



Insights and risk factors of involuntary hospitalizations through a retrospective analysis of police records: differences between involuntarily and non-hospitalized patients

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Abstract

Involuntary psychiatric admission poses a challenge in terms of providing the most effective yet least restrictive care in accordance with each country's regulations. Effective communication and coordination between the justice, police, and healthcare systems are essential for the successful implementation of this process. This study examines the sociodemographic, clinical, and parametric factors involved in the status of involuntary admission. A retrospective analysis of 292 cases grounded in the Hellenic Police records was conducted to indicate differences between involuntarily and non-hospitalized patients as well as risk and protective factors for the status of compulsory admission in psychiatric units located in Athens, Greece. Out of a total of 292 cases, 240 (77.4%) concerned involuntarily hospitalized patients, compared to 52 (16.8%) non-hospitalized. The most prevalent diagnosis among involuntarily hospitalized patients was schizophrenia, schizotypal, and delusional disorders (53.5%), in contrast to non-hospitalized patients, for whom it was affective disorders (33.3%). Affective disorders, along with neurotic, stress-related, and somatoform disorders, were found to offer a protective factor against involuntary hospitalizations. Our findings indicate that involuntary hospitalizations are associated with procedural downsides, detrimentally affecting mental health treatment recipients. Therefore, community-based compulsory therapeutic interventions should be incorporated into the mental health agenda of Greece.

Keywords Involuntary hospital admission · Police Records · Procedural downsides · Coercion · Risk factors

Introduction

The practice of involuntary hospital admission has been widely debated in recent decades in various countries across Europe and the rest of the world due to the ethical complexity involved, the complicated construction of the autonomy of the psychiatric patient, and the variations in mental health legislation (Hustoft et al., 2018). These debates stem from the urgent need to inform clinical practices and legal

procedures, as well as manage treatment resources for mental illnesses (WHO, 2011). Involuntary hospital admission of individuals suffering from mental illness is intended to prevent the deterioration of their mental health condition (Georgaka, 2009) and the immediate danger to themselves and/or others. This occurs in emergencies or when medical treatment for the individuals is lacking, or even when individuals stop taking their prescribed medication(s) and/or treatments. However, in some jurisdictions, such as Greece, individuals who have violated the legislation and have been considered "not guilty by reason of insanity" are involuntarily treated in psychiatric clinics of hospitals and are kept hospitalized for an undefined period of time (5 to 6 years minimum), giving a stigmatizing impression of "infinite" psychiatric patients (Douzenis, 2016; European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment, 2019).

In most countries, this legally regulated measure is considered a drastic one as it restricts the individual's rights and freedom and is being initiated only when less coercive

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measures are not accessible and feasible at the time (Arnold et al., 2019; Zhang et al., 2015). Even though the use of such restrictive measures intends to achieve clinical and psychosocial improvement, (Kallert et al., 2008; Kortrijk et al., 2010), it also had a string of negative effects. Recent studies have shown that involuntary hospital admission is associated with longer inpatient care (Balducci et al., 2017; Maina et al., 2021), rapid readmission (Hung et al., 2017; Kallert et al., 2008), low levels of treatment satisfaction and social functioning (Kallert et al., 2008; Katsakou et al., 2010), higher suicide rates and feelings of exclusion from participation in the treatment process (Chung et al., 2017; Kallert et al., 2008). It is also evident that involuntary admission results in stigmatisation, shame and self-contempt for the individual (Link et al., 2008; Rüsche et al., 2014), potentially significantly affecting their recovery or seeking any kind of treatment in the future (Xu et al., 2018; Swartz et al., 2003). In alignment with this, feelings evoked from the experience of involuntary hospitalization include fear, anger, and lack of trust. Such negative emotions make the experience of hospitalization traumatic in its core and patients resist following the same process in the future (Stylianidis et al., 2017b).

On the other hand, the matter of compulsory treatment and medical monitoring is now regulated in 75 countries within community settings. However, there are different practices and criteria, for individuals suffering from severe mental health illnesses and being placed in community mental health care provision (Rugkåsa, 2016). Examples of different practices for involuntary hospitalization include either via clinic recommendation (i.e., Denmark, Canada, United Kingdom) or via court order (i.e., USA).

