospital stay, the differences identified between the patient profiles by gender and period of hospitalization, the correlation between the severity of the offense and having a criminal record and between the longer hospital stay and the severity of the offense and social support are in line with the existing literature.

Through its topic and the obtained results, the thesis provides new evidence to the field of forensic psychiatry in Romania, it being the first to address the traits of female patients in the execution of the safety measure of medical hospitalization and the factors that influence the length of hospital stay of forensic psychiatric patients.

The documentation stage resulted in a comprehensive synthesis of the complex connections between major mental disorders, violence and crime and the relevant national and international legislation on the forensic psychiatric expertise and the management of offenders diagnosed with mental disorders.

Analyzing the trends and identifying the traits that led to the increase of the forensic psychiatric population has important implications for mental health policies, as forensic psychiatric services are costly and involve a significant restriction of personal freedom. We believe that the implementation of an electronic register of forensic psychiatric patients would facilitate the efficient use of the allocated resources.

Our results indicate that individuals with a history of alcohol misuse and a criminal record, who commit non-violent offenses represent an increasing proportion of the forensic psychiatric population of S.P.M.S. Săpoca and stress the need for the development of rehabilitation programs focused on substance dependence, specifically alcohol. We believe that special attention should be paid to the development of community services and social assistance for psychiatric patients, particularly those with mandatory treatment according to article 109 of the Criminal Code.

Although they represent a minority among forensic psychiatric patients, the number of women admitted for the execution of the safety measure is increasing. Furthermore, they are more likely to commit serious offenses (murder, attempted murder and arson) than their male counterparts and present several clinical features that would justify the implementation of services tailored to their profiles and care needs. We also consider the development of additional services that meet the security, treatment and rehabilitation needs of forensic psychiatric patients who require longer periods of hospitalization beneficial.

The results of our research should be seen in relation to its limitations, the most important being, from our point of view, the methodological one as this was a retrospective study. Although we included all patients admitted over a period of 11 years, we relied entirely on the information available in the hospital records, so there may be other variables associated with gender or length of hospital stay that weren't measured. Moreover, because the analyzed data came from a single hospital, our findings may not be generally applicable to the entire forensic psychiatric population in Romania.

The research perspectives opened by the three studies included in this thesis can go in several directions. Firstly, including other variables such as the duration and number of episodes of the disease, the presence of psychotic symptoms or intoxication with a substance at the time of the offense and the medication administered prior to committing the offense may provide important additional information on the relationship between mental disorder and crime. Carrying out a multicenter study, that includes patients admitted according to art. 110 CP in the four safety measures hospitals in the country would generate edifying results regarding the forensic psychiatric population in Romania. Future studies on women admitted to safety measures psychiatric hospitals should aim to assess the risks and their quality of life. Finally, we believe that knowing the perspectives of the staff and the users of these services is essential in providing adequate and efficient services that respect the ethical standards and at the same time are treatment-oriented, encourage personal rehabilitation and reduce the risk of reoffending.

8.2. Personal contributions

- The profile of the patient admitted according to art. 110 CP: male, young (average age 44.33 ± 12.41 years), single, without children, middle school graduate, living with parents, diagnosed with a schizophrenia spectrum disorder (F20 - F29), with a psychiatric history, who committed an offence against the person or property;
- The number of admissions for the execution of the safety measure increased significantly from 2008 to 2018, the proportion of admissions due to severe offenses, including murder and related offenses, gradually decreased over the same time period. The annual rate of increase in the number of hospitalizations ranged between 3.70% (in 2017) and 200% (in 2010);
- The relationship between the diagnostic group and the type of offense was statistically significant ($p < .001$). We found that patients diagnosed with schizophrenia and dementia committed offenses against the person more frequently, patients with organic mental disorders, mood disorders and mental retardation - against property, those with personality disorders - against the administration of justice, while patients with substance use disorders - against public order and peace;
- The diagnostic group was significantly associated with homicide and related offenses, respectively attempted murder, fatal blows or injuries and manslaughter ($p = .009$). Patients diagnosed with dementia, schizophrenia and mental retardation were more likely to commit these offenses compared to patients with organic mental disorders, personality disorders, and mood disorders;
- The main psychiatric diagnosis was significantly correlated with violence ($p = .001$). Patients in groups F20 - F29 and F70 - 79 committed violent offenses more frequently;
- Violence was significantly correlated with alcohol use ($p = .011$) and with having a criminal record ($p < .001$). Patients with a history of alcohol use and those with a criminal record were more likely to commit violent offenses;
- The severity of the offense was significantly correlated with the presence of a criminal record ($p < .001$). Patients with a criminal record were more likely to commit severe offenses;

