

Factors Influencing the Length of Hospital Stay in a Safety Measures Psychiatric Hospital in Romania

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ABSTRACT: Introduction: A growth in the number of patients admitted to forensic psychiatric services has been reported worldwide. At the same time, an increase in the length of hospital stay of these patients was observed. Objectives: To identify the factors that influence the length of hospital stay in a Romanian forensic psychiatric sample, as well as to compare the socio-demographic, clinical and criminological features of the “long stay” and “shorter stay” patients. Methods: This was a retrospective, cross-sectional study that included all patients admitted to Săpoca Psychiatry and Safety Measures Hospital according to article 110 of the Penal code (n=650) over a period of 11 years (2008-2018). Long stay was considered as a period of hospitalization greater than 5 years. Results: The average length of hospital stay in the sample was 3.20 years. Approximately one quarter (n=154) of the patients were classified as “long stay”. The variables that were significantly associated with length of stay included the main psychiatric diagnosis, social support, the severity of the offence and the perpetration of violence. Conclusions: Overall, our findings are in line with observations made by researchers from other countries. Our study highlights the need for further, more detailed research on the patients admitted to forensic psychiatric units in Romania.

KEYWORDS: Forensic psychiatry, offender, inpatient, length of stay.

Introduction

The Romanian penal code (PC) [1] presents the safety measures as measures taken against a person who unjustifiably committed a crime, in order to remove a state of danger and to prevent future offences.

Medical hospitalization is regulated by article 110 of the PC. For these individuals, care is provided in the maximum-security unit of Bucharest-Jilava Penitentiary Hospital and in four medium-security hospitals, each of them serving a number of counties, assigned by the Ministry of Health.

Of the four, Săpoca Psychiatry and Safety Measures Hospital (SPMS Săpoca) has the largest capacity (300 beds).

Similar to other countries [2], the measure is taken for an indefinite period of time.

Reassessments take place annually, and the court rules on the termination, replacement or maintenance of the measure.

Currently, there is no international agreement as to how “long stay” in forensic psychiatric units is defined [3] and previous studies have used thresholds of two to ten years [4-7].

In the context of a reported growth in the number of patients referred to forensic psychiatry [8,9], the increase in hospital stay translates into an overcrowding of forensic psychiatric hospitals, higher costs [10], more associated risks and a decrease in the quality of provided services.

As far as we know, no studies have examined the factors that influence the length of hospital

stay of forensic psychiatric patients in Romania and currently no dedicated services for patients that require longer hospitalization periods are available in the country.

Identifying these factors represents the first step in the development of appropriate services and efficient case management for this patient population.

Objectives

The purpose of our study was to identify the factors that influence the length of hospital stay in a safety measures psychiatric hospital in Romania, as well as to compare the socio-demographic, clinical and criminological features of the “long stay” and “shorter stay” patients in the sample in order to identify the potential differences between the two groups.

Material and Methods

Subjects and Assessment

All patients admitted according to article 110 of the PC to SPMS Săpoca from 01.01.2018 to 31.12.2018 were included in this retrospective, cross-sectional study.

Length of hospital stay was calculated either from admission to discharge or from admission to 31.12.2019 for the patients that were still in the hospital at that time (n=262, 40.31%).

Socio-demographic, clinical and criminological information was collected using the data recorded in the clinical files, legal records and social assessment forms of each patient.

Patients were divided into diagnostic groups according to the ICD-10 [11] categories, the ICD being the classification system used in the practice of psychiatry in Romania.

Offences were classified according to the PC.

We considered a hospitalization period greater than 5 years to be "long stay".

The study was approved by the Ethics Committee of SPMS Săpoca.

Statistical Analysis

The data were recorded in a Microsoft Excel 2019 database and were analyzed using IBM SPSS Statistics version 20.

A descriptive analysis for the whole sample and for the long stay and shorter stay groups was performed.

To make comparison between the two groups, cross-tabulation, the Chi-square test and the analysis of variance were used.

A p value $<.05$ was considered significant.

Results

During the study period, 650 patients were admitted to SPMS Săpoca according to art. 110 of the PC.

The mean age was 44.33 ± 12.41 years, with a minimum of 18 and a maximum of 86.

The majority of the patients included in the study were male ($n=546$, 84%), single ($n=405$, 62.3%), without offspring ($n=412$, 63.38%) and had a low educational status ($n=337$, 51.85%).

Most of them were unemployed ($n=584$, 89.84%) at the time of admission.

The mean length of hospital stay was 3.20 ± 2.84 years.