In Greece, the legislative framework has been regulated by the articles 95 and 96 of Law 2071/1992. This law describes that the involuntary hospitalization procedure can be practically activated, via a standard or emergency route, in the following cases: if the individual is considered to suffer from a mental health illness; if the individual is considered incompetent to decide for their health welfare and wellbeing; if the lack of medical treatment will possibly interfere with their recovery or worsen their physical and mental health, or if the individual is considered to be a threat to themselves and/or others. The procedure of involuntary hospitalization, as applied in Greece, complies fully with the European standards, and can be activated by either first or second-degree relatives, legal guardians and/or judicial supporters (Stylianidis et al., 2017a). If none of these options is applicable for the individual, then the procedure can be activated by the Police, branches of the National Hellenic Center for Social Solidarity or even by citizens upon written witness testimony given to the Duty Officer of a police station, outlining the reasons for requesting to initiate the procedure (ex officio cases). In any case, the Hearings Prosecutor has the ultimate responsibility for the decision upon

the initiation of this legislative measure, however, the on-call psychiatrists will finally estimate whether a patient will meet the criteria for hospitalization or not based on their assessment and in relation with the criteria of Law 2071/1992 as mentioned above (Douzenis et al., 2014).

Even though the procedure in Greece appears to conform with European standards, numerous Greek studies have brought to the forefront significant systemic and procedural flaws which render the mental health system dysfunctional. In 2012, Douzenis et al. highlighted that a large percentage of police officers were present at the time of mental health assessments, a fact that certainly infringes the principle of confidentiality in healthcare. Stylianidis et al. (2017a) found that out of the total sample of involuntarily hospitalised patients, only 13.8% were referred to psychosocial support community services at their discharge. Anagnostopoulos and Soumaki (2012) emphasised the reductions which have been done in public funding and personnel regarding mental health services in Greece during 2010–2012, despite the rapidly increasing mental health needs. Recently, Chatzimeonidis et al. (2021) indicated that in most cases this group of patients is being transferred to the on-call hospitals by the police in the same way as criminal offenders, without such a fixed practice being determined by the Greek Law 2071/1992. The same transferring method was also observed in Greece in the sample of a study which was conducted by the Greek Ombudsman in 2007. The Greek Ombudsman considers that this unjustifiable method is being followed due to the fact that the public prosecutor instructs the Hellenic Police to execute the order instead of the paramedic personnel. That study attributes this situation in the article 96 par. 2 of the Greek Law 2071/1992, which equivocally mentions that the patient's transfer must be done with dignity but without clarifying the exact procedure which is needed (The Greek Ombudsman, 2007).

The deinstitutionalization of psychiatric patients and their movement to the community has resulted in the police playing a crucial role in the management of acute mental health deterioration in many countries, including Greece (Cotton, 2004; Redondo & Currier, 2003). Police officers are frequently the first point of contact with psychiatric patients, particularly in emergency situations (Lamb et al., 2002). An increase in the number of contacts between the police and mentally ill individuals has been reported in several countries (Cotton, 2004; Patch & Arrigo, 1999; Vermette et al., 2005); however, there is a lack of existing data in the literature regarding this issue for Greece (Psarra et al., 2008). This is due to the difficulty of obtaining data from police records that would provide insight into the processes being followed.

The present study is based on previous work (Chatzimeonidis et al., 2021) in which the procedure of hospital admissions during the preparatory stage and the police

involvement until the individual's admission to the hospital was analysed for the first time in Greece. The data was extracted from two central police stations in Athens, Greece. The main reasoning was to investigate the procedure from a preparatory perspective before the psychiatric patients finally passed the threshold of mental health facilities. Our current study moves a step forward to update the literature by identifying risk factors and predictors related to involuntarily hospitalized (IH) patients in Greece, and analysing some of the sociodemographic, clinical, and parametric (system-related) variables mentioned in "Ethics" section. No prior study has conducted such an examination using data extracted from police records, while only one has identified risk factors for involuntary hospitalization from electronic health records of hospital patients (Stylianiadis et al., 2017a). Particularly, the current study has the following objectives:

- 1) To explore possible differences between IH patients and non-hospitalized (NH) patients related to sociodemographic, clinical, and parametric characteristics and
- 2) To identify risk factors for the hospitalization status regarding IH and NH patients.

