RACIAL INEQUITIES IN PHYSICAL AND CHEMICAL RESTRAINT USE IN EMERGENCY PSYCHIATRY

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NORTH CAROLINA PSYCHIATRIC ASSOCIATION
ANNUAL MEETING
OCTOBER 2, 2022

FUNDING DISCLOSURE
We cannot achieve justice unless we are willing to do uncomfortable things
–Bryan Stevenson

LECTURE OBJECTIVES

<table>
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<tr>
<th>Identify</th>
<th>a case highlighting disparate outcomes by race in the emergency psychiatry setting</th>
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STRUCTURAL RACISM

A SYSTEM IN WHICH PUBLIC POLICIES, INSTITUTIONAL PRACTICES, CULTURAL REPRESENTATIONS, AND OTHER NORMS WORK IN VARIOUS, OFTEN REINFORCING WAYS TO PERPETUATE RACIAL GROUP INEQUITY.

Identify a case highlighting disparate outcomes by race in the emergency psychiatry setting

Discuss existing evidence demonstrating racial disparities in emergency psychiatric care

Explore the association of Black race with restraint use in the emergency setting

Describe how structural racism contributes to physical and chemical restraint use in emergency psychiatry
DIFFERENTIAL TREATMENT BY RACE: A TALE OF TWO CASES

CASE 1
“Every system is perfectly designed to get exactly the results it gets.”

– W. Edwards Deming
QUALITY IMPROVEMENT PROJECT: PSYCHIATRY ED

- Resident-driven: Drs. Nora Dennis, Krista Alexander, Kim Johnson, April Seay (now Toure)
- 3 weeks of data collection (April 2014): demographics, diagnosis, treatment, and disposition
  - Higher than expected rate of triage to locked psychiatry area for Black (but not white) patients

HOW DID WE GET HERE?

If you love your community, then you need to be insisting on justice in all circumstances.
NEXT STEPS

- Data from same health system for FY 2014-2015
- Data from state hospital (Central Regional Hospital) for FY 2014-2015
- Compilation of data table

Table 2. Demographic characteristics of Durham County, Patients with Psychiatric Consults Placed in the DUH ED (FY 2015), Patients Triage to PEU (3 weeks in 4/2014), Patients Admitted from DUHS to CRH (FY 2015), and Patients Admitted to Williams Ward (FY 2015)

<table>
<thead>
<tr>
<th>Race</th>
<th>Durham County Demographic</th>
<th>Number (percent) with psych consult in Emergency Department (FY 2015)</th>
<th>Number (percent) in PEU for 3 weeks in 4/2014</th>
<th>Patients Admitted to Central Regional Hospital from DUHS (FY 2015)</th>
<th>Patients Admitted to Williams Ward (FY 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>African-American or Black</td>
<td></td>
<td>Total N = 913</td>
<td>Total N = 79</td>
<td>Total N = 88</td>
<td>Total N = 2076</td>
</tr>
<tr>
<td>Caucasian or White</td>
<td></td>
<td>38.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>53%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
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**Discuss**
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**Explore**
- the association of Black race with restraint use in the emergency setting

**Describe**
- how structural racism contributes to physical and chemical restraint use in emergency psychiatry

WHAT IS A RESTRAINT AND WHY DO WE CARE?

- Limit individual's freedom of movement
- Inherently coercive and forceful
- Associated with adverse outcomes
- Morally injurious act

"We are all implicated when we allow other people to be mistreated. An absence of compassion can corrupt the decency of a community, a state, a nation."

