Examining Racial Bias in the Use of 4-Point Restraints During Behavioral Emergencies in the General Medical Hospital

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INTRODUCTION

Four-point restraints are indicated for prevention of violence when less restrictive measures fail. However, this intervention can be restrictive, traumatic, and potentially dangerous.[1,2] A recent study of Behavioral Emergency Response Team (BERT) activations and management at our institution found a trend that Black patients may be more likely to be placed in violent restraints than white and all non-Black patients. Establishing a specialized crisis-management team may lead to more equitable care,[3,4] but does not inherently remove racial bias. Although four-point restraint use is rare in our medical hospital, it is important that the decision to employ this intervention be based on clinical indication rather than racism or implicit bias.

STUDY OBJECTIVES

This primary objective of this study is to examine each episode of violent restraint use at our medical center and to compare the demographics (age, gender, race, ethnicity, language) of patients who were placed in restraints in the context of a BERT activation versus those who were placed in restraints in the absence of a BERT activation (Figure 1).

The secondary objective is to examine whether other restraint, medication, and psychiatric variables were correlated (Table 3) with BERT involvement during the event with the overall aim of identifying quality improvement (QI) targets for our service.

METHODS

We used secondary data from existing datasets combined with retrospective chart review to examine restraint episodes. We reviewed incident documentation, orders, and workflow. This study was submitted for NYU IRB approval and designated exempt. No funding received.

Inclusion Criteria: age >18yrs, inpatient status, order for four-point restraints during medical admission between 02/2017-05/2022.

Exclusion Criteria: four-point restraints not applied, restraint event occurred during psychiatric admission only.

BERT Subgroup Inclusion Criteria: BERT at the time of the restraint event defined according to Figure 1*.

If a patient had more than one behavioral event involving four-point restraints for violence, the first episode was used for inclusion in this study. The patient cohort and subgroups were defined based on either agreement between the restraint order and the BERT database (n=35) or two independent reviews of the chart. Full group consensus was used to resolve any disagreements. Race and ethnicity were combined into phenotypic categories. Descriptive statistics will be used to describe and compare the groups.

FIGURE 1 - RECORD IDENTIFICATION

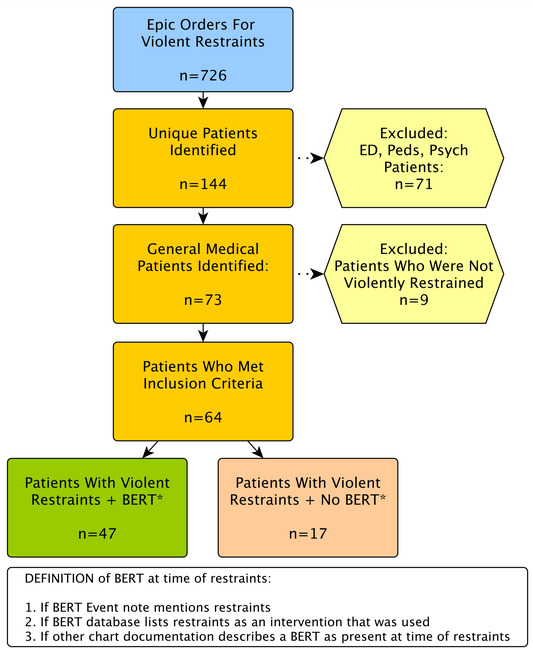

TABLE 1- DEMOGRAPHICS

Violent Restraints	BERT	No BERT	Total
White	22 (47%)	9 (53%)	31 (48%)
African American (Black)	11 (23%)	4 (24%)	15 (23%)
Hispanic/Latino	7 (15%)	2 (12%)	9 (14%)
Other	3 (6%)	1 (6%)	4 (6%)
Unknown	3 (6%)	1 (6%)	4 (6%)
Asian	1 (2%)	0 (0%)	1 (2%)
Total	**47 (73%)**	**17 (27%)**	**64**

TABLE 2- USE OF PSYCHIATRY CONSULT

	BERT	No BERT	Total
Consult	46 (98%)	11 (65%)	57 (89%)
No Consult	1 (2%)	6 (35%)	7 (11%)
Total	**47 (73%)**	**17 (27%)**	**64**

TABLE 3 - VARIABLES

Demographic Variables	Restraint Event Variables
• Age (at admission) • Race/ethnicity category • Legal Sex • Preferred Language • Body mass measure: Ht	• Number of EPIC orders / episode • Restraint duration • BERT activated? Yes / No ○ Factors contributing to BERT? • Prior BERT? Yes / No • Indication for restraints • MD, NP, PA documentation? Yes / No • RN documentation? Yes / No • Number of restraint episodes per patient
Medication Variables	**Psychiatric Variables**

• Given during restraint episode? Yes / No
  ○ Route of meds: PO, IM, IV
  ○ Medication class: antipsychotic / benzo / valproate / other
	• Psychiatry CL consulted? Yes / No
	• Psychiatric diagnosis was associated with the episode? Yes/ No
	  ○ Psych Dx: Mood / Anx / Psychosis / Sub / Cognitive / other
	  ○ If substance use dx, what substances?

PRELIMINARY RESULTS

- Complete data collection and analysis are ongoing. Chart review has revealed significant variability in ordering practices & documentation, making it challenging in some cases to determine if restraints were actually applied.
  - 64 patients met the study inclusion criteria. Of these, 47 (73%) patients were restrained with a BERT activation.
  - Race/Ethnicity categories are shown in Table 1. 39% of patients were either Black, Hispanic, or Asian. Four patients (6%) required an interpreter.
  - Patients restrained without BERT involvement were less likely to have a psychiatric consult ordered during their admission (65% vs. 98%) see Table 2.
- Descriptions of the events surrounding the restraint episodes were clearer and the restraint orders were more accurate when a BERT was involved.
  - 9 of the initially-identified 73 patients (12%) had incorrect orders for violent restraints.
  - Incorrect orders with BERT vs no BERT: 10% vs 19% of patients

CONCLUSIONS

❖ This research project is part of a long-term quality improvement project to reduce racial bias in the management of behavioral emergencies throughout our hospital.

❖ The study has revealed variability in ordering and documentation that hinders analysis of the use of violent restraints in the general medical setting; this may present a significant opportunity for improvement efforts.

❖ BERT activation plays an important role in the management of violent behavioral codes, and a team was present at the majority of incidents of violent restraint use that were studied. This reflects strong integration of the BERT since creation a few years ago and new institutional policy (implemented Nov. 2020) to inform Psychiatry CL of any 4-point restraint use in the medical hospital. High utilization of the BERT may have helped avoid some episodes of restraint use. Previous work by our group showed that restraints were used in only 3% of BERT activations (unpublished).

❖ Orders were more accurate, event descriptions clearer, and Psychiatry CL was more likely to be consulted when a BERT was involved in the violent restraint event.

❖ Ultimately, our goal is to reduce the impacts of structural racism & implicit bias in behavioral emergency management by improving awareness, increasing oversight, utilizing psychiatric consultation, and operationalizing restraint use in the general hospital setting.

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