It is worth noting that, in addition to the sociodemographic and clinical characteristics of the patients, we also take into account vital parametric (system-related) traits engaged in the procedure at the time when the public prosecutor became aware of each incident. According to Moetteli et al. (2021), we believe that the more traits are explored in the preparatory procedure of IH, the more knowledge will be gained about the characteristics of psychiatric emergencies. This might deliver suggestions for the effective management of such a sensitive subject, as well as for further improving the mental health care system within communities.

Methods

Study design, participants and setting

The current study was an observational, longitudinal study. Participants included psychiatric patients who, following police involvement, underwent a Mental Health Assessment (MHA) resulting in IH or NH based on whether they met the criteria for hospitalization defined in Article 95 of Law 2071/1992, as mentioned in the introduction. The electronic police records were recorded from 01/01/2017 to 31/12/2019, during the second phase of the national programme for IH in Greece, called "MANE" (Stylianiadis et al., 2017a, 2023).

Athens is the capital and largest city in Greece, with a population of approximately 3.153 million people. In 1997,

the National Mental Health Plan was launched, introducing new legislation in May 1999 (Law 2716/99), which marked the start of a new psychiatric reform (Madianos, 2019). Today, in-patient psychiatric care is organized on a sectoral basis, with a total of eight psychiatric units in general hospitals while the largest psychiatric hospital in Greece is the Psychiatric Hospital of Attica (Christodoulou et al., 2010).

Ethics

In the Hellenic Police, there is no requirement for additional written or oral approvals from an ethics committee. Furthermore, the data extraction was conducted under the supervision of two major police officers serving in the two related police stations, following the official research request submission to the headquarters. The written approval was undersigned by the Police Lieutenant General-Chief of Staff to Hellenic Police, ensuring that the identity of patients would remain anonymous. This research has no interventional aspects, based on its retrospective analysis method, and thus no registration was necessary. At the same time, the authors fully complied with Law 4624/2019, which refers to the General Data Protection Regulation (EU) 2016/79 (GDPR). According to Article 30, this law confers the right to scientists to conduct research that incorporates personal data collection and processing, provided that the individuals' details are protected. This research project was also performed according to the ethical standards of the 1964 Declaration of Helsinki and its later amendments. The authors have no known conflicts of interest and take responsibility for the contents of this paper.

Data collection and classification

Data collection took place in the two police stations of Ambelokipi and Dafni-Hymettus from the police internal system named "Police Online-Book of Incidents" which is an internal police system installed in all police stations of the country. The data was collected by one of the authors who works in the Hellenic Police as a Police Sergeant and as a scientific researcher. The choice to extract data from these stations was practical since the author had gained approval from his superiors and hence, access. The Police Lieutenant General Chief of Staff of the Hellenic Police provided written approval for data access and processing. All data were anonymized for analysis; all identifiable information and identifiers, such as names and addresses, were removed during the data collection stage, while demographic characteristics, such as age and gender, were used for research purposes.

The present study used two out of three groups of Chatziseimonidis et al. (2021) so as to examine the difference between IH patients and NH ones: IH group ($N=240$) and

NH group ($N=52$). With regards to the variables, sociodemographic, clinical, and parametric traits were included. The status of hospitalization (IH vs NH) was used as a dependent variable and all the others as independent variables.