**BRYAN STEVENSON**

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**DISPARITIES IN PHYSICAL RESTRAINT USE**

<table>
<thead>
<tr>
<th>Race</th>
<th>Absolute Risk, %</th>
<th>RR (95% CI) Compared to Whites</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>0.80 (0.62-1.03)</td>
<td>0.71 (0.55-0.92)</td>
<td>0.059*</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>1.00 (0.87-1.15)</td>
<td>0.89 (0.69-1.15)</td>
<td>0.68</td>
</tr>
<tr>
<td>Declined</td>
<td>1.00 (0.57-1.76)</td>
<td>0.89 (0.50-1.68)</td>
<td>0.677</td>
</tr>
<tr>
<td>Other</td>
<td>1.11 (0.96-1.28)</td>
<td>0.98 (0.84-1.14)</td>
<td>0.800</td>
</tr>
<tr>
<td>White</td>
<td>1.33 (1.07-1.69)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td>1.37 (1.10-1.74)</td>
<td>1.22 (0.90-1.45)</td>
<td>0.20**</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>1.48 (0.37-5.94)</td>
<td>1.31 (0.33-5.26)</td>
<td>0.705</td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>1.52 (0.57-4.06)</td>
<td>1.35 (0.51-3.63)</td>
<td>0.544</td>
</tr>
<tr>
<td>Unavailable</td>
<td>2.00 (1.19-2.31)</td>
<td>1.77 (1.02-2.07)</td>
<td>&lt;0.001*</td>
</tr>
</tbody>
</table>

**Table 2. Odds of Receiving a Physical Restraint Order by Variable in a Logistic Regression Model**

<table>
<thead>
<tr>
<th>Age, Race</th>
<th>Odds Ratio (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>0.78 (0.56-1.09)</td>
<td>.15</td>
</tr>
<tr>
<td>Black or African American</td>
<td>1.13 (1.07-1.21)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>White</td>
<td>1 [Reference]</td>
<td>NA</td>
</tr>
<tr>
<td>Other</td>
<td>1.11 (0.99-1.24)</td>
<td>.07</td>
</tr>
</tbody>
</table>
442 observed patient encounters in 4 urban EDs
Controlled for psychotic disorder, global assessment scale, psych history, hours in the ED, clinician effort

- **Black - White**
  - 1.92 vs. 1.13, p<.001
  - 3.1 vs. 2.2, p<.02
  - 1.821 vs. .825, p< .001

**Beta .54, p=.04**

389,885 US mental health pediatric ED visits, 2009-2019

<table>
<thead>
<tr>
<th>Visit characteristics</th>
<th>All mental health ED visits, n = 389</th>
<th>ED visits with pharmacologic restraint use, n = 13,643 (%)</th>
<th>ED visits without pharmacologic restraint use, n = 376,242 (%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>231,947 (59.5)</td>
<td>8010 (58.7)</td>
<td>223,937 (59.5)</td>
<td>.004</td>
</tr>
<tr>
<td>Black</td>
<td>87,147 (22.3)</td>
<td>3560 (26.1)</td>
<td>83,587 (22.2)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>
OBJECTIVES

Identify: a case highlighting disparate outcomes by race in the emergency psychiatry setting

Discuss: existing evidence demonstrating racial disparities in emergency psychiatric care

Explore: the association of Black race with restraint use in the emergency setting

Describe: how structural racism contributes to physical and chemical restraint use in emergency psychiatry

Association of Black Race With Physical and Chemical Restraint Use Among Patients Undergoing Emergency Psychiatric Evaluation

Colin M. Smith, M.D., Nicholas A. Turner, M.D., M.H.Sc., Nathan M. Thielman, M.D., M.P.H., Damon S. Tweedy, M.D., Joseph Egger, Ph.D., Jane P. Gagliardi, M.D., M.H.S.
OBJECTIVE

- To determine whether physical and chemical restraint use was more common in Black patients undergoing emergency psychiatric evaluation compared to white patients
METHODS: STUDY DESIGN

- Single center retrospective cohort study
- Patients ≥ 18 years old evaluated by Duke University Hospital Psychiatry consult service in the emergency department
- Electronic health record data from 2014-2020

METHODS: STATISTICAL ANALYSIS

Sex  Ethnicity  Urine drug screen
Age  Height  Arrival time  Psychotic or bipolar dx

Logistic Regression model with GEE

Potential confounders

Race

*generalized estimating equation (GEE) for repeat encounters
*multiple imputation x 5 for missing data
METHODS: DEFINING EXPOSURE

