

Physical Restraint Practices at the Emergency Department of a Mental Health Hospital

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ABSTRACT

Background: Coercive treatments can lead to ethical, legal, and clinical concerns, especially in emergency settings. The indications and characteristics of patients for whom physical restraint is indicated should be well-evaluated in order to prevent unnecessary practices. The aim of this study was to comprehensively assess the physical restraint practices in psychiatric emergencies and clinical characteristics related to their use.

Methods: All patients admitted to the emergency unit of a tertiary mental health hospital between June 1 and June 30, 2022, were included in the sample. Data were retrieved from the manual and electronic medical records. Age, gender, clinical settings, diagnosis, substance use, and other factors were categorized and analyzed, comparing physically restrained and not-restrained patients.

Results: Totally, 2051 patients were included in the study (1022 female and 1029 male). The mean age of the participants was 39.5 ± 14.8 years (female: 40.3 ± 14.8 male: 38.4 ± 14.7 , $P = .004$). Seventy-two (3.51%) of the admitted patients were exposed to physical restraint and those had significantly lower number of applications in the past year ($P = .020$). The median restraint duration was 90 (60-150) minutes. Fifty-four (75.00%) of the physically restrained patients were male ($P < .001$), and they were significantly younger (mean age 34.5 ± 12.1 vs. 39.5 ± 14.9 , $P = .005$). Clinical diagnoses of restrained patients were significantly different, in favor of psychosis. While 42 (58.33%) of the restrained patients were substance-negative, 15 (20.83%) were screened as positive for at least 1 substance ($P < .001$).

Conclusion: Physically restrained patients differ from others with regard to age, gender, and number of previous applications. Fewer hospital applications in the past year were related to higher incidence of physical restraints.

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INTRODUCTION

Coercion is a general term used to refer to a series of actions that are taken when an individual poses a danger to themselves and/or others due to a mental disorder. It encompasses a range of interventions, from involuntary treatments without consent to isolation or physical restraints that restrict the movement of the patient. Restraint can be of manual, mechanical, or chemical nature (the use of psychotropic drugs to restrict movement for purposes other than treatment).¹⁻⁴

The prevalence of coercive treatment practices varies widely between different countries, ranging from 15 to 227 per 100 000.^{4,5} Obtaining comprehensive nationwide data on these practices might become challenging,⁶ yet, it has been shown that coercive treatments are more common in countries with high rates of psychiatric hospitalizations.⁵ Differences in infrastructure among institutions and staff

characteristics also affect the use of physical restraint practices.⁷

In Turkey, retrospective cross-sectional studies have also identified varying prevalence rates in this regard.^{3,8,9} Studies conducted in Turkey and abroad have shown that variables such as the patient's gender, aggressive behavior, the severity of aggression, the use of psychoactive substances, and working/shift hours are related to the extent and duration of physical restraint practices.^{2,3,7,8,10} Furthermore, differences in the approach of clinicians can also influence these outcomes.¹¹

Legal regulations regarding physical restraint practices vary in each country.^{1,5,12} In Turkey, legal regulations regarding compulsory treatment and restraint practices are included in various laws, such as the Turkish Penal Code, the Code of Criminal Procedure, the Turkish Civil Code, and the Law

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on the Execution of Criminal and Security Measures. The presence of different legal frameworks on the same issue can sometimes lead to difficulties in practice. It is also observed that clinical teams occasionally need to take their own initiative in some cases.¹³ Nevertheless, according to the World Psychiatric Association's position statement, there is an excessive use of coercive treatments, and it is crucial to generate alternatives. It is emphasized that "the generation of these alternatives should not imply a reduction in access to treatment or expose patients to dangerous situations."¹ The rare but potentially fatal complications associated with physical restraint methods highlight the need for extremely careful approaches in these practices.⁴

At the Erenköy Mental Health and Neurological Diseases Training and Research Hospital Emergency Department, coercive treatment practices are carried out within the framework of relevant legal regulations and based on a standardized algorithm. Clinical information about patients subjected to physical restraint under emergency conditions is recorded, and official approval of the practice is necessary by both nurses and physicians.

