



Title: Use of Restrictive Interventions Among Youths With Serious Emotional Disturbances Treated in State Inpatient Psychiatric Hospitals

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Background: The use of restrictive interventions in inpatient psychiatric hospitals has received increased attention and scrutiny as it may be dangerous, traumatic, and fatal¹. Studies have demonstrated that the use of restrictive measures can have adverse physical and psychological effects on patients, as well as staff². Regarding children and adolescents, certain demographic variables such as age, sex, and length of stay are related to the rate of use of restrictive interventions³. Youths with serious emotional disturbances (SED) often have experienced traumatization during their upbringing; thus, the use of restrictive interventions among these patients may result in further traumatization⁴. Rates of seclusion and restraint also vary by hospital settings; organizations with policies rooted in a restraint-free environment philosophy have shown to report lower rates of restriction³.

Objectives: This study explores the number of restrictive interventions used among youths with serious emotional disturbances (SED) served in state inpatient psychiatric hospitals, and identifies the significant demographic and clinical factors related to the use of restrictive interventions among youths with SED.

Method: This cross-sectional study included data for 2,723 episodes of care from a cohort of youths that were treated in 37 state inpatient psychiatric hospitals; were discharged between January 1 and December 31, 2020; and were between 12 and 17 years of age at the time of admission. Restrictive interventions included the use of physical restraints or seclusion. Frequency analysis was used to determine the proportion of SED diagnosis and the number of restrictive interventions used. Chi-square and analysis of variance were used to describe the relationship between demographic and clinical variables and the use of restrictive interventions.

The ICD-10 diagnosis codes used to create the SED diagnosis variable include:

Bipolar with & without psychosis = F30.10, F30.11, F30.12, F30.13, F30.2, F30.3, F30.4, F30.8, F30.9, F31.0, F31.10, F31.11, F31.12, F31.13, F31.2, F31.30, F31.31, F31.32, F31.4, F31.5, F31.60, F31.61, F31.62, F31.63, F31.64, F31.70, F31.71, F31.72, F31.73, F31.74, F31.75, F31.76, F31.77, F31.78, F31.81, F31.89, F31.9

MDD with & without psychosis = F32.0, F32.1, F32.2, F32.3, F32.4, F32.5, F32.81, F32.89, F32.9, F33.0, F33.1, F33.2, F33.3, F33.40, F33.41, F33.42, F33.8, F33.9, F34.0, F34.1, F34.8, F34.81, F34.89, F34.9, F39

Anxiety = F40.00, F40.01, F40.02, F40.10, F40.11, F40.210, F40.218, F40.220, F40.228, F40.230, F40.231, F40.232, F40.233, F40.240, F40.241, F40.242, F40.243, F40.248, F40.290, F40.291, F40.298, F40.8, F40.9, F41.0, F41.1, F41.3, F41.8, F41.9, F42.2, F42.3, F42.4, F42.8, F42.9, F43.0, F43.10, F43.11, F43.12, F43.20, F43.21, F43.22, F43.23, F43.24, F43.25, F43.29, F43.8, F43.9, F44.0, F44.1, F44.2, F44.4, F44.5, F44.6, F44.7, F44.81, F44.89, F44.9, F45.0, F45.1, F45.20, F45.21, F45.22, F45.29, F45.41, F45.42, F45.8, F45.9, F48.1, F48.2, F48.8, F48.9

Eating disorders = F50.00, F50.01, F50.02, F50.2, F50.81, F50.82, F50.89, F50.9

ADHA = F90.0, F90.1, F90.2, F90.8, F90.9

Conduct & oppositional defiance disorders = F91.0, F91.1, F91.2, F91.3, F91.8, F91.9

Results: Eighty-five percent of youths ($n=2,316$) were treated for SED. There was a total of 1,040 restrictive interventions documented. Boys with SED (15%), [$X^2(1, N = 2,316) = 17.4, p < .001$]; who were Black (18%), [$X^2(4, N = 2,316) = 26.2, p < .001$] experienced higher number of restrictive interventions. Youth that were admitted involuntarily (21%), [$X^2(2, N = 2,316) = 16.2, p < .001$]; that were referred by the justice system (21%), [$X^2(5, N = 2,316) = 39.8, p < .001$]; or whose living arrangements were jail (45%), [$X^2(5, N = 2,316) = 84.8, p < .001$] had the highest rate of restrictive interventions. Youths with a length of stay between 1 and 3 months (16%) or greater than 3 months (16%) had the highest proportion of episodes of care that included restrictive measures [$X^2(3, N = 2,316) = 46.9, p < .001$]. Age also yielded a significant relationship with the restrictive interventions.

