Racial, Ethnic, and Gender Differences in Acute Pain Management in the Emergency Department

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Learning Objectives

At the conclusion of this session, participants should be able to:

1. Define implicit bias and identify how it affects acute pain treatment in the emergency department
2. Articulate how racial/ethnic minorities and women experience different acute pain treatment in the emergency department

Introduction

- 1.7 million visits to emergency departments
- 42% of visits were for acute pain

- Most common chief complaints
  - Abdominal pain (8.8%)
  - Chest pain (4.7%)

Background

- Clinicians may be unaware of biases
- Emergency medicine clinicians may be more susceptible
  - Fast-paced, chaotic environment with multiple interruptions
  - Patients unknown to the clinicians
  - High patient load with varying complaints possibly life-threatening
- Clinicians rely on cognitive heuristics (“gut-instinct”)

- The research aimed to review the acute pain treatment of racial/ethnic minorities and women to determine if treatment differences exists
- Level 1 Trauma Center in northern Virginia

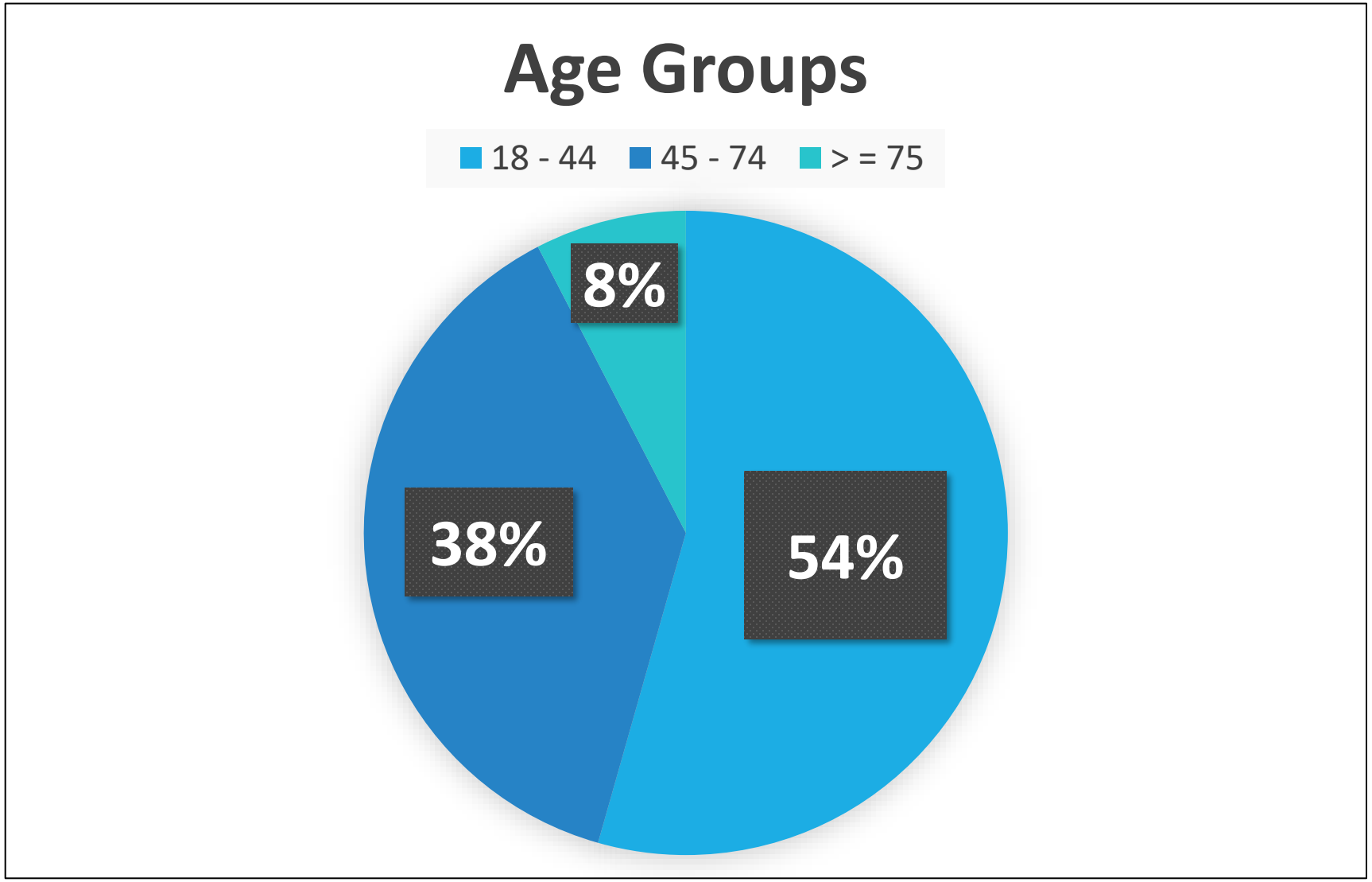
Research Methods

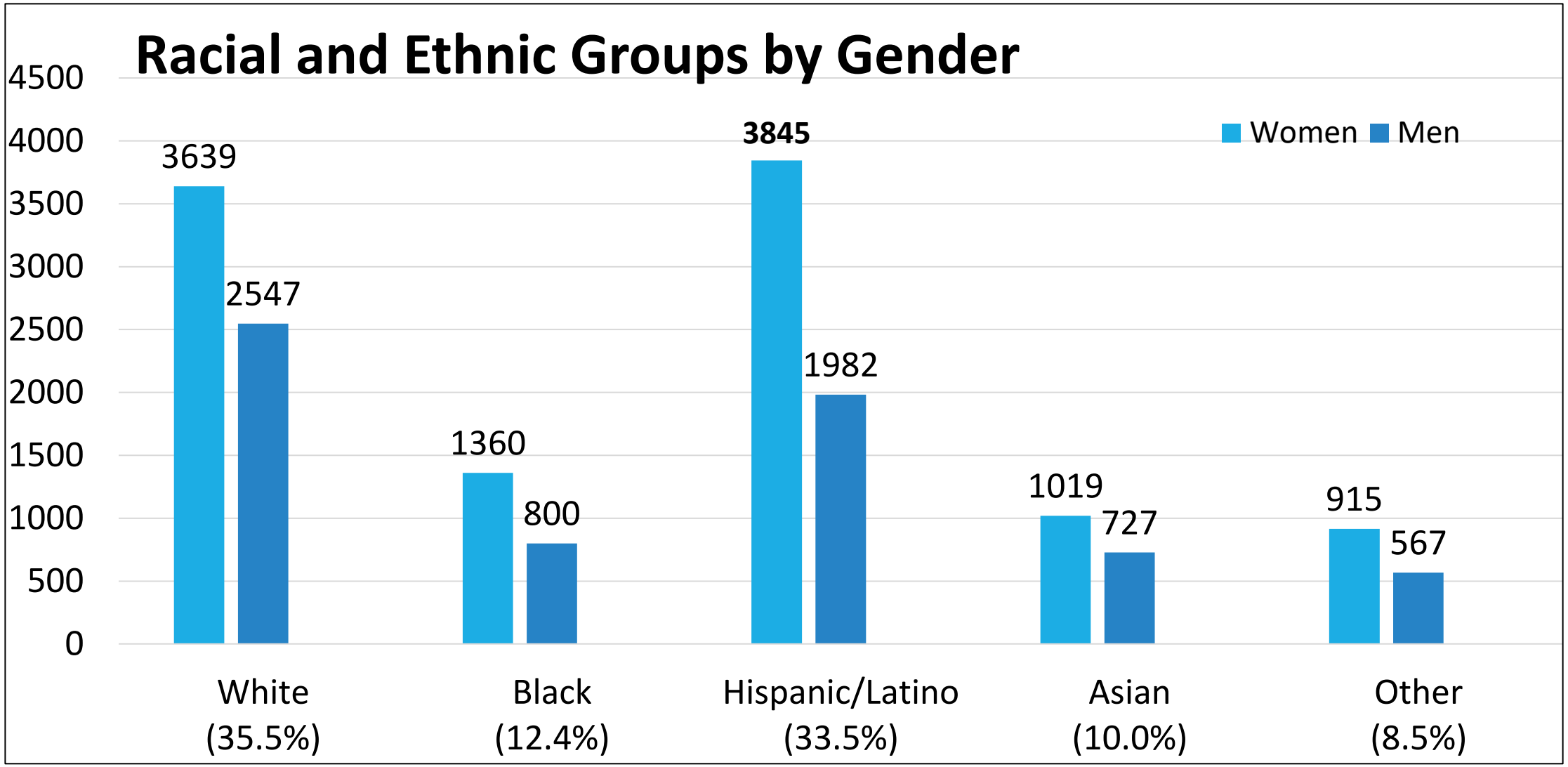
- Retrospective chart review of adult emergency department visits
- Chief complaint of abdominal pain
- Exclusion criteria
  - Patients < 18 years old
  - CODE STEMI (ST-elevated myocardial infarction), CODE stroke, trauma team activations
  - Pregnant patients, patients treated for chronic pain, patients with psychiatric/substance abuse diagnoses
  - Pain score of zero
  - Missing data for pain score, gender, and both race/ethnicity

