Variables Associated with Staff Member Injury on the Neuropsychiatric Special Care Unit

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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 ID
- 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

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients on unit</td>
<td>162.28 kg</td>
<td>9.19 kg</td>
<td>140.00 kg</td>
<td>177.00 kg</td>
</tr>
<tr>
<td>Weight</td>
<td>62.58 cm</td>
<td>18.93 cm</td>
<td>20.00 cm</td>
<td>123.00 cm</td>
</tr>
<tr>
<td>Staff response to escalations without restraint (before 10/2017)</td>
<td>40.30</td>
<td>20.00</td>
<td>66.00</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total staff on unit</td>
<td>r = 0.022, p = 0.8937</td>
</tr>
<tr>
<td>Staff response to escalations with restraint (after 10/2017)</td>
<td>r = 0.36, p = 0.0013</td>
</tr>
<tr>
<td>Staff response to escalations without restraint (before 10/2017)</td>
<td>r = -0.022, p = 0.8126</td>
</tr>
<tr>
<td>Staff response to escalations without restraint (after 10/2017)</td>
<td>r = -0.446, p = 0.0068</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients on unit</td>
<td>r = 0.10, p = 0.2387</td>
</tr>
<tr>
<td>Patient BMI</td>
<td>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, χ²(1, N = 34) = 14.444, p = 0.0011</td>
</tr>
<tr>
<td>Patient ASD diagnosis</td>
<td>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, χ²(1, N = 34) = 7.068, p = 0.0079</td>
</tr>
<tr>
<td>Patient IQ level</td>
<td>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, χ²(1, N = 34) = 10.594, p = 0.0009</td>
</tr>
</tbody>
</table>

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 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