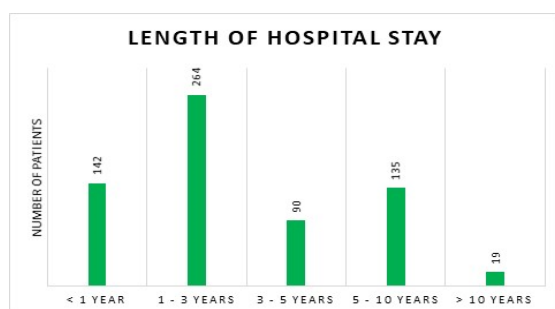


Figure 1. Distribution of patients by length of hospital stay.

Figure 1 represents the distribution of patients according to the length of hospitalization.

Approximately 24% ($n=154$) of the patients spent more than 5 years in the hospital.

Male patients were more likely to be hospitalized for a longer period of time (3.16 ± 2.85 vs. 1.79 ± 2.73 years).

Socio-Demographic Features

We identified several differences in the socio-demographic features between the "long stay" and "shorter stay" groups (Table 1).

Table 1. Socio-demographic features.

	Hospital stay <5 years	Hospital stay >5 years
n, %	496 (76.31)	154 (23.69)
Age, years, mean (SD)	44.71 (12.96)	43.14 (10.42)
Length of hospital stay, mean (SD)	1.84 (1.22)	7.61 (1.93)
Gender, male, n (%)	416 (83.87)	130 (84.42)
Area of residence, urban, n (%)	251 (50.60)	85 (55.19)
Educational level, 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)	2 (1.30)
Vocational	99 (19.96)	17 (11.04)
Special education	11 (2.22)	2 (1.30)
Superior studies	35 (7.06)	5 (3.25)
Postgraduate studies	1 (0.20)	1 (0.65)
Marital status, n (%)		
Married/ Cohabiting	76 (15.32%)	8 (5.2)
Divorced	98 (19.76)	32 (20.78)
Single	296 (59.68)	110 (71.43)
Widower	26 (5.24)	4 (2.60)
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)
Housing situation, n (%)		
Living alone	137 (27.62)	45 (30.20)
With spouse	206 (41.53)	3 (2.01)
With other relatives	53 (10.69)	12, 8.05%
With parents	54 (10.89)	81 (54.36)
With other persons, without kinship	31 (6.25)	8 (5.37)
Without housing	15 (3.02)	5 (3.25)
With offspring, n (%)	307 (61.90)	49 (31.82)
Social support, present, n (%)	259 (52.22)	33 (21.43)

At the time of admission, patients with a shorter length of stay were more likely to be married or cohabiting than those in the long stay group.

The patients in the long stay group were mostly single or divorced.

In terms of educational status, almost half of the long stay group graduated middle school, while more patients in the shorter stay group graduated from a vocational school.

Regarding the housing situation, more than half of the long stay patients were living with their parents, as opposed to the shorter stay group, where a high proportion of the patients were living with their spouse.

At the time of admission, more patients in the shorter stay group were employed.

While two thirds of the shorter stay patients had children, only one third of those with more than 5 years hospital stay did.

Also, patients with a longer hospital stay more often didn't have any social support.

Clinical Features

The clinical features of both groups are shown in Table 2.

Table 2. Clinical features.

	Hospital stay <5 years	Hospital stay >5 years
ICD-10 diagnostic group, n (%)		
F00-F09 Organic mental disorders	87 (17.54)	12 (7.79)
F10-F19 Mental and behavioral disorders due to psychoactive substance use	5 (1.01)	2 (1.30)
F20-F29 Schizophrenia, schizotypal and delusional disorders	256 (51.61)	106 (68.83)
F30-F39 Mood disorders	35 (7.06)	3 (1.95)
F60-F69 Disorders of adult personality and behavior	52 (10.48)	6 (3.90)
F70-F79 Mental retardation	61 (12.30)	25 (16.23)
Psychiatric history, n (%)	420 (84.68)	136 (88.31)
Any medical comorbidity, n (%)	269 (54.23)	93 (60.39)
Substance misuse, n (%)	188 (37.90)	67 (43.51)

In regards to the main psychiatric diagnosis, schizophrenia spectrum disorders (F20-F29) were the most frequent in both groups, followed by mental retardation (F70-F79) for the long stay group and organic brain disorders (F00-F09) for the shorter hospital stay patients.

A high proportion of patients in both groups had at least one medical comorbidity.

The most common comorbidities in the sample were: cardio-vascular diseases (24.46%), followed by metabolic and endocrinological disorders (26.46%), infectious diseases (10.92%) and neurological disorders (10.15%).

Lifetime substance misuse was similar in both groups, and there was no significant difference in relation to previous contact with psychiatric services

Criminological Features

As shown in Table 3, a higher proportion of patients in the shorter stay group had a criminal history.