Research Methods (continued)

- Race – White, Black, Asian, or Other
- Ethnicity – Hispanic/Latino or Non-Hispanic/Latino
- Gender – male or female
- Pain score – 1 to 10
- Pain medications – nonopioid and opioid
- Exempt human research study by the Inova Health System Institutional Review Board (IRB) #U20-04-4010 and the A.T. Still University-Arizona IRB #2020-123.

Age Groups




Racial and Ethnic Groups by Gender
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Women
Men
3639
2547
1360
800
3845
1982
1019
727
915
567
White
(35.5%)
Black
(12.4%)
Hispanic/Latino
(33.5%)
Asian
(10.0%)
Other
(8.5%)

Descriptive Data

	Total	Racial/Ethnic Groups					Gender	
		White	Black	Hispanic/ Latino	Asian	Other	Men	Women
Arrival Method								
Personal Vehicle	**88.3%**	29.2%	10.7%	32.0%	8.7%	7.7%	33.3%	55.0%
Ambulance	11.5%	**6.3%**	1.6%	1.4%	1.4%	0.8%	4.6%	6.9%
Acuity Level								
2	12%	5.6%	1.4%	2.7%	1.5%	0.8%	5.5%	6.5%
3	**87.4%**	29.8%	10.9%	30.7%	8.4%	7.6%	32.2%	55.2%
Discharge Home	**68.3%**	21.6%	9.0%	24.9%	6.4%	6.4%	24.0%	44.3%
Hospital Admission*	31.1%	13.7%	3.3%	8.5%	3.6%	2.0%	13.8%	17.3%

*Includes patients admitted to the operating room, admitted for observation/inpatient admission, and transferred to another facility