The sociodemographic variables were: 1.) gender, 2.) nationality (Greek vs Immigrant), 3.) age and 4.) residency (Urban vs Rural). The clinical variables were: 1.) the diagnosis cluster which was separated into six greater groups of disorders based on the ICD-10 Classification of Mental and Behavioral Disorders (Schizophrenia schizotypal and delusional disorders, Affective disorders, Disorders of adult personality and behaviour, Organic including symptomatic mental disorders, Neurotic stress-related and somatoform disorders and Other), 2.) the first request for MHA (Yes vs No) that indicates whether the preparatory procedure of involuntary hospitalization was initiated for the first time or not and 3.) the status of hospitalization (IH vs NH). It is worth mentioning that the first diagnosis extrapolated by the on-call psychiatrists is written within their medical decision regarding the hospitalization status of each patient. This decision is recorded in the hospital's report and is conceded to the police stations in order for the record to be closed. The parametric variables were strictly related to the procedural aspects of the involuntary hospital admission process. These were: 1.) the type of prosecution order (Written: regular bureaucratic route, Verbal: emergency route) based on what procedure ought to be classified in relation to the information provided to the public prosecutor about the mental health condition of the patient, 2.) the reasons for MHA submitted to the public prosecutor (Exacerbation of psychopathological conditions, Relational conflicts, Psychosocial maladjustment with alcohol intoxication or misuse, Suicidality, Non-adherence to therapy and Other), 3.) the mediating time for MHA (Immediately: within a day vs Delayed: more than one day) which refers to the time duration from the prosecutor's order issuance given to the police until the patient finally be received by the on-call psychiatrists for MHA, and 4.) the type of hospital (General Hospital, Psychiatric Hospital) concerning the on-call practitioners in medical facilities that take the decision to admit psychiatric patients.

Statistical analyses

The present study analysed the collected data using the Statistical Package for Social Sciences (version 27.0 IBM, SPSS). All statistical tests were two-tailed, and the statistical significance was set at the .05 level. Qualitative variables were presented as relative absolute frequencies. The age as a quantitative variable was expressed as a mean value (SD). Chi-squared tests and Fisher exact tests were employed to evaluate potential differences in proportions between groups. In addition, an independent sample t-test was conducted to

compare groups regarding age. Variables that exerted significant effects on the status of hospitalization were entered as predictors in a multivariate binary logistic regression analysis with the status of hospitalization as the outcome variable. The crude odds ratio and adjusted odds ratio are depicted along with the related confidence intervals.

Results

Quotas of involuntary hospitalizations

The sample of our current study included 292 records that pertain to requests to the public prosecutor for MHA. If the criteria were satisfied an IH ensued. Out of the total, 240 (77.4%) were IH patients compared to 52 (16.8%) patients for whom the on-call psychiatrists decided that they did not meet the criteria of IH, and thus they were recorded as NH.

Preliminary descriptive analysis: the patients' profile in relation to the status of hospitalization

The sampling distribution of the summed-up total sample ($N=292$) is considered normally distributed according to the Central Limit Theorem since the condition of sample size ($N>30$) is fulfilled (Anderson, 2010). The total scores of all measures were considered normally distributed. The sociodemographic traits, the first request for MHA as a clinical trait and the type of prosecution order along with the reasons for MHA indicated no statistically significant differences between IH and NH patients. The diagnosis cluster, the mediating time for MHA and the type of hospital marked statistically significant differences between the two groups.

In particular, the majority of mental health assessments for IH patients concerned schizophrenia, schizotypal and delusional disorders (53.5%), followed by affective disorders (28.4%). Next, organic including symptomatic mental disorders amounted to other mental health disorders (7.7%). Considerably smaller proportions were recorded for the disorders of adult personality and behaviour equivalent to neurotic stress-related and somatoform disorders (1.3%). Contrastingly, the highest percentage of NH patients concerned people with affective disorders (33.3%), followed by disorders of adult personality and behaviour, neurotic stress-related and somatoform disorders, along with other mental health disorders (16.7%). Roughly half percentage of those two groups were referred to schizophrenia, schizotypal and delusional disorders and organic including symptomatic mental disorders (8.3%). ($p = .000$).

Regarding the mediating time needed for the prosecutor's order execution by the police until the detection, apprehension, and delivery of the patients to the on-call psychiatrists, when the police executed the order immediately (within a

day), IH patients (52.5%) were slightly more than those whose delivery was delayed (47.5%). However, the proportion of NH patients was dramatically higher when the police

delivered them immediately (75%) than those whose delivery was accomplished with a delay (25%) ($p = .000$).

Lastly, IH patients admitted to the general hospital (45.2%) were less than those to the psychiatric hospital (54.8%). In contrast, NH patients admitted to the general hospital (75%) were immensely more than those in the psychiatric hospital (25%) ($p = 0.004$).

The sociodemographic, clinical, and parametric characteristics of the patients are illustrated, per hospitalization status, in Tables 1 and 2.

