



## Introduction

- Aggression exhibited by patients on psychiatric inpatient units most often are responsible for staff member injury (Staggs, 2015)
- Injury on psychiatric inpatient units is a leading cause of burnout and turnover in these settings (Kontio et al., 2014; Staggs, 2015)
- Children and adolescents diagnosed with intellectual and developmental disabilities (IDD) are more likely than neurotypical children to engage in aggressive behaviors warranting psychiatric hospitalization (Gabriels et al., 2014)
- There has been limited research understanding the variables affecting staff member injury on psychiatric inpatient units serving pediatric patients with IDD
- Intervention to decrease staff member injury on these specialized inpatient units is lacking
- The purpose of the current study was to evaluate staff member and patient characteristics that led to staff member injury on the Neuropsychiatric Special Care Unit (NSC Unit) from 2016 – 2018

## Methods

### Participants, Settings, and Materials

- Participants were patients diagnosed with IDD admitted to the NSC Unit and the staff providing care for these patients
- These patients accounted for 117 injuries between 2016 – 2018
- The NSC Unit is a four-bed psychiatric inpatient unit with an 8-patient partial hospitalization program

### Materials used :

- Daily staffing sheets from 2013-2018,
- EPIC records of patients that injured an NSC staff member
- Descriptions of injuries submitted by NSC staff members to Occupational Health at Children's Hospital Colorado

### Experimental Analysis and Dependent Variables

- Descriptive analyses, chi-square tests, and Pearson correlation analyses were conducted
- Dependent variables included:
  - injuries that occurred in the context of an injury
  - severity of staff member injury
  - number of all staff
  - number of all patients
  - patient diagnoses
  - patient height and weight

## Results

Variable	Mean	Standard deviation	Minimum	Maximum
Age	14.45	2.11	9.00	17.00
Height	162.28 cm	9.19 cm	140.00 cm	177.00 cm
Weight	62.58 kg	18.39 kg	26.00 kg	123.00 kg
IQ	40.30	9.45	20.00	66.00

Table 1. Demographic data for patients responsible for staff member injury on the NSC Unit.

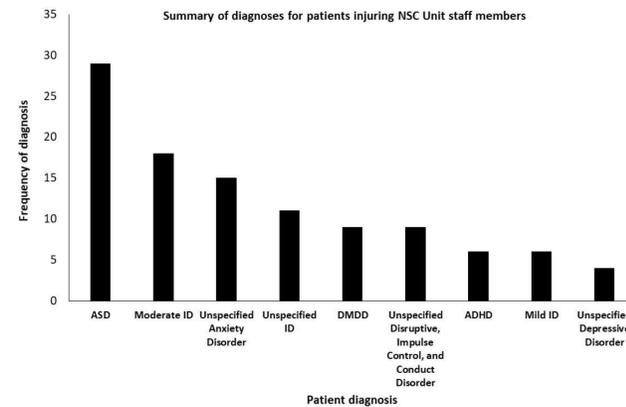


Figure 1. Bar graph depicting the most frequently seen diagnoses amongst patients responsible for staff member injury on the NSC Unit.

Staff Variable	Variable Significance	Correlation
Total staff on unit	Total staff on the unit and staff member injury were not significantly correlated.	r = 0.032, p = 0.6937
Staff response to escalations with restraint (before 10/2017)	Staff response to behavioral escalations prior to October 2017 was significantly related to staff injury.	r = 0.30, p = 0.0011
Staff response to escalations without restraint (before 10/2017)	Staff response to behavioral escalations prior to October 2017 was not significantly related to staff injury.	r = -0.022, p = 0.8126
Staff response to escalations with restraint (after 10/2017)	Staff response to behavioral escalations after October 2017 was significantly related to staff member injury.	r = 0.444, p = 0.0069.
Staff response to escalations without restraint (after 10/2017)	Staff response to behavioral escalations without restraint was significantly related to staff member injury after October 2017.	r = -0.40, p = 0.0160.

Table 2. Staff variables related to staff member injury on the NSC Unit.

Patient Variable	Variable Significance	Correlation/Relation
Total patients on unit	Total number of patients on the unit was not related to staff member injury.	r = 0.10, p = 0.2387.
Patient BMI	Patient BMI does not seem relate to staff member injury.	A chi-square test of independence was performed to examine the relation between patient BMI and staff member injury. The relation between these variables was not significant, X <sup>2</sup> (1, N = 36) = 0.4444, p < 0.5050.
Patient ASD diagnosis	Patients diagnosed with ASD were more likely to injury staff than those not diagnosed with ASD.	A chi-square test of independence was performed to examine the relation between patients with an ASD diagnosis and staff member injury. The relation between these variables was significant, X <sup>2</sup> (1, N = 41) = 7.0488, p < 0.0079.
Patient IQ level	Patients diagnosed with moderate-to-severe ID were more likely to injury staff than those diagnosed with mild ID.	A chi-square test of independence was performed to examine the relation between patients with moderate-to-severe ID versus patients with mild ID and staff member injury. The relation between these variables was significant, X <sup>2</sup> (1, N = 33) = 10.9394 p < 0.0009.

Table 3. Patient variables related to staff member injury on the NSC Unit.

## Discussion

- Results from the current study showed both staff member and patient variables significantly related to staff member injury.
  - Strategies to manage behavioral crises
  - Patient diagnosis

### Staff Variables

- Restraints are generally used if a patient is behaving in an aggressive manner, such that they are at imminent risk to themselves or others
- Previous research has shown use of restraint leads to staff member injuries (Renwick et al., 2016)
- Analysis of restraint patterns before and after October 2017, when the NSC refined its care practices showed significant differences
  - NSC staff underwent training that provided strategies for preventing and managing behavioral challenges
  - Changed its care model to emphasize applied behavior analysis, which is the underlying theoretical framework for Safety Care
  - This encouraged staff members to apply evidence-based de-escalation strategies as well as understand how and why crisis events happen, and how they may inadvertently contribute to them (Backner & Graziano, 2010; Safety Care, 2019)

### Patient Variables

- ASD and ID are often comorbid with one another (Matson & Nebel-Schwam, 2007)
- Challenging behavior exhibited by this population of individuals is often associated with injury to others (Hill et al., 2014)

### Future Directions

- Children diagnosed with ASD and/or moderate-to-severe ID and who engage in aggressive behavior should be proactively identified as high risk for injuring staff
- Staff training targeting crisis management procedures that do not involve restraint are necessary
- NSC programming after 10/2017 emphasized the principles of applied behavior analysis
  - Understanding behavioral function and effective teaching procedures may have resulted in fewer behavioral escalations that led to restraint (and, thus, fewer injuries)
- Need to replicate this analysis with other inpatient units specializing in the treatment of children with IDD and also general psychiatric inpatient units