Top Ten Diagnoses

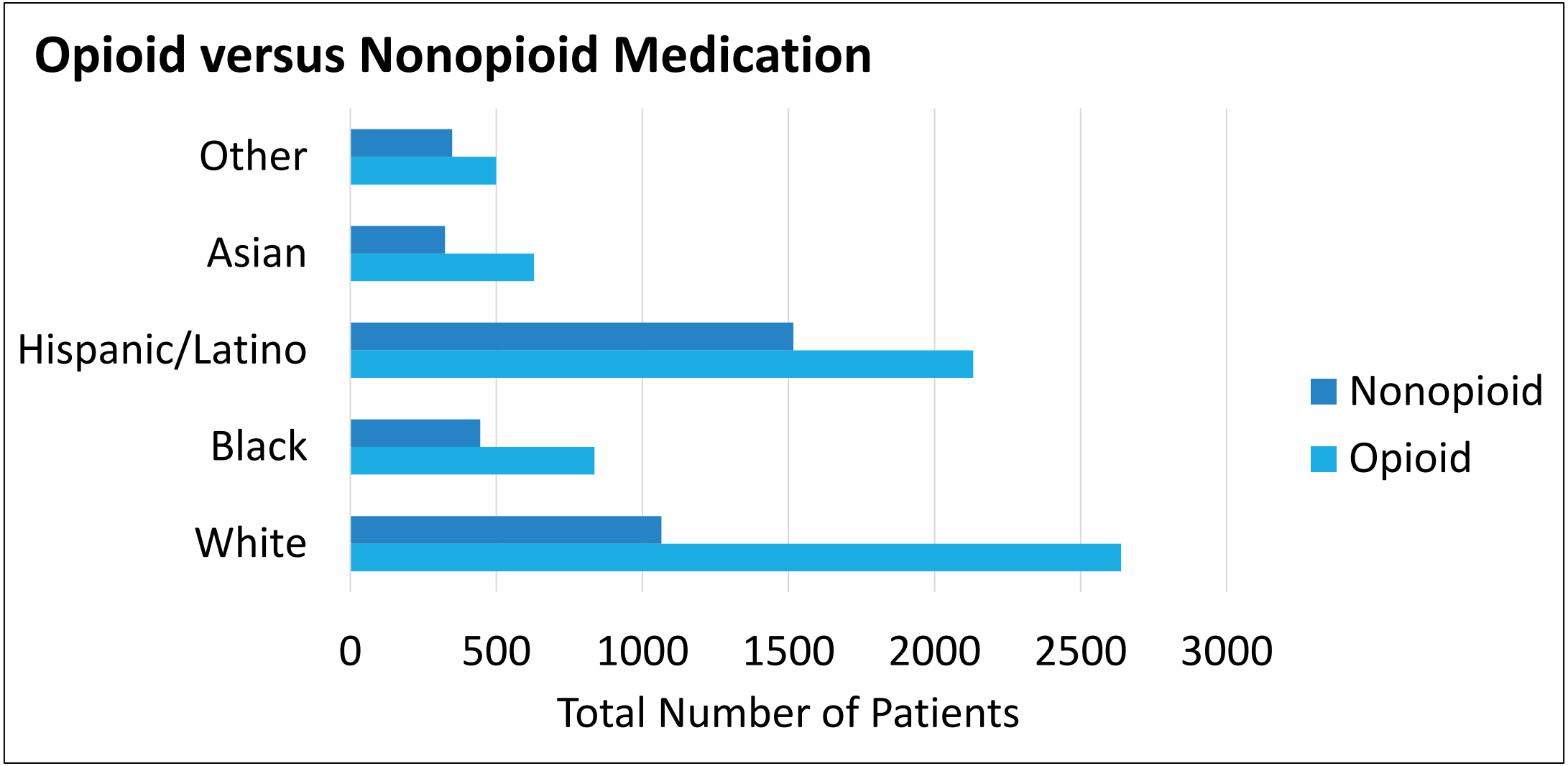
Diagnosis (% of total patients)	Total	Gender		Pain Treatment	
		Women	Men	Received Pain Medication[h]	Received Opioid Medication
Abdominal Pain[a] (34.8%)	6051	3990[g]	2061	3356	2182
Colitis[b] (6.9%)	1201	659[g]	542	737	536[i]
NVD (4.8%)	839	535	304	353	191[i]
Appendicitis (4.6%)	805	349[g]	456	547	445[i]
Kidney Stones (3.9%)	678	271[g]	407	590	294[i]
Cholelithiasis (3.5%)	613	435[g]	178	436	349[i]
UTI[e] (3.2%)	559	460	99	292	127[i]
Bowel Obstruction[f] (3.2%)	562	293	269	434	413[i]
Ovarian Cyst (2.7%)	475	474[g]	1	353	162[i]
Cholecystitis (2.3%)	398	263	135	306	256[i]