Table 1 Sociodemographic characteristics in relation to hospitalization status

Variable	Sample	IH ^c	NH ^c	p
Gender	<i>N</i> = 292	<i>N</i> = 240	<i>N</i> = 52	0.559
Male	151 (51.7%)	121 (50.4%)	30 (57.7%)	
Female	141 (48.3%)	119 (49.6%)	22 (42.3%)	
Age	46.6 (16.6)	46.7 (16.3)	47.7 (19.1)	0.888
Nationality ^a	<i>N</i> = 290	<i>N</i> = 240	<i>N</i> = 50	0.286
Greek	265 (91.4%)	221 (92.1%)	44 (88%)	
Immigrant	25 (8.6%)	19 (7.9%)	6 (12%)	
Residency ^b	<i>N</i> = 259	<i>N</i> = 214	<i>N</i> = 45	0.394
Urban	232 (89.6%)	192 (89.7%)	40 (88.9%)	
Rural	27 (10.4%)	22 (10.3%)	5 (11.1%)	

^a 2 missing values ^b 33 missing values ^c *IH* Involuntary hospitalization; *NH* No hospitalization

Risk factors of hospitalization status

The independent variables that culminated to exert statistically significant association with the status of hospitalization were included in a multivariate binary logistic regression model attempting to indicate their independent effect sizes. These were our clinical variable “diagnosis cluster” and our parametric variables “mediating time for MHA” and “type of hospital”. Initially, the majority of variables were detected to have statistically significant effects in the

Table 2 Clinical and parametric characteristics in relation to hospitalization status

Variables	Sample	IH ^f	NH ^f	p
Diagnosis cluster ^a	<i>N</i> = 167	<i>N</i> = 155	<i>N</i> = 12	0.000***
Schizophrenia, schizotypal & delusional disorders	84 (50.3%)	83 (53.5%)	1 (8.3%)	
Affective disorders	48 (28.7%)	44 (28.4%)	4 (33.3%)	
Disorders of Adult personality and behaviour	4 (2.4%)	2 (1.3%)	2 (16.7%)	
Organic including symptomatic mental disorders	13 (7.8%)	12 (7.7%)	1 (8.3%)	
Neurotic stress-related and somatoform disorders	4 (2.4%)	2 (1.3%)	2 (16.7%)	
Other	14 (8.4%)	12 (7.7%)	2 (16.7%)	
First request for MHA ^{b,e}	<i>N</i> = 289	<i>N</i> = 240	<i>N</i> = 49	0.797
Yes	261 (90.3%)	217 (90.4%)	44 (89.8%)	
No	28 (9.7%)	23 (9.6%)	5 (10.2%)	
Type of prosecution order ^c	<i>N</i> = 289	<i>N</i> = 237	<i>N</i> = 52	0.346
Written (regular)	203 (70.2%)	164 (69.2%)	39 (75%)	
Verbal (emergency)	86 (29.8%)	73 (30.8%)	13 (25%)	
Reasons for MHA ^c	292	240	52	0.300
Exacerbation of psychopathological conditions	77(26.4%)	68 (28.3%)	9 (17.3%)	
Relational conflicts, psychosocial maladjustment with alcohol intoxication or misuse	64 (21.9%)	54 (22.5%)	10 (19.2%)	
Suicidality	19 (6.5%)	16 (6.6%)	3 (5.8%)	
Non-adherence to therapy	127 (43.5%)	97 (40.4%)	30 (57.7%)	
Other	5 (1.7%)	5 (2.1%)	0 (0%)	
Mediating time for MHA ^c	<i>N</i> = 292	<i>N</i> = 240	<i>N</i> = 52	0.000***
Immediately	139 (47.6%)	126 (52.5%)	13 (25%)	
Delayed	153 (52.4%)	114 (47.5%)	39 (75%)	
Type of hospital ^d	<i>N</i> = 267	<i>N</i> = 239	<i>N</i> = 28	0.004**
General	129 (48.3%)	108 (45.2%)	21 (75%)	
Psychiatric	138 (51.7%)	131 (54.8%)	7 (25%)	

^a 125 missing values ^{b,c} 3 missing values ^d 25 missing values ^e *MHA* Mental health assessment, ^f*IH* Involuntary hospitalization; *NH* No hospitalization. Statistical finding with bold at ** $p < 0.01$, *** $p < 0.001$

model (see Table 3). Nevertheless, regarding their independent effects, the multivariate analysis singled out two main factors, which may be protective against the status of involuntary hospital admission.

