



Understanding and reducing racial and ethnic disparities in pain and pain treatment



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Outline

- ▶ Overview- racial/ethnic disparities in pain and pain treatment
- ▶ “Unpacking” race/ethnicity – how this can help us understand the myriad causes of disparities
- ▶ 3 studies:
 - ▶ Racial discrimination and Veterans’ pain
 - ▶ How patient race affects opioid prescribing decisions
 - ▶ Patient race and pain management in VHA
- ▶ Implications for clinicians and policy-makers
 - ▶ Future directions



Poll Question #1

- ▶ Who is in the audience?
- ▶ A. Researchers
- ▶ B. Clinicians
- ▶ C. Other



Poll Question #2

- ▶ How would you rate your overall knowledge on the topic of racial/ethnic disparities in pain and pain treatment?
 - ▶ 1 (No knowledge)
 - ▶ 2
 - ▶ 3
 - ▶ 4
 - ▶ 5 (Very knowledgeable)



Health and healthcare disparities

- ▶ **Health** disparities: “differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups...” (*NIH, in Anderson, 2009)
- ▶ **Healthcare** disparities: “racial and ethnic differences in the quality of health care that are not due to access-related factors or clinical needs, preferences, and appropriateness of intervention.” (Unequal Treatment, 2002)

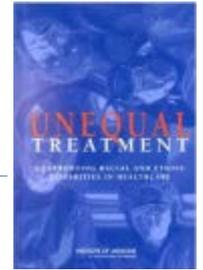


Consistent evidence of racial/ethnic disparities in pain and pain treatment

- Greater prevalence of pain and greater impairment/severity of symptoms among nonwhites
- Non-whites receive poorer pain assessment and treatment than whites, across a wide variety of settings and all types of pain (acute, cancer, post-operative, chronic nonmalignant, end of life).
- These racial/ethnic disparities exist outside of and within the VA Healthcare System



Disparities in pain treatment are consistent with broader evidence of racial/ethnic healthcare disparities



- ▶ IOM report, Unequal Treatment, (2002) concluded:
 - ▶ Across every therapeutic intervention, minorities receive fewer procedures and poorer quality medical care than whites.0
 - ▶ Differences persist even after differences in health insurance, SES, stage and severity of disease, co-morbidity, and the type of medical facility are taken into account.
 - ▶ Differences persist in contexts such as Medicare and the VA healthcare system, where differences in economic status and insurance coverage are minimized.



Racial and Ethnic Disparities in the VA Health Care System: A Systematic Review

Somnath Saha, MD, MPH^{1,2}, Michele Freeman, MPH^{1,2}, Joahd Toure, MD³,
Kimberly M. Tippens, ND⁴, Christine Weeks⁵, and Said Ibrahim, MD, MPH^{6,7}

Table 2. Presence of Disparities by Clinical Content Area*

Clinical Content Area	Disparities Present	Disparities Not Present
Arthritis/pain management	6	1
Cancer treatment	2	2
Diabetes	7	2
Heart and vascular disease	20	10
HIV/Hepatitis C	4	3
Mental health/substance abuse	11	10
Preventive/ambulatory care	8	4
Rehabilitation and palliative care	2	2

- ▶ Racial differences in joint replacement surgery and analgesic medication use, with less aggressive management of osteoarthritis in African Americans and Latinos
- ▶ African Americans less willing than whites to undergo joint replacement surgery
 - ▶ Due in part to less familiarity with the procedure & worse expectations of surgical outcomes, including recovery, chronic pain, and functioning
- ▶ Clinicians prescribe opioids less often for African Americans

“Unpacking” Race and Ethnicity

- Race: assigns people to one or more of the socially-constructed categories (i.e., races) established hundreds of years ago to divide humans into 5 major subpopulations
- Ethnicity: encompasses aspects of social life (e.g., culture) and personal identity that people within some collective share.