a – includes intestinal colic, inguinal pain, groin pain, abdominal discomfort/distention/bloating/cramping
b – includes ulcerative colitis, Crohn disease, diverticulitis, enteritis
c – nausea, vomiting, and/or diarrhea
d – includes biliary colic, choledocholithiasis, biliary obstruction, common bile duct dilatation
e – includes dysuria
f – includes partial bowel obstruction
Chi-square test of independence results:
g – Significant difference between genders ($p < 0.001$)
h – Significant difference between received and did not receive pain medication ($p < 0.001$)
i – Significant difference between nonopioid and opioid treatment ($p < 0.001$)
Abbreviation: NVD – nausea, vomiting, diarrhea; UTI - urinary tract infection

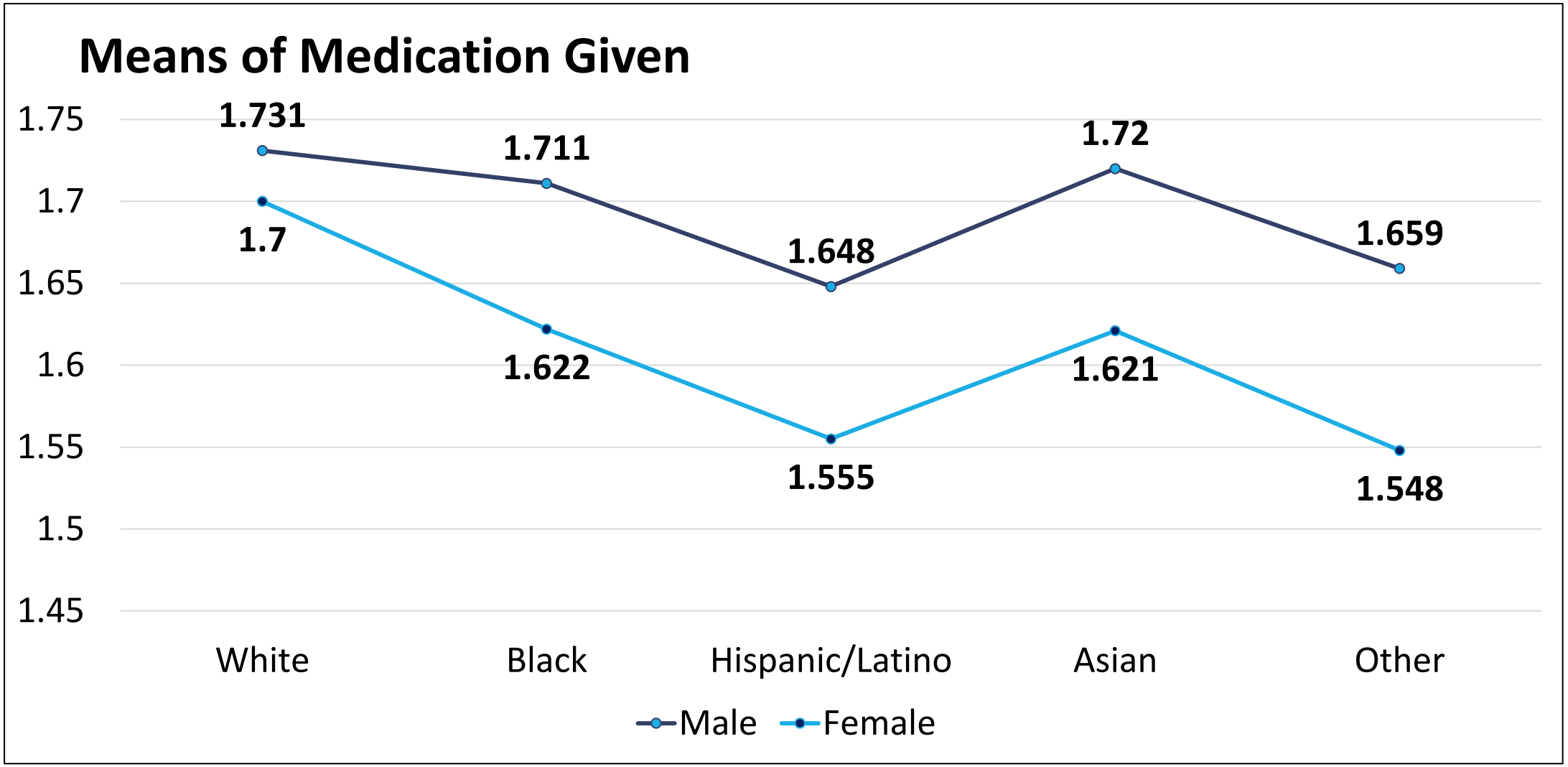
Racial Group Pain Treatment

	Means with 95% Confidence Interval		
	Arrival to Medication (minutes)	**Number of Medications Given**	**Length of Stay (minutes)**
White	92.69 (90.03-95.35)	**1.01 (0.98-1.03)***	335.29 (331.15-339.43)
Black	97.27 (92.74-101.80)	0.93 (0.88-0.97)*	320.20 (313.33-327.07)*
Hispanic/Latino	**100.22 (97.55-102.88)****	0.90 (0.88-0.93)*	313.17 (309.42-316.92)*
Asian	99.08 (93.43-104.74)	0.84(0.79-0.88)*	334.59 (326.47-342.70)
Other	92.50 (87.19-97.81)	0.88 (0.83-0.93)*	305.42 (297.93-312.91)*

***Significant difference between White versus minority racial groups ($p<0.05$)
** Significant difference between Hispanic/Latino versus White patients ($p<0.05$)


Opioid versus Nonopioid Medication
Other
Asian
Hispanic/Latino
Black
White
0
500
1000
1500
2000
2500
3000
Total Number of Patients
Nonopioid
Opioid

Medications Given by Gender					
	Medication Given		Received Opioid		p-value*
					0.001
Women	6464	61.9%	4113	61.7%	
Men	3972	56.9%	2623	69.6%	
*Chi-square test of significance $p < 0.05$					


Means of Medication Given
1.75
1.7
1.65
1.6
1.55
1.5
1.45
1.731
1.711
1.648
1.72
1.659
1.7
1.622
1.555
1.621
1.548
White
Black
Hispanic/Latino
Asian
Other
Male
Female

Treatment Differences