Patients diagnosed with affective disorders and neurotic stress-related and somatoform disorders indicated sharply decreased odds of being admitted involuntarily to the psychiatric units. Specifically, the likelihood of patients with affective disorders being detained was $1/0.01 = 100$ times lower than that of patients suffering from schizophrenia, schizotypal and delusional disorders. In the same vein, patients suffering from neurotic stress-related and somatoform disorders were $1/0.07 = 14.28$ times less likely to be admitted involuntarily to a psychiatric unit than patients with schizophrenia, schizotypal and delusional disorders.

Discussion

Globally, the subject of involuntary admissions has been investigated by researchers mainly based on clinical and health records (Silva et al., 2018, 2021; Stylianidis et al., 2017a; Curley et al., 2016; Huber et al., 2016; Zhou et al., 2015; Donisi et al., 2016; Chang et al., 2013; Arnold et al., 2019 & Schmitz-Buhl et al., 2019). Our current study has put different lenses on this topic and attempted to explore risk factors and predictors associated with IH and NH, based on police records. This is a sample of great importance since in Greece the police are the main communicators between the public prosecutor's office and mental health facilities. Based on the input provided by the police, the public prosecutor

will make the decision as to which route a patient should follow (standard/emergency) and be admitted or not to a psychiatric facility.

The outcomes of the current research depict that, out of the total cases in which the public prosecutor initiated the regime of involuntary MHA and subsequently admission procedure 77% of the incidents finally were recorded as IH. This is an alarming quota stressing two crucial points. Firstly, in most cases, the patient had an urgent need for mental health treatment despite its denial, and secondly, this percentage may refer to an outdated national mental health system where patients would not be able to receive treatment without being detained. In line with this, current legislation, policies, and mental health interventions which regulate compulsory community mental health must be put in place in order for the patients to receive therapies with the only obligation to take their medication and sustain regular contact with the clinicians (Dawson, 2005; Morandi, 2016).

Furthermore, no associations were detected between sociodemographic variables and the status of hospital admission, in line with the findings of Di Lorenzo et al. (2018) regarding gender and nationality. This finding contradicts Stylianidis et al. (2017a) where the researchers found significant associations for gender, nationality, age as well as family status, a fact that actually highlights the complexity of sociodemographic traits regarding psychiatric patients. Possibly, the difference was due to the fact that our sample consisted of considerably fewer cases. Further research is necessary to consolidate more reliable conclusions.

In contrast to the research conducted in the past (Douzenis et al., 2012; Peppou et al., 2022; Stylianidis et al., 2017a) the current study also put its lenses on the parametric -system

Table 3 Crude and Adjusted odds ratio (OR) with confidence intervals (95% CI) of hospitalization status

Variable	B (SE) ^a	Crude OR ^b (95% CI) ^c	p	B (SE)	Adjusted OR ^b (95% CI) ^c	p
Diagnosis cluster						
Schizophrenia, schizotypal & delusional disorders		1.00	-		1.00	-
Affective disorders	-4.42 (1.42)	0.01 (0.00–0.19)	0.002**	-4.40 (1.46)	0.01 (0.00–2.13)	0.003**
Disorders of Adult personality and behaviour	-2.40 (1.13)	0.09 (0.01–0.83)	0.034*	-21.30 (59.8)	0.02 (0.00–4.24)	0.997 ^{NS}
Organic including symptomatic mental disorders	0.00 (1.41)	1.00 (0.06–15.99)	1.000 ^{NS}	-1.20 (1.68)	0.30 (0.01–8.11)	0.476 ^{NS}
Neurotic stress-related and somatoform disorders	-2.48 (1.44)	0.08 (0.01–1.41)	0.085 ^{NS}	-2.63 (1.49)	0.07 (0.00–1.35)	0.048*
Other	-1.79 (1.26)	0.17 (0.01–1.96)	0.154 ^{NS}	-1.90 (1.35)	0.15 (0.11–2.11)	0.151 ^{NS}
Type of hospital						
General		1.00			1.00	-
Psychiatric	-1.31 (0.43)	0.27 (0.12–0.63)	0.002**	-1.00 (0.99)	0.37 (0.05–2.56)	0.312 ^{NS}
Mediating time for MHA ^d						
Immediately		1.00	-		1.00	-
Delayed	1.20 (0.35)	3.32 (1.69–6.52)	0.001**	0.04 (0.93)	0.37 (0.05–2.56)	0.312 ^{NS}