Race → Self-reported
Black, White, Asian, Multiracial, Other, unreported

METHODS: DEFINING OUTCOMES

physical holds, mitts, soft restraints, locking cuffs, or neoprene cuffs
METHODS: A NOTE ON VIOLENT RESTRAINTS

- Violent restraint: Invoked for patient behaviors including violence, severely aggressive behavior, self-injurious behavior, or inability to exhibit safe behaviors
- Non-violent restraint: Ordered for patient behaviors including pulling of lines or tubes or behaviors related to toxic, metabolic syndromes, dementia, or brain injury

METHODS: DEFINING OUTCOMES

Parenteral administration of chlorpromazine, fluphenazine, haloperidol, olanzapine, and ziprasidone
METHODS: DEFINING POTENTIAL CONFOUNDERS

Sex → Self reported
   Male, female, unknown
Urine drug screen / BAC → Amphetamine, THC, cocaine, opiates, BAC > .08

Age → At presentation (in years)
Arrival time → 1200 - 0400, 0400 - 0800, etc.

Ethnicity → Self reported
   Hispanic, non-Hispanic, unavailable

Height → From chart (in inches)
Psychotic/bipolar d/o → ED encounter diagnosis code query

RESULTS: DEMOGRAPHICS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Overall (N = 12,977)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median</td>
</tr>
<tr>
<td>Age (years)</td>
<td>37.0</td>
</tr>
<tr>
<td>Height (inches)*</td>
<td>67.0</td>
</tr>
<tr>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>5,816</td>
</tr>
<tr>
<td>Male</td>
<td>7,159</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>234</td>
</tr>
<tr>
<td>Black</td>
<td>6,287</td>
</tr>
<tr>
<td>White</td>
<td>5,263</td>
</tr>
<tr>
<td>Multiracial</td>
<td>682</td>
</tr>
<tr>
<td>Other</td>
<td>326</td>
</tr>
<tr>
<td>Unreported</td>
<td>178</td>
</tr>
<tr>
<td>Missing</td>
<td>7</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>566</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>12,137</td>
</tr>
<tr>
<td>Unreported</td>
<td>266</td>
</tr>
<tr>
<td>Missing</td>
<td>8</td>
</tr>
</tbody>
</table>

Colin Smith et al. Psychiatr Serv. 2021
RESULTS: DEMOGRAPHICS

Shift
12:00 a.m. – 3:59 a.m. 1,620 12.5
4:00 a.m. – 7:59 a.m. 782 6.0
8:00 a.m. – 11:59 a.m. 1,640 12.6
12:00 p.m. – 3:59 p.m. 2,881 22.2
4:00 p.m. – 7:59 p.m. 3,143 24.2
8:00 p.m. – 11:59 p.m. 2,911 22.4

Diagnosis
Bipolar disorder 2,045 15.8
Psychotic disorder 4,383 33.8
Missing 225 1.7

Laboratory tests
Amphetamine 320 3.8
THC 2,239 26.8
Cocaine 1,646 19.7
Opiate 552 6.6
Peak ethanol level ≥80 mg/dl 1,063 13.1

RESULTS: PRIMARY OUTCOMES

TABLE 2. Unadjusted rate of physical restraint and chemical restraint use, by patient’s race

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Overall (N=12,977)</th>
<th>Black (N=6,287)</th>
<th>White (N=5,263)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Patients receiving physical restraint</td>
<td>961</td>
<td>7.4</td>
<td>548</td>
</tr>
<tr>
<td>Patients receiving chemical restraint</td>
<td>2,047</td>
<td>15.8</td>
<td>1,136</td>
</tr>
</tbody>
</table>
### RESULTS: PRIMARY OUTCOMES