Patients that required a longer period of hospitalization committed more violence and more severe offences than the patients with less than 5 years of hospitalization.

The long stay patients committed more homicide, attempted homicide and destruction of property offences, including arson, while the shorter stay patients committed more justice related crimes, generally non-compliance with the imposed treatment safety measure (article 109 of the PC).

Table 3. Criminological features.

	Hospital stay <5 years	Hospital stay >5 years
Type of offence, n (%)		
Against the authorities	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 the patrimony	111 (22.38)	41 (26.62)
Against the person	229 (46.17)	85 (55.19)
Other	13 (2.62)	3 (1.95)
Violence, n (%)	174 (35.08)	91 (59.09)
Severity of the offence, n (%)		
Low	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)

Factors Associated with Length of Hospital Stay

Our results show that the length of hospital stay in general was correlated with the level of education ($F(8,641)=3.014, p=.002$), the marital status ($F(3,646)=6.514, p<.001$) and the housing situation ($F(5,644)=3.585, p=.003$).

Patients with superior studies ($n=40$) spent the least amount of time in the hospital (2.05 ± 1.89 years), while those who graduated middle school ($n=216$) were hospitalized for the longest period of time (3.51 ± 2.98 years).

Married patients spent less time in the hospital than those who were single (1.91 ± 1.99 vs. 3.17 ± 2.90 years).

The patients living with their spouse at the time of admission had a shorter hospital stay (1.70 ± 1.58 years) compared to those living with their parents (3.15 ± 3.19 years).

No association was observed between the length of stay and age at admission or the area of residence.

We found a significant statistical correlation between the length of hospital stay and the professional status ($F(4,645)=3.919, p=.004$).

Patients that were working before admission spent the least amount of time in the hospital

(1.13±2.22 years), while those who were retired had the longest hospital stays (3.61±2.93 years).

A significant statistical correlation between the length of hospitalization and the presence of social support ($F(1,648)=45.211, p < .001$) was found.

Patients without social support stayed in the hospital for a mean of 3.45±2.97 years, as opposed to those that had some form of social support (2.14±2.21 years).

Concerning the ICD-10 diagnostic group, we found a significant statistical correlation between the length of stay and the main psychiatric diagnosis ($F(5,644)=10.381, p < .001$).

Patients diagnosed with disorders due to psychoactive substance use (F10-F19) had a mean length of hospital stay of 4.00±4.16 years, followed by those with schizophrenia spectrum disorders (F20-F29) (3.37±2.83 years) and mental retardation (F70-F79) (3.33±2.87).

No association between substance misuse and the length of hospitalization was identified.

Our results indicated a weak association between the length of hospital stay and having a psychiatric history ($F(1,648)=4.381, p=.037$) or with having a criminal background ($F(1,647)=4.611, p=.032$).

Regarding the criminological features, we identified an association between the type of offence and the length of hospital stay ($F(5,644)=3.934, p=.002$).

Our results also show a significant correlation between the length of hospital stay and the violent nature of the offence ($F(2,647)=20.147, p < .001$).

The patients that committed violent offences spent, on average, 1.13 more years in the hospital than those with non-violent offences (3.65±3.06 vs. 2.52±2.56 years).

The severity of the offence was significantly associated with the length of hospital stay ($F(2,647)=29.376, p < .001$).

Patients who committed more serious offences spent the most amount of time in the hospital (7.61±1.89 years).

Discussion

We retrospectively reviewed the records of 650 patients admitted between 2008 and 2018 to SPMS Săpoca for the execution of the hospitalization safety measure and found a mean length of stay of 3.20 years.

While 23.69% of the sample was classified as “long stay”, only 2.92% of the patients stayed in the hospital for more than 10 years.

The numbers resemble those found by previous studies [12-15].

Similar to prior research, we found that a longer hospital stay was associated with having a lower level of education [4,9], being single [3] and retired [4].

Patients living with their spouse at the time at admission had a shorter hospital stay [16].

The presence of social support was a significant factor predicting a shorter hospitalization period [4].

Having a criminal background didn't influence the length of stay [17,18].

We also found a significant association between the severity of the offence and the length of hospital stay.

Severity of the offense has been repeatedly identified as a major factor that contributes to a longer hospitalization period. [3,4,17-19].

The results of our study should be viewed in light of its limitations, the most important one being its retrospective design.

Although we included all patients admitted over a 11-year period, the collected data was based entirely on the hospital's records, so there may be other variables associated with the length of hospital stay, which were not measured.

Another important limitation of our study is that it analyzed data from one site and its findings may not be generally applicable for the entire Romanian forensic psychiatric population.