^aB Coefficient; ^{SE} Standard error, ^bOR Odd ratio, ^cCI Confidence interval, ^dMHA Mental health assessment, Statistical finding with bold at * $p < 0.05$, ** $p < 0.01$

related- variables which are strictly engaged in the procedure. The results indicated that when the patients were IH the majority of such incidents concerned the psychiatric hospitals (54.8) but when the patients were NH general hospitals were the most prevalent (75%).

This finding partially matches the results of Peppou et al. (2022) regarding the group of involuntarily hospitalized patients, where the rates were higher in the psychiatric hospital (63.1%) than in general (52.8%). Furthermore, most patients were delivered to the psychiatric units belatedly (immediately: 47.6% vs. delayed: 52.4%). This outcome may be due to the ambiguity of the current legislation regarding the transfer of patients who do not want to be involuntarily examined or hospitalized; as Article 96, Section 5 of Law 2071/1992 does not precisely state the exact procedure of patients' delivery to the on-call psychiatrists. Besides, it was observed that when the incidents concerned IH patients, the mediating time for MHA was mainly immediate (52.5%) in contrast to incidents of NH patients, where the majority of that time was delayed (75%). Taking into account that the predominant reason for MHA for both groups was nonadherence to therapy (IH: 40.4% vs. NH: 57.7%), patients who did not meet the criteria of hospitalization may have experienced a longer duration of being detained until the final medical decision. This situation reflects the current crucial flaw of the Greek national mental health system, which does not have community-based compulsory therapeutic interventions. Such a poignant situation for the aforementioned patients could be avoided if Greece followed the example of the 75 countries above, by setting up a community-based mental health system and providing therapeutic interventions within communities.

With respect to risk factors associated with the status of involuntary hospital admission, the current study depicted statistically significant effect sizes for the clinical variable which was the diagnosis cluster. This contradicts the findings of Di Lorenzo et al. (2018), where the researchers did not identify statistically significant effects of the diagnoses included in their sample in relation to hospitalization status. Male gender, age, and immigrant status of nationality did not record independent effects which is in line with Stylianidis et al. (2017a) and in contrast to a series of other studies (Di Lorenzo et al., 2018; Myklebust et al., 2012; Vinkers et al., 2010; Wierdsma & Mulder, 2009; Lorant et al., 2007). A possible explanation is that their effect size was overshadowed by other variables of the model, particularly that of the diagnosis cluster.

With regards to the diagnosis cluster, affective disorders, as well as neurotic stress-related and somatoform disorders, seemed to exert a protective factor against the status of involuntary hospital admission compared to schizophrenia, schizotypal and delusional disorders. This finding may mirror the dysfunctionality of the current national mental health

system in Greece to provide community-based therapeutic interventions that are compulsory but outside clinical settings for severe mental health illnesses; in contrast to 75 countries which have solved such a pivotal ethical, political, clinical, legislative, and cultural issue (Rugkåsa, 2016). Such strategies and policies have already taken place in Sweden since 2015 (Bouveng et al., 2017) and in Norway since 2008 (Hasselberg, et al., 2011). At the same time, we might justify such a result as an indication of reduced knowledge from on-call mental health practitioners in relation to diagnostic groups drawn on ICD-10; when patients manifest acute symptoms of their condition; therefore, involuntary hospitalization is a one-way road where the subject in question will be addressed (Stylianidis et al., 2017a; Weiler et al., 2000).