*Ford & Harawa (2010)



2 Dimensions of Ethnicity

- ▶ Attributional: Describes unique sociocultural characteristics of a group (culture, diet, beliefs)
- ▶ Relational: Captures relationship between an ethnically defined group and the society in which it is situated (i.e., intergroup hierarchy)
 - ▶ Useful in understanding how social stratification and social exposures (e.g., discrimination) contribute to health and healthcare disparities

*Ford & Harawa (2010)



Contributors to Disparities in Pain & Pain Management

Attributional (cultural)

- ▶ Cultural variation in pain perception, expression, expectations & response (e.g., coping strategies)
 - ▶ Cultural beliefs about pain management (e.g., attitudes toward opioids, attitudes toward surgical procedures)
-



Contributors to Disparities in Pain & Pain Management

Attributional (cultural)

- ▶ Cultural variation in pain perception, expression, expectations & response (e.g., coping strategies)
- ▶ Cultural beliefs about pain management (e.g., attitudes toward opioids, attitudes toward invasive treatment)

Relational

- ▶ Lack of access to healthcare and medication
- ▶ Unconscious or conscious provider bias (lower likelihood of prescribing opioids, poorer assessment, poorer communication)
- ▶ Greater exposure to life stressors (poverty, discrimination)





The Effect of Perceived Racial Discrimination on Bodily Pain among Older African American Men

Burgess, Grill, Noorbaloochi, Griffin,
Ricards, van Ryn & Partin

Pain Medicine (2009)

Background

- ▶ African Americans (AA) experience discrimination at a higher level than whites
- ▶ Repeated experiences of discrimination are a source of chronic stress and are associated with poorer physical & mental health and negative health-related behaviors (e.g., smoking, delaying healthcare, poorer adherence to treatment)

Primary Research Question

- ▶ Is discrimination associated with greater physical pain among African Americans?



Methods

Sample: Subsample of male African American patients (N = 393) from a national survey of colorectal cancer screening among VA patients (age 50-75)*

- 60.5% response rate

Dependent Variable: Bodily pain subscale of the SF-36

1. How much did pain interfere with your normal work (including both work outside the home and housework)?
2. How much bodily pain have you had during the past 4 weeks?

Methods (cont'd)

Independent Variable: Experiences of Discrimination (over a lifetime)

“How often have you experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior in any of the following situations because of your race, ethnicity or color?”

at school; getting hired or getting a job; at work; getting housing; getting medical care; getting service in a store or restaurant; getting credit, bank loans or a mortgage; on the street or in a public setting; from the police or in the courts

(Krieger, 2005)

Discrimination and Pain (unadjusted)

Types of Discrimination	Discrimination Experienced (%)				Assoc w/Pain
	Never	Once	2-3x	≥ 4x	
At school	42	8	22	28	0.15**
Getting hired or getting a job	26	10	30	34	0.13*
At work	29	13	30	28	0.19**
Getting housing	45	16	21	18	0.19**
Getting medical care	65	11	16	8	0.19**
Getting services in store/restaurant	23	14	32	31	0.22**
Getting credit/bank loans/mortgage	37	11	26	25	0.13**
On the street or in a public setting	26	14	32	29	0.15**
From the police or in the courts	29	16	28	27	0.26**

Association between overall discrimination and pain

Variable name	β	p
Perceived discrimination	.25	< .0001
Age 65 or over	-1.01	.005
Currently employed	-1.15	.002
Education: High school or less ^a	.31	.54
Education: High school or less ^a	.46	.35
Income: \leq \$20,000 ^b	-.52	.28
Income: \leq \$40,000 ^b	-.11	.82
Mental health diagnosis	-.22	.57
Substance abuse diagnosis	-.95	.04
Dual (mental health and substance abuse) diagnosis	.30	.43

^a Reference category = college graduate or more. ^b Reference category = over \$40,000.