Conclusion

Our study suggests the need to develop additional services that meet the security, treatment and rehabilitation needs of the forensic psychiatric patients in Romania that require longer hospitalization periods.

Future research should include information on the clinical and treatment aspects, as well as patient and staff perspectives.

Conflict of interests

None to declare.

References

1. Law 286 on the Criminal Code, 2009, issued by the Romanian Parliament, [online]. Available at: <http://legislatie.just.ro/Public/DetaliiDocument/109855> [Accessed 30.11.2021].
2. Huband N, Furtado V, Schel S, Eckert M, Cheung N, Bulten E, Völlm B. Characteristics and needs of long-stay forensic psychiatric inpatients: A rapid review of the literature. *Int J Forensic Ment Health*, 2018,17(1):45-60.

3. Vollm B, Edworthy R, Holley J, Talbot E, Majid S, Duggan C, Weaver T, McDonald R. A mixed-methods study exploring the characteristics and needs of long-stay patients in high and medium secure settings in England: implications for service organization. *HS&DR*, 2017,5(11):1-268.
4. Fong CL, Kar PC, Huei LT, Yan OL, Daud TIM, Zakaria H, Singh S, Salleh RM. Factors influencing inpatient duration among insanity acquittees in a Malaysian mental institution. *ASEAN J Psychiatry*, 2010, 11(1):25-35.
5. Ross T, Querengässer J, Fontao MI, Hoffmann K. Predicting discharge in forensic psychiatry: The legal and psychosocial factors associated with long and short stays in forensic psychiatric hospitals. *Int J Law Psychiatry*, 2012, 35(3):213-221.
6. Wright B, O'Neill C, Kennedy HG. Admissions to national forensic hospital 1997-2003. *Ir J Psychol Med*, 2008, 25(1):17-23.
7. Edworthy R, Vollm B. Long-stay in high and medium secure forensic psychiatric care: Prevalence, patient characteristics and pathways in England. *Eur Psychiatry*, 2016, 33(S1):S180-S180.
8. Jansman-Hart EM, Seto MC, Crocker AG, Nicholls TL, Côté G. International trends in demand for forensic mental health services. *Int J Forens Ment Health*, 2011, 10(4):326-336.
9. Chow WS, Priebe S. How has the extent of institutional mental healthcare changed in Western Europe? Analysis of data since 1990. *BMJ open*, 2016, 6:e010188.
10. Sampson S, Edworthy R, Völlm B, Bulten E. Long-Term Forensic Mental Health Services: An Exploratory Comparison of 18 European Countries. *Int J Forensic Ment Health*, 2016, 15:1-19.
11. World Health Organization. Chapter V Mental and behavioural disorders. In: World Health Organization (Eds): *International Statistical Classification of Diseases and Related Health Problems 10th Revision Fifth edition*, World Health Organization, 2016, Geneva, 1-1080.
12. Jacques J, Spencer SJ, Gilluley P. Long-term care needs in male medium security. *Br J Forensic Pract*, 2010, 12(3):37-44.
13. Shah A, Waldron G, Boast N, Coid JW, Ullrich S. Factors associated with length of admission at a medium secure forensic psychiatric unit. *J Forensic Psychiatry Psychol*, 2011, 22(4):496-512.
14. Hare Duke L, Furtado V, Guo B, Völlm BA. Long-stay in forensic-psychiatric care in the UK. *Soc Psychiatry Psychiatr Epidemiol*, 2018, 53(3):313-321.
15. Völlm BA, Edworthy R, Huband N, Talbot E, Majid S, Holley J, Furtado V, Weaver T, McDonald R, Duggan C. Characteristics and Pathways of Long-Stay Patients in High and Medium Secure Settings in England A Secondary Publication From a Large Mixed-Methods Study. *Front Psychiatry*, 2018, 9:140.
16. Eckert M, Schel SH, Kennedy HG, Bulten BH. Patient characteristics related to length of stay in Dutch forensic psychiatric care. *J Forensic Psychiatry Psychol*, 2017, 28:1-19.
17. Edwards J, Steed P, Murray K. Clinical and forensic outcome 2 years and 5 years after admission to a medium secure unit. *J Forens Psychiatry*, 2002, 13(1):68-87.
18. Skipworth J, Brinded P, Chaplow D, Frampton C. Insanity acquittee outcomes in New Zealand. *Aust N Z J Psychiatry*, 2006, 40(11-12):1003-1009.
19. Andreasson H, Nyman M, Krona H, et al. Predictors of length of stay in forensic psychiatry: the influence of perceived risk of violence. *Int J Law Psychiatry*, 2014, 37(6): 635-642.

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