Furthermore, the literature suggests that a variety of parametric factors are associated with involuntary hospitalizations. These include a lower level of service integration (Schmitz-Buhl et al., 2019; Wierdsma & Mulder, 2009), the availability of inpatient beds (Lay et al., 2011; Sheridan Rains et al., 2019), previous use of mental healthcare services (Lebenbaum et al., 2018; Stylianidis et al., 2017a; Zhou et al., 2015), referral procedures such as contact with the police (Hustoft et al., 2018), and long waiting times for receiving appropriate mental healthcare (Bindman et al., 2002; Schmitz-Buhl et al., 2019). Our study examined two additional parametric factors in association with the status of involuntary admission. However, our multivariate model did not detect significant effects, possibly because the effect size being mediated by the diagnosis cluster. In particular, the psychiatrists' decision in psychiatric hospitals concerning the implementation and assessment of criteria for involuntary admission was not found substantially different from those in general hospitals regarding the likelihood of involuntary admission. This finding reflects that psychiatrists may meet similar concerns and difficulties without particular biases in either the general or the psychiatric type of hospitals in applying the criteria and assessing the necessity of involuntary care according to the Greek mental health legislation.

Furthermore, the patients who belatedly received by the on-call psychiatrists after the prosecutor's order for MHA did not comprise an independent influence on compulsory admissions. This result may have arisen because at the late time that patients were received by the on-call medical personnel, did not justify the criteria for involuntary admission based on their clinical picture, at the time. Therefore, the psychiatrists may have considered that it was not necessary the measure of involuntary admission for these patients. Another possible explanation might also be that the patients during this delay may have changed their minds for various reasons and eventually cooperated with the on-call medical staff to receive mental healthcare, voluntarily. In any case, all this delay in the preparatory stage of the procedure and hassle for the patients

above could be massively minimized if the Greek mental health system would follow community-based interventions policies and practices (Chatzisimeonidis et al., 2021; Rugsåsa, 2016). Further research is necessary to identify whether system-related parameters in the current Greek mental health system concerning the preparatory stage of the related procedure are associated with involuntary hospitalizations.

This study should account for its limitations. Plenty of records included data that were deficient and therefore all the parameters of this study were impossible to be recorded. Another shortfall was also the representativeness of the information since it was extracted only from two central police stations in Athens, Greece, and hence they lacked generalizability. The diagnoses were based on acquiescent documented psychopathology which was written in the medical report receipt of each hospital given to the police in order for the record to be completed. Lastly, there were numerous missing values owing to the fact that the Hellenic Police lacks strict internal regulations which stipulate specific data recording for this procedure. In addition, in the information extracted by police records, which were retrospectively analysed, we could not find details about marital and socio-economic status and education attainment, which would be useful in the explanation of the likelihood of IH.

Conclusion

This study endeavoured to shed light on the process of involuntary hospital admissions in accordance with the involvement of law enforcement agencies in Greece (the justice and the police). The results highlighted that involuntary hospitalizations are deeply entrenched in the Greek mental health system, in which the police are involved by playing a mediating role between the justice (public prosecutor) and the mental health services when the procedure is initiated.

Even though the European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment (CPT) has already documented crucial deficiencies regarding the current legislation and practices in Greece (European Committee for the Prevention of Torture and Inhuman or Degrading Treatment or Punishment, 2019), the Greek legislation *remains ambiguous in many points and out of date*. Unfortunately, 30 years after the last psychiatric law (no: 2071/1992) and in light of the imminent psychiatric reform completion and implementation, involuntary hospitalization remains a pivotal subject in question with procedural downsides. Simultaneously, its preparatory phase *still mainly burdens the Hellenic Police whose role should be ancillary and be substituted by trained community mental health practitioners* responsible also for involuntary MHA and therapeutic interventions within communities.

In conclusion, future research should also concern the exploration of attitudes and beliefs of first-line police officers and magistrates regarding effective strategies in the preparatory management of involuntary hospitalization incidents which will be of high value to mental health policymakers.

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Data availability Data cannot be available, as this was a prerequisite from the provider.

Declarations

Ethics approval The current research was conducted in accordance with ethical standards of the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. Written approval was granted by the Hellenic Police and particularly by the Police Lieutenant General-Chief of Staff to Hellenic Police.

Competing interests The authors have no competing interests to declare, relevant to the content of this article.

Conflicts of interest None to declare.

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