

Children's Mercy Kansas City

SHARE @ Children's Mercy

Research at Children's Mercy Month 2022

Research at Children's Mercy Month

5-2022

Characteristics Of Hospitalized Children Associated With Restraint Use At A Free-Standing Children's Hospital

Adrienne DePorre

Vincent S. Staggs

Ingrid Larson

Ashley Daly

Cy Nadler

Follow this and additional works at: https://scholarlyexchange.childrensmercy.org/research_month2022

Restraint Use at a Free-Standing Children's Hospital: Square Peg in a Round Hole

Adrienne DePorre MD, Vince Staggs PhD, Ingrid Larson DNP; Ashley Daly MD, Cy Nadler PhD

Children's Mercy Kansas City

Background

- Little is known about hospitalized children associated with restraint use for violent behaviors
- Improved understanding of child characteristics associated with restraint use can inform interventions to reduce restraint use and improve care equity

Methods

- All admissions from 1/1/2017-12/31/2021 at a children's hospital with no psychiatric or behavioral health unit were abstracted
- Restraint use and covariates identified by query of electronic medical record
- Relative risk of restraint was modeled as function of patient and hospitalization using mixed Poisson model

Patient Characteristics

	All n=29,292	Not restrained n=29,071	Restrained N=221	Relative risk (95% CI)	P-value
Sex					
Female	14502	14417	85	0.4 (0.3, 0.6)	<0.001
Age *	12 (8,15)	12 (8, 15)	14 (12, 16)	1.1 (1, 1.1)	<0.001
Weight *A	0.5 (-0.4, 2.4)	0.5 (-0.4, 2.4)	0.7, (-0.2,1.5)	1.2 (1.1, 1.3)	<0.001
Race/ Ethnicity					<0.001
Black	4092 (14%)	4019 (14%)	73 (33%)	1.8 (1.3,2.5)	.001
Hispanic	3499 (12%)	3486 (12%)	13 (6%)	0.6 (0.2, 1.0)	.082
Multiracial	1975 (7%)	1958 (7%)	17 (8%)	1.3 (0.7,2.3)	.361
White	19726 (67%)	19608 (67%)	118 (53 %)	Referent	----
Payer					.122
Self-pay/ other	1696 (6%)	1689 (6%)	7 (3%)	0.8 (0.4, 1.75)	0.616
Public	13095 (45%)	12953 (45%)	142 (64%)	1.4 (1, 1.9)	0.07
Private	14469 (49%)	14397 (50%)	72 (33%)	Referent	--
Mental Health Diagnosis	2903 (10%)	2764 (10%)	139 (63%)	9.6 (7.0, 13.1)	<0.001

*described as median, interquartile range; ^A weight z-score is adjusted for age and sex

Results

- 221 patients (0.75%) were restrained across 271 hospitalizations
- Compared to patients without restraint use, restrained children were more likely to be male, Black, have higher adjusted weight z-scores, and have a mental health (MH) diagnosis
- Among restrained patients, the most common MH diagnoses were suicidality (53%), disruptive behavior (49%), attention-deficit/hyperactivity (49%), depression (42%), and anxiety (40%)

Conclusions

- Results suggest sociodemographic disparities in restraint use in response to violent behaviors
- Multicenter studies investigating health disparities, hospital-level variation, and associated clinical outcomes of restraint use are needed