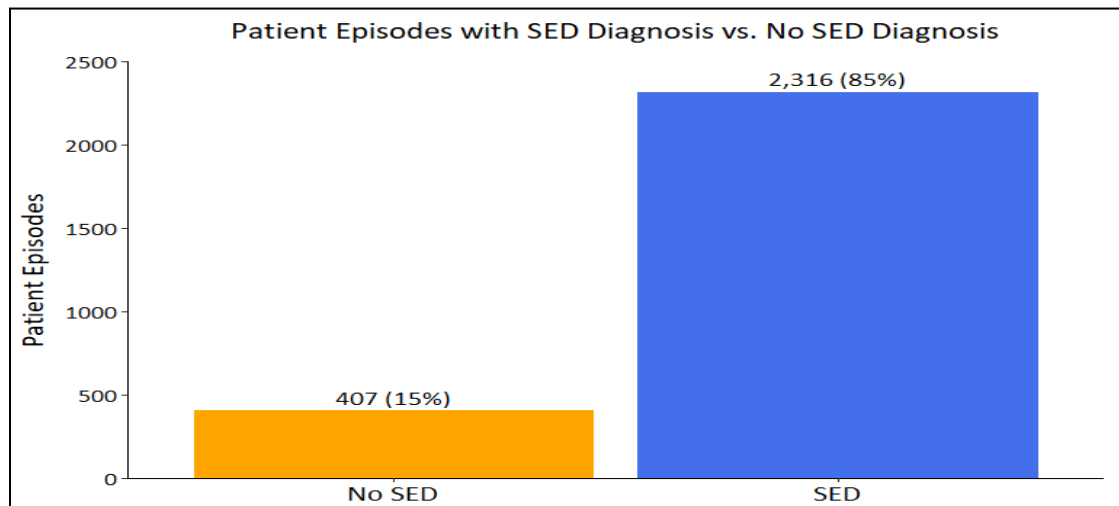
Conclusion: There was a significant variation in the use of restrictive interventions by hospitals, demonstrating an opportunity for quality-of-care improvement. Hospitals may identify sub-groups of patients at higher risk of restraint or seclusion to implement strategies toward the reduction of such interventions and the prevention of the psychological and physical harm they cause to patients.

Limitations: The sample included discharges from state psychiatric hospitals, therefore generalization to other psychiatric hospitals may not be possible. Data were extracted from the BHPMS which contains limited data about discharges. Other factors not included may account for variations in the use of restrictive measures during the hospitalization. Misclassification of diagnosis may occur due to the hierarchical algorithm applied to the data possibly under-counting in certain diagnoses groups.

References:

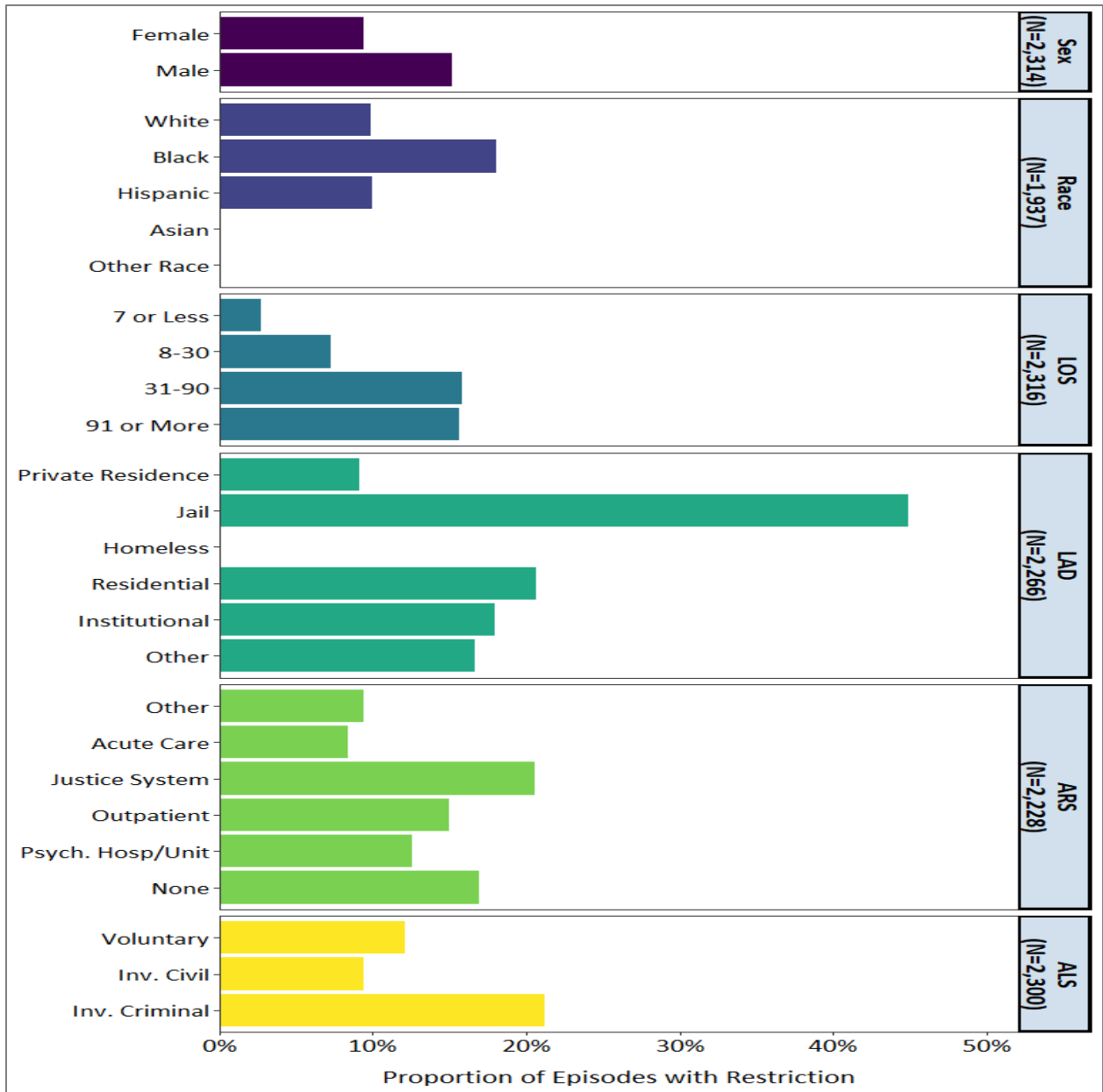
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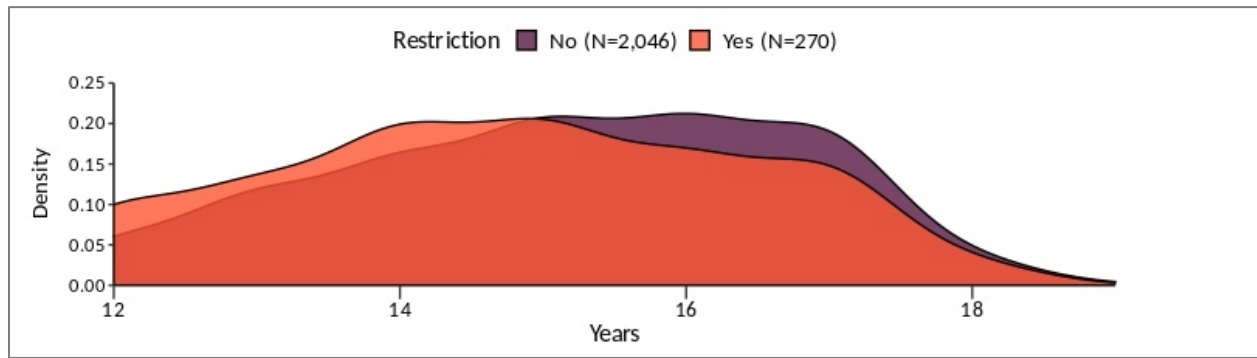
Data:



Characteristics of Episodes of Care by Restriction Status							
Characteristic	No Restriction n=2,046 (88%)		Restriction n=270 (12%)		Overall n=2,316		p value
	N	%	N	%	N	%	
Sex							<.001
Female	1,292	63.1	134	49.6	1,426	61.6	
Male	753	36.8	135	50.0	888	38.3	
Unknown	1	0.0	1	0.4	2	0.1	
Race							<.001
White	1,248	61.0	137	50.7	1,385	59.8	
Black	308	15.1	68	25.2	376	16.2	
Hispanic	117	5.7	13	4.8	130	5.6	
Asian	27	1.3	0	0.0	27	1.2	
Other Race	19	0.9	0	0.0	19	0.8	
Unknown	327	16.0	52	19.3	379	16.4	
Living Arrangements after Discharge (LAD)							<.001
Private Residence	1,616	79.0	163	60.4	1,779	76.8	
Jail	27	1.3	22	8.1	49	2.1	
Homeless	6	0.3	0	0.0	6	0.3	
Residential	123	6.0	32	11.9	155	6.7	
Institutional	119	5.8	26	9.6	145	6.3	
Other	110	5.4	22	8.1	132	5.7	
Unknown	45	2.2	5	1.9	50	2.2	

Characteristics of Episodes of Care by Restriction Status - Continuation						
Admission Referral Source (ARS)						<.001
Acute Care	1,080	52.8	99	36.7	1,179	50.9
Justice System	224	10.9	58	21.5	282	12.2
Outpatient	279	13.6	49	18.1	328	14.2
Psychiatric Hospital/Unit	229	11.2	33	12.2	262	11.3
Other	96	4.7	10	3.7	106	4.6
None	59	2.9	12	4.4	71	3.1
Unknown	79	3.9	9	3.3	88	3.8
Admission Legal Status (ALS)						<.001
Voluntary	1,158	56.6	160	59.3	1,318	56.9
Involuntary – Civil	770	37.6	80	29.6	850	36.7
Involuntary – Criminal	104	5.1	28	10.4	132	5.7
Unknown	14	0.7	2	0.7	16	0.7
Length of Stay (LOS)						<.001
7 or Less	108	5.3	3	1.1	111	4.8
8-30	872	42.6	68	25.2	940	40.6
31-90	571	27.9	107	39.6	678	29.3
91 or More	495	24.2	92	34.1	587	25.3





Research Study Information:

This research study was presented as part of the American Academy of Children & Adolescent Psychiatry 2022 Annual Meeting in Toronto, Canada on October 19, 2022.

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