- From a socio-demographic point of view, female and male patients differed in terms of the area of residence and marital status. Women lived in urban areas while men, in rural areas ($p = .009$). Women were more often divorced or widowed, while men were more often unmarried ($p < .001$);
- Women were more frequently diagnosed with dementia (F00 - F03), affective disorders (F30 - F39) and mental retardation (F70 - F79), while men were more frequently diagnosed with other organic mental disorders (F04 - F09), mental and behavioral disorders due to psychoactive substance use (F10 - F19) and personality disorders (F60 - F69);
- Gender was significantly associated with alcohol use ($p = .002$) and with having a criminal record ($p = .024$). Male patients were more likely to have a history of alcohol misuse and had a criminal record more often than the women;
- Women were more likely to commit the following offenses: threatening, destruction of property (including arson), harassment, hitting or other violence, murder, robbery, disturbance of public order and peace, and outrage. Men were more likely to commit sexual assault and corruption, driving a vehicle without a license/under the influence of alcohol, forgery, theft, deception, non-compliance with court decisions, bodily harm and domestic violence;
- Compared to men, women committed more serious offenses such as murder and attempted murder (16.35% vs. 13.37%) and destruction of property, including arson (16.35% vs. 12.82%). The proportion of sexual offenses was higher among men (2.93% vs. 0.96%);
- The average length of hospital stay was 3.20 years. While 40.62% ($n = 264$) of the patients spent between one and three years in the hospital, 23.69% ($n = 154$) of the sample were classified as “long-term hospitalization” (> 5 years) and only 2.92% ($n = 19$) of the patients remained in the hospital for periods that exceeded 10 years;
- Patients with a hospital stay of less than 5 years more frequently committed crimes against the administration of justice, mainly “non-compliance with court decisions”, and patients with a hospital stay of more than 5 years, murder and related offenses (attempted murder, fatal blows or injuries, manslaughter);

- The length of hospital stay was significantly correlated with the marital status ($p < .001$), professional status ($p = .004$) and the housing situation ($p = .003$). Married/cohabiting patients were hospitalized, on average, for 2.12 ± 2.18 years, while unmarried patients spent the longest time in the hospital (3.50 ± 2.96 years). The shortest average duration of hospital stay was observed for patients who were employed at admittance (1.42 ± 2.21 years), while retired patients had the longest periods of hospitalization (3.54 ± 3.05 years). Patients who were living with their life partner at the time of admission had the shortest hospitalization periods (1.88 ± 1.61 years). Those living with their parents spent, on average, 3.52 ± 3.00 years in the hospital, and those living alone, 3.23 ± 2.68 years;
- We found a statistically significant difference between the average length of hospital stay of patients with children and those without children ($p = .008$). Patients who had children had a mean length of hospital stay of 2.81 ± 2.52 years, while patients without children had a mean length of stay of 3.43 ± 2.99 years;
- The relationship between the length of hospital stay under/over 5 years and social support was statistically significant ($p = .001$). Patients without social support had longer hospital stays than patients who had social support (3.81 ± 3.04 vs. 2.34 ± 2.25 years);
- The length of hospital stay was significantly different between the following diagnostic groups: F00 - F09 and F20 - F29 ($p < .001$), F20 - F29 and F60 - F69 ($p < .001$), F20 - F29 and F30 - F39 ($p = .001$), F30 - F39 and F70 - F79 ($p = .004$), F60 - F69 and F70 - F79 ($p = .001$). Patients diagnosed with affective disorders (F30 - F39) had the shortest hospital stays, followed by those with personality disorders (F60 - F69) and organic mental disorders (F00 - F09). At the opposite end were patients in groups F20 - F29 (schizophrenia, schizotypal and delusional disorders), F70 - F79 (mental retardation) and F10 - F19 (mental and behavioral disorders due to psychoactive substance use);
- The length of hospital stay was significantly correlated with the type of offense ($p = .002$). Patients who committed crimes against the authority, against the person and against property had longer periods of hospitalization

than patients who committed crimes against the administration of justice or public order and peace;

- The length of hospital stay was significantly associated with violence ($p < .001$) and the severity of the offense ($p < .001$). Patients who committed violent offenses and those who committed severe offenses had longer periods of hospitalization than the other categories.

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