Discussion

- ▶ Results suggest that racial discrimination is a potential contributor to the greater burden of pain experienced by African Americans.
- ▶ Results consistent with numerous studies demonstrating an association between racial discrimination and poor health.
- ▶ Limitation – cross-sectional design so cannot make causal statements

Implications for policy and practice

- ▶ Highlights importance of a biopsychosocial approach to pain that addresses psychological and environmental factors

- ▶ Multiple pathways by which discrimination affects health
(Williams, 2009)

- ▶ Discrimination may affect chronic pain through any of these pathways and these pathways may be potential targets for intervention
 - Chronic stress
 - Poorer mental health
 - Sleep disturbance
 - Anger
 - Avoidance of healthcare/poorer adherence to treatment
 - Poorer provider/patient communication



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- ▶ Any other implications for research, policy and practice? Other thoughts?



Patient race and physicians' decisions to prescribe opioids for chronic low back pain

Burgess, Matoka, Phelan, Roth, Dovidio, Kerns,
Saha & van Ryn

Social Science & Medicine (2008)

Funded by a Locally Initiated Project grant from
CCDOR

Primary research question:

Does provider stereotyping contribute to racial disparities in decisions to prescribe opioids for chronic noncancer pain?



Background

- **Stereotypes:** concepts that contain our knowledge, beliefs, expectations, and feelings about a social group
- Salient patient characteristics (e.g., race) may activate stereotypes, which may influence providers'
 - interpretation of behaviors and symptoms
 - expectations about patient behaviors
 - behaviors toward patients ...which can influence patients behaviors

*This can occur automatically (or “implicitly”), without conscious intent



Everyone engages in stereotyping—not just providers



AP Associated Press AP - Tue Aug 30, 11:31 AM ET

A young man walks through chest deep flood water after looting a grocery store in New Orleans on Tuesday, Aug. 30, 2005. Flood waters continue to rise in New Orleans after Hurricane Katrina did extensive damage when it

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3:47 AM ET

Two residents wade through chest-deep water after finding bread and soda from a local grocery store after Hurricane Katrina came through the area in New Orleans, Louisiana. (AFP/Getty Images/Chris Graythen)

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Stereotypes & pain treatment

- ▶ Evidence that non-whites are less likely than whites to be prescribed opioid analgesics
- ▶ Decision to prescribe opioids for pain - has several features that may increase the likelihood that providers' **racial stereotypes** will affect their clinical decision-making:
 - ▶ complex decision: provider needs to weigh risks/benefits of opioids
 - ▶ providers lack knowledge in this area



-
- ▶ We speculated that certain types of “red flag” patient behaviors (verbal & nonverbal) will activate or legitimate negative stereotypes of blacks (e.g., “criminal”, “drug user”) that lead to physician concerns about prescribing opioids.
 - ▶ **Hypothesis: Physicians will be more reluctant to prescribe opioids to black versus white patients, among patients who manifest “red flag” behaviors.**

Methods: Overview

Design:

- ▶ Vignette study conducted with physicians (mail survey)
- ▶ Between-subjects factorial design
- ▶ Patient characteristics were systematically varied
- ▶ Race (black/white) X Verbal behavior (challenging/non-challenging), X Nonverbal behavior (angry/dejected/calm)

Primary dependent measure:

- ▶ Decision to switch patient to a higher dose or stronger type of opioid

Development of “Photonovella” Stimulus Materials

- ▶ **Photonovella:** 4 photos + “script” depicting a chronic pain patient (accompanied by a “clinic note”)
- ▶ Created scripts (based on ethnographic research) to evoke patient behaviors that would or would not raise “red flags” among physicians about the advisability of prescribing opioids.
- ▶ **Red flag/ “challenging” verbal behaviors:** belligerence, demanding behavior, asking for an opioid by name, using the opioids of a relative.

Excerpt from “challenging” vignette:



Patient: This pain in my back is killing me. You've got to do something. This is the worst pain I've ever had.