This study aims to comprehensively evaluate coercive treatment practices at the Erenköy Mental Health and Neurological Diseases Training and Research Hospital Emergency Department and to identify factors related to the use of physical restraint. The aims of this study were: (i) to determine the rate and duration of physical restraint in patients admitted to the psychiatry emergency department, and (ii) to compare patients who were exposed to physical restraint with those who were not, in terms of sociodemographic and clinical factors.

MATERIAL AND METHODS

This study has been designed as a descriptive cross-sectional study. All adult cases who presented to the Erenköy Mental Health and Neurological Diseases Training and Research Hospital Emergency Department between June 1 and June 30, 2022, were included in the analysis, while patients under 18, those that applied for reasons other than psychiatric emergencies or had missing data, were excluded. The collected data were categorized

based on the sociodemographic and clinical variables (age, gender, diagnosis, substance use, and other factors) as well as details related to physical restraint (duration, shift of the day, complications if any, etc.). Patients' data was collected from electronic and manual medical records, and all identifying information was omitted during the analysis for the sake of anonymity. Confidentiality of personal data was preserved throughout the study and data was only used by the researchers. Informed consent of the patient or a first-degree relative was obtained upon the indication of physical restraint, in written form in the logbook of the emergency department. The study was conducted in accordance with the Declaration of Helsinki. Ethical approval for the study was received from the Clinical Ethics Committee of Erenköy Mental Health and Neurological Diseases Training and Research Hospital (Approval No: 2022/41) and permission of access for clinical data was obtained from the hospital administration (July 7, 2022).

Statistical Analysis

Distribution of normality for numeric variables was determined using the Kolmogorov-Smirnov test. It was hypothesized that the physically restrained patient group would have statistically significant differences from the not-restrained group with regard to age, gender, previous number of hospital admissions, and clinical characteristics such as diagnosis and substance use. The Pearson's chi-square test was used to compare nominal independent variables, with the exception of small-sized categories, when the minimum expected count is less than 5; in which case Fisher's exact test was used. The independent samples *t*-test or Mann-Whitney *U*-test was used when independent continuous variables between groups (restrained and not-restrained) were compared, based on whether the data is normally distributed or not, respectively. Descriptive statistics of the data are presented with *n* (%), together with "median (25-75% percentile)" for non-normally distributed data and "mean ± standard deviation" for normally distributed data. The type 1 error rate was set at 0.05. Statistical analyses were conducted using IBM Statistical Package for the Social Sciences program version 22.0 (IBM SPSS Corp.; Armonk, NY, USA).

RESULTS

A total of 2051 (1022 female and 1029 male) patients were included in the study. The mean age of the participants was 39.5 ± 14.8 years (female: 40.3 ± 14.8 , male: 38.4 ± 14.7 , $P = .004$). A total of 1150 (56.07%) patients presented at the shift between 08:00 AM and 04:00 PM, 699 (34.08%) between 04:00 PM and 12:00 AM, and 202 (9.85%) between 12:00 AM and 08:00 AM. The number of admissions in the past year was not normally distributed, and the median number of admissions in the past year was 1 (1-3).

Regarding the admission, 1481 (75.68%) of the patients applied upon individual will, while 352 (17.99%) of them

MAIN POINTS

- Coercive measures are still a major controversy in psychiatry.
- At the emergency department presentations, physically restrained patients differ from others with regard to age, gender and number of previous applications.
- The majority of psychiatric patients who were exposed to physical restraints are males, around 5 years younger than those who were not, having a diagnosis favoring psychotic spectrum disorders and being brought by an accompanying family member or staff.
- Less frequent contact with health professionals in the past year is related to a greater need for physical restraints.

were brought by their relatives, 67 (3.42%) were admitted based on a court order, and 15 (0.77%) were referred from other health-care institutions. Additionally, 42 (2.14%) of the patients were in a prisoner status. Details regarding the various characteristics of presentations of the patients were as follows: 723 (35.25%) of them applied alone, while 1019 (49.68%) were with their relatives, 79 (3.85%) were accompanied by emergency health staff, 52 (2.53%) were accompanied by both emergency staff and the police, 54 (2.63%) were accompanied by law enforcement officers based on a court order, 19 (0.93%) were in a prisoner status and accompanied by gendarme officers, and 5 (0.24%) were transferred from a shelter.