#### TABLE 3. Adjusted odds of receiving physical restraint, by patient’s race

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>OR</th>
<th>95% CI</th>
<th>AOR</th>
<th>Robust 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>1.03</td>
<td>0.58–1.83</td>
<td>0.58</td>
<td>0.21–1.64</td>
</tr>
<tr>
<td>Black</td>
<td>1.67</td>
<td>1.44–1.94</td>
<td>1.35</td>
<td>1.07–1.72</td>
</tr>
<tr>
<td>Multiracial</td>
<td>2.09</td>
<td>1.60–2.75</td>
<td>1.84</td>
<td>1.20–2.80</td>
</tr>
<tr>
<td>Other</td>
<td>1.39</td>
<td>0.90–2.15</td>
<td>1.32</td>
<td>0.65–2.65</td>
</tr>
<tr>
<td>Unreported</td>
<td>2.09</td>
<td>1.28–3.42</td>
<td>0.84</td>
<td>0.29–2.43</td>
</tr>
</tbody>
</table>

* Reference group: White.

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#### TABLE 4. Crude and adjusted odds of receiving chemical restraint, by patient’s race

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<tr>
<th>Characteristic</th>
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<td>0.77–1.66</td>
<td>1.10</td>
<td>0.66–1.84</td>
</tr>
<tr>
<td>Black</td>
<td>1.57</td>
<td>1.42–1.75</td>
<td>1.33</td>
<td>1.15–1.55</td>
</tr>
<tr>
<td>Multiracial</td>
<td>1.84</td>
<td>1.50–2.26</td>
<td>2.11</td>
<td>1.56–2.84</td>
</tr>
<tr>
<td>Other</td>
<td>1.23</td>
<td>0.90–1.69</td>
<td>1.52</td>
<td>0.94–2.46</td>
</tr>
<tr>
<td>Unreported</td>
<td>2.27</td>
<td>1.60–3.23</td>
<td>1.30</td>
<td>0.64–2.65</td>
</tr>
</tbody>
</table>

* Reference group: White.
DISCUSSION: LIMITATIONS

- Physical restraint was based on order
- EHR data does not include “appropriateness” of use
- Retrospective
- Generalizability

CONCLUSION

- Evidence of systemic injustice and racism in healthcare
**LECTURE OBJECTIVES**

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DISCUSSION: LEVELS OF RACISM IN CARE

- Clinicians have implicit preference for white patients
- Hold false beliefs about biological differences between races
- Beliefs impact outcomes
  - E.g., pain

DISCUSSION: INTERPERSONAL RACISM
DISCUSSION: ACCESS AS STRUCTURAL RACISM

- Payor | OR (95% CI)
- Private | 1 (Reference)
- Medicaid | 10.35 (5.57 - 21.47)
- Medicare | 7.47 (3.98 - 15.57)
- Uninsured | 9.71 (5.21 - 20.18)
- Other | 4.88 (1.64 - 13.30)

Colin Smith et al., unpublished
DISCUSSION: CRIMINALIZATION AND HYPERINCARCERTAION

- In the U.S., 3 of the largest centers for mental health are county jails
- Black people are 5x more likely to be imprisoned

NAMI, 2022

RECONSIDERING OUR APPROACH

Strategies to address bias in ED agitation management

“A bad system will beat a good person every time.”

– W. Edwards Deming

LIVED EXPERIENCE

- Develop an understanding of experiences and needs of Black individuals seen in the DUH psych ED

- Develop hypotheses for drivers of racial inequities in care
LIVED EXPERIENCE: criminalization, stigma, vulnerability, helpful interventions, insight, mismatch

“I am thinking I am going to go to a hospital bed... when I got to the hospital it was like you took me to jail anyway.”

“I was strapped down - ten or more Caucasian people strip my clothes off - that was rape to me.”

“Being put in a police car and in hand restraints felt like I was a criminal. I just wanted to get help.”

“Experiences were traumatic but it was the only way to get help.”

Colin Smith et al., unpublished

WHERE DO GO FROM HERE?
WHERE DO GO FROM HERE?

“What has not been reveled cannot be healed.”
- Candice Cox, LCSW

QUESTIONS?
REFERENCES

Denial is the heartbeat of racism, beating across ideologies, races, and nations. It is beating within us.