Doctor: When do you have the pain?

Patient: All the time, I'm telling you, it's terrible. I just can't stand it anymore. You've got to do something for the pain....

I tried some of my wife's Percocet she had from her surgery though, and that stuff really worked. I want some of that.

Data Collection

Mail survey: National sample of 1000 general internal medicine physicians

- ▶ Described as study of pain treatment (no mention of race).
- ▶ 40% response rate

Sample Characteristics

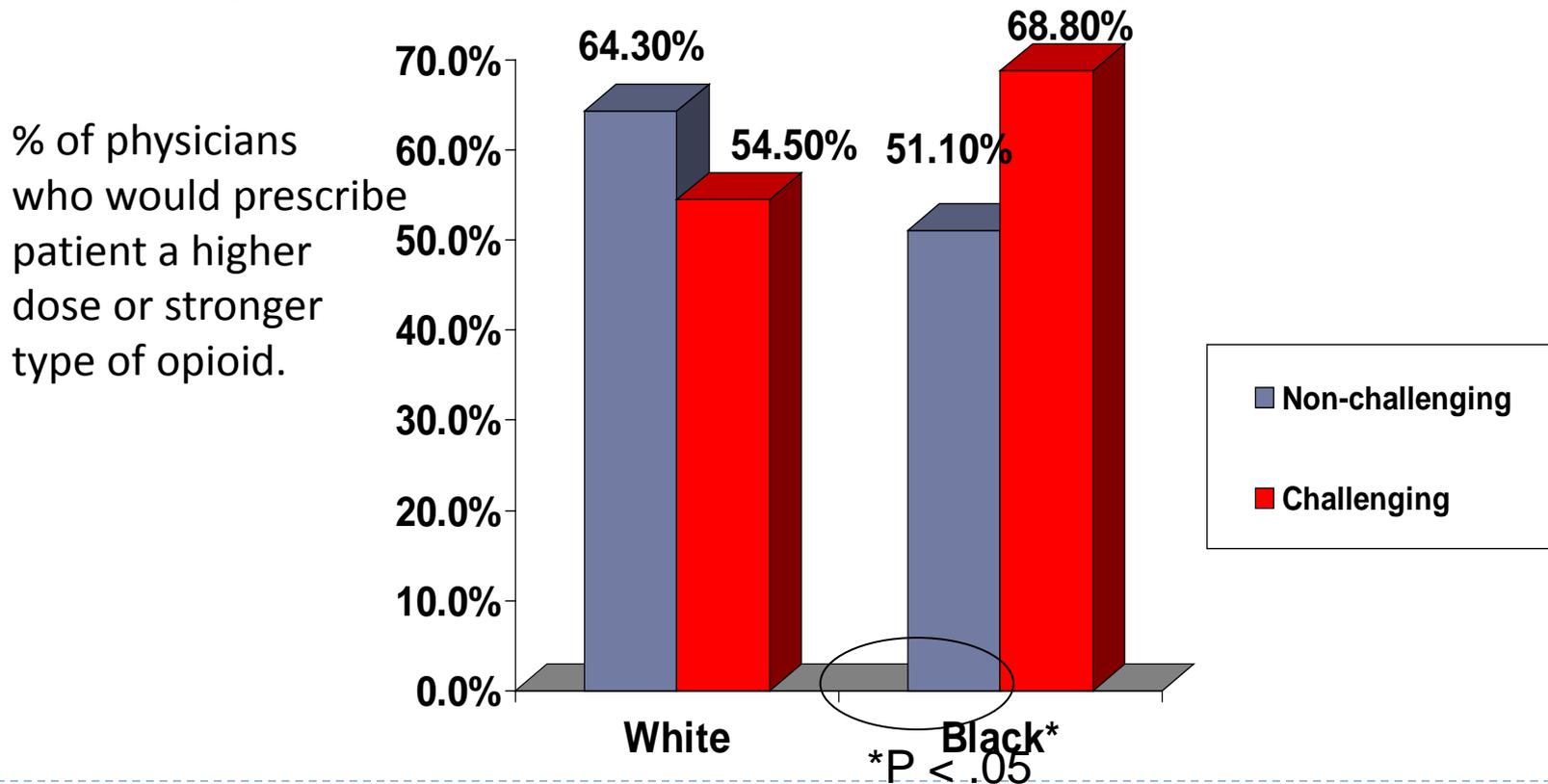
Male	70.1%
Race/ethnicity	
White	41.0%
Asian American/Pacific Islander	23.3%
Hispanic/Latino	6.3%
African American or American born black	4.7%
Native American	.5%
Other	5.8%
Did not answer	18.8%
Age	M = 44.32 (12.17)
% of your patients who are non-white	M = 37.12% (26.01%)
% of your patients who have chronic, noncancer pain	M = 19.67% (18.65%)