The highest rates of emergency department diagnoses were in the category of mood disorders, i.e., bipolar spectrum disorders 522 (25.45%) and major depression 260 (12.68%) (Table 1). Fifty (2.44%) patients had more than 1 diagnosis, while a psychiatric diagnosis was excluded in 114 (5.56) of them. During the admission, 487 (23.74) people were administered antipsychotics and 354 (17.26) were administered benzodiazepines.

Seventy-two (3.52%) of the admitted patients were exposed to physical restraint during their emergency admission, while 1979 (96.48%) were not. The median physical restraint duration was 90 (60-150) minutes. 54 (75.00%) of the physically restrained patients were male and 18 (25.00%) were female ($P < .001$). Of the 72 physically restrained patients, 33 (45.83%) were admitted between 08:00 AM-04:00 PM, 27 (37.50%) between 04:00 PM-12:00 AM, and 12 (16.67%) between 12:00 AM-08:00 AM.

Table 1. Distribution of Psychiatric Diagnoses Among Emergency Department Presentations

Diagnosis	n	%
Schizophrenia spectrum disorders	341	16.63
Bipolar spectrum disorders	522	25.45
Major depression	260	12.68
Mixed anxiety and depressive disorder	140	6.83
Anxiety spectrum disorders	251	12.24
Alcohol/drug use disorders	138	6.73
Intellectual disabilities/behavioral problems	92	4.49
Non-psychiatric diagnoses	114	5.56
Multiple psychiatric diagnoses	50	2.44
Dissociative disorders	27	1.32
Adjustment disorder/trauma and stress-related disorders	42	2.05
Personality disorders	11	0.53
Organic mental disorders/sleep disorders	16	0.78
Drug-induced psychosis	31	1.51
Attention deficit and hyperactivity disorder	7	0.33
Missing data	9	0.43
Total	2051	100.00

There was no significant difference in terms of the day and night shifts among the restrained patients ($P = .051$). Those who were restrained were significantly younger than those who were not (34.5 ± 12.1 vs. 39.5 ± 14.9 , $P = .005$, see Table 2). Clinical diagnoses of restrained patients were significantly different than those who were not, in favor of psychosis (Tables 2 and 3). The highest rate of diagnosis among physically restrained patients was schizophrenia spectrum disorders, bipolar spectrum disorders, and major depression [27 (37.50%), 15 (20.83%), 2 (2.78%), respectively, $P < .001$]. A significant majority of the restrained were brought to the emergency department by their relatives [42 (58.33%); $P < .001$], in comparison to the non-restrained group who were mainly admitted upon their own will [528 (26.68%) vs. 1451 (73.32%), $P < .001$]. Twenty-six (36.11%) of the restrained patients were accompanied by ambulance and/or police ($P < .001$). Among the restrained patients that were screened for substances, while 42 (58.33%) were substance-negative, 9 (12.50%) were screened as positive for 1 substance and 6 (8.33%) were positive for more than 1 substance ($P = .001$). Antipsychotics were administered to 60 (83.33%) and benzodiazepines were administered to 15 (20.83%) of the restrained patients ($P < .001$, $P = .414$, respectively). Compulsory hospitalization was indicated for 48 (66.67%) patients ($P < .001$) (Table 2).