- White patients received more pain medications and received opioids more often
- Hispanic/Latino patients waited 6.35 minutes longer for pain medications
- Women patients waited 9 minutes longer for pain medications
- Women less likely to receive an opioid medication
- Unexpected results
  - Women received more pain medications during the emergency department visit
  - White patients had a longer length of stay than racial/ethnic minority patients
  - Hispanic/Latino patients received more pain prescriptions at discharge

Limitations

- Racial and gender concordance not evaluated
- Pain treatment restricted to nonopioid and opioid pain medications
- No documentation of pain medications taken prior to arrival or given by emergency medical technicians during transport

Why do treatment differences exists?

- Opioid Epidemic
- Communication Barriers
- Pregnancy tests

Racial/Ethnic Biases

- Biases persists because of systemic and structural racism
- Black patients
  - Legacy of discrimination set conditions for racial bias
- Hispanic/Latino patients
  - Equating the population with undocumented immigrants regardless of immigration status
- Asian patients
  - History of exclusionary immigration laws, forced migration, and internment

Gender Biases

- Female gender norms
  - Emotional
  - Hysterical
  - Complaining
  - Malingering
  - More likely to have psychological causes than somatic causes
- Male gender norms
  - Stoic
  - Tolerating pain
  - Avoid seeking health care

Strategies

- Introspection
- Perspective-Taking
- Individuation
- Learn to Slow Down
- Cultural Humility
- Institutionalize Fairness

Take Home Points

- Unconscious biases may affect acute pain treatment of patients
- Unconscious biases rooted in historical discrimination and persistent systemic biases of minority patients and women
- It is imperative to be aware of biases, and work to overcome the automatic associations

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