Analysis

- ▶ **Logistic regression** was used to determine the effects of patient characteristics on physicians' prescribing decisions.
- ▶ Final model included:
 - ▶ Main effects of patient characteristics: race, verbal behaviors, nonverbal behaviors
 - ▶ Two-way interactions: race X verbal behaviors and race X nonverbal characteristics
 - ▶ Main effects of physician age

Results: Decision to switch to higher dose/stronger type of opioid

Significant interaction between patient verbal behavior and patient race ($p=.02$), which was counter to our hypothesis.



What might account for these results?

- ▶ “Challenging” script - was designed to raise “red flags” but also was unambiguous in stating the patient’s desire
 - ▶ This might have reduced uncertainty common in physicians when treating patients of another race
 - ▶ Consistent with vignette study in which assertive behavior led to full staging of breast tumors among black but not white women (Krupat, 1999)
- ▶ Vignette studies might not capture actual decision-making processes that occur in clinical settings



Implications for policy and practice

- ▶ Points to the larger issue of the unconscious use of factors such as race/ethnicity (“implicit bias”)
- ▶ Current research underway in VA to minimize provider implicit bias (Dr. Hausmann, PI with Office of Health Equity)



Implications for policy and practice

- ▶ Since data were collected in 2005, stronger legislative and regulatory efforts to address the issue of opioid diversion and misuse:
 - ▶ How might racial biases operate, within this context?
 - ▶ How might “positive” biases lead to inappropriate prescribing among groups stereotyped as unlikely to misuse/abuse opioids
 - ▶ Tension between addressing disparities in opioid prescriptions and acknowledgment of public health crisis caused by increased opioid prescribing, particularly in light of incomplete evidence about its benefits



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- ▶ Any other implications for research, policy and practice? Other thoughts?



Presence and correlates of racial disparities in the VHA

VA HSR&D IIR #07-071

Principal Investigator: Diana Burgess

Co-Investigators: Matt Bair, Melissa Farmer,
Diana Higgins, Robert Kerns, David Nelson,
Melissa Partin, Michelle van Ryn

Data/Stats support: Amy Gravely, Joan Barnes,
Sean Nugent

Primary Research Question:

- Do racial disparities in pain management (screening, prescription of pain medication for chronic pain, and perceived effectiveness of chronic pain treatment) exist in the VA healthcare system?



Methods

- ▶ Secondary data analysis
- ▶ Sampling frame: ambulatory care module of the 2007 Survey of Healthcare Experiences of Patients (SHEP)
- ▶ In all analyses, we accounted for clustering by site and whether the patient was new or established



Data Sources

Key Measures	<u>Source</u>
<u>Pain screening</u> : presence of a pain score in patient's record at SHEP index visit	Corporate data warehouse (CDW)
<u>Pain treatment</u> (pain medication, including whether an opioid was prescribed)	Pharmacy Benefits Management (PBM) database
<u>Pain outcomes</u> : <ul style="list-style-type: none">•perceived effectiveness of chronic pain treatment•functional interference due to pain	SHEP Ambulatory Care Module (2007)



1: Are there racial disparities in pain screening?