Table 2. Comparison of Clinical Characteristics of Patients Who Were Restrained and Not Restrained

	Physical Restraint (n=72)	No Physical Restraint (n=1979)	P
	Mean ± SD	Mean ± SD	
Age (years)	34.5 ± 12.1	39.5 ± 14.9	.005
	Median (25%-75%)	Median (25%-75%)	
Illness duration (months)	84 (54-120)	72 (42-108)	.580
Number of applications in the past year	1 (1-2)	1 (1-3)	.020
	n (%)	n (%)	
Gender (female)	18 (25.00)	1004 (50.73)	<.001
Rate of admission during the day shift (08:00 AM-4:00 PM)	33 (45.83)	1117 (56.44)	.075
Admission upon their own will	30 (41.67)	1451 (73.32)	<.001
Screening positive for >1 substance	6 (8.33)	29 (1.46)	.001
Rate of schizophrenia spectrum disorders	27 (37.50)	314 (15.86)	<.001
Admission of antipsychotics	60 (83.33)	427 (21.58)	<.001
Admission of benzodiazepines	15 (20.83)	339 (17.13)	.414
Compulsory hospitalization	48 (66.67)	192 (9.70)	<.001

Table 3. Distribution of Psychiatric Diagnoses Among Restrained Patients

Diagnosis	n	%
Schizophrenia spectrum disorders	27	37.50
Bipolar spectrum disorders	15	20.83
Major depression	2	2.78
Alcohol/drug use disorders	6	8.33
Intellectual disabilities/behavioral problems	7	9.73
Multiple psychiatric diagnoses	6	8.33
Organic mental disorders	2	2.78
Drug-induced psychosis	6	8.33
Adjustment disorders	1	1.39
Total	72	100.00

DISCUSSION

Coercive measures are still one of the main controversial issues in psychiatry. Despite various studies in Turkey and abroad, the outcomes are inconclusive and dilemmas on the use of physical restraint exist.¹⁴⁻¹⁷ Therefore, there is still a need for research that could contribute to preventive approaches. Our study suggests a profile of patients who were exposed to physical restraints, with the majority being males, around 5 years younger, having a diagnosis favoring psychotic spectrum disorders, being brought by an accompanying family member or staff, and finally, having a lower number of hospital visits in the past year. Such a clinical profile might serve as a clue for clinicians to be more prepared before and during clinical examinations in terms of avoiding unnecessary restraint. These findings support the assessment that patients who are restrained might also be those who are the most vulnerable service users,¹⁸ underlining the importance of prevention in this group.

For those patients for whom an emergency restraint was indicated, antipsychotic medication was significantly more commonly used, whereas benzodiazepines are not as often administered. This could be due to the difficult nature of administering oral medication, as most often sublingual lorazepam is used in the emergency department. Moreover, our findings are, although indirectly, underscoring the need for the use of parenteral lorazepam, which is unavailable in our country.¹⁹

Our findings are comparable with a study conducted in the same center recently, with regard to emergency department diagnoses.²⁰ The distribution of diagnoses is also similar to another study from a mental hospital in Istanbul, with a lower rate of emergency hospitalizations at our hospital.²¹ A study from another training hospital in Turkey has also found no significant difference with regard to the working hours,³ which might be related to the general lower rate of admissions during night shifts. Yet, findings from other studies indicate that restraint measures are more often resorted to during night shifts.^{3,8,22}

One of the strengths of this study is that the hospital where this study was conducted is one of Turkey's major mental health centers, so the outcomes are expected to contribute to nationwide assessment and prevention studies in this field. The results of our study contribute to the discussions regarding the clinical, ethical, and legal dimensions of the issue and are relevant for both clinicians, patients, and their families. Our findings are based on retrospective data retrieved from medical records, therefore causative relationships cannot be determined. Another limitation of the study is that it is a single-center study, lacking comparative data from similar mental health centers for a more global overview of the status regarding restraint practices.

In conclusion, our study suggests that physically restrained patients differ from others with regard to age, gender and number of previous applications. Fewer hospital applications in the past year are related with higher incidence of physical restraints. We believe that factors related to physical restraints need to be closely and periodically monitored to achieve better medical practices, in compliance with contemporary human rights.

Ethics Committee Approval: This study was approved by the Ethics committee of Erenköy Mental Health and Neurological Diseases Training and Research Hospital (Approval number: 2022/41, Date: July 7, 2022).

Informed Consent: Informed consent was obtained from the patients or a first-degree relatives who agreed to take part in the study.

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