Pain Screening Cohort: 27,683 Black and 233,765 White
SHEP responders & non-responders whose index visit was in
primary care

Results:

- ▶ **Blacks less likely than Whites to be screened for pain** OR: 0.79 $p < .0001$, 78% vs 82%*
- ▶ Adjusting for demographics, medical and psychological comorbidities; any active prescription of pain medication, outpatient utilization, and facility characteristics reduced the OR to 0.86, ($p < .05$).
 - ▶ Reduction due to **higher rates of outpatient visits in 2 yrs prior to index visit** among Black patients

**Estimated for Black and White established primary care patients at a typical VA facility*

2: Are there racial disparities in pain treatment?

Pain Treatment Cohort: Subset of the “screening cohort” with diagnoses of low back, neck, or joint pain (9,831 Black, 71,471 White)

- ▶ Analyses stratified by age (<65 and \geq 65), since racial differences in “dual use” is greatest for those \geq 65.
- ▶ Analyses incorporated:
 - ▶ Race
 - ▶ Most recent pain intensity rating
 - ▶ New or established primary care patient status
 - ▶ Interaction between race and most recent pain intensity rating
 - ▶ Healthcare facility and race within facility.
- ▶ Outcome: prescription of opioids in the year following the first pain diagnosis

Results – for patients < 65

- ▶ Blacks with moderate (4-6) or high levels (7-10) of pain were **less likely** to receive opioids than whites ($p = 0.0025$; $p = 0.0011$);
- ▶ No differences between black and white patients with low levels of pain intensity (1-3) and those with pain intensity ratings of 0 (no pain).

Results – for patients 65 and older

- ▶ Among patients with pain intensity ratings of zero, blacks were more likely than whites to receive opioid prescriptions ($p = .0087$),
- ▶ No significant racial differences in opioid prescriptions for all other Veterans.

- ▶ Difficult to interpret – older Whites are more likely to have a dual source of care and hence may be more likely to get prescriptions for opioids outside the VA

3. Are there racial differences in pain outcomes?*

- ▶ Among chronic pain patients treated for pain in the VA, African Americans were significantly less likely than whites to report that their pain treatment was good, very good, or excellent (55% versus 60%, OR: 0.83, $p = .0002$).
- ▶ However, when we adjusted for non-response bias using propensity score methods, the effect of race on perceived effectiveness of pain treatment was non-significant

*Unpublished research



3. Are there racial differences in pain outcomes (continued)?

- ▶ Next steps:

- ▶ Conduct additional analyses, stratifying by Veterans (<65 and \geq 65)



3. Are there racial differences in pain outcomes (continued)?

▶ Next steps:

- ▶ Examine impact of prior opioid prescription on satisfaction with pain treatment and functional interference due to pain.
 - ▶ Preliminary results (not stratified by age) suggest that having a prior prescription of opioids is not associated with greater perceived effectiveness of pain treatment or lower pain interference, for most Black and White patients with pain.
 - Exception – For Whites with pain levels of 1-3, perceived treatment effectiveness was higher for those who received opioids



Implications for Research

- ▶ More research is needed on whether disparities in opioid prescribing contribute to racial disparities in MSK pain.
- ▶ Research is needed to test strategies to improve pain management among populations that experience disparities.
 - ▶ Current VA pain strategy focuses on self-management as the foundation of chronic pain management
 - ▶ Newly funded study (VA HSR&D #13-030-2, PI Burgess), “A proactive walking trial to reduce pain in Black Veterans” will test the effectiveness of a proactively delivered counseling program to promote walking and decrease pain in Black Veterans with musculoskeletal diagnoses (Co-I’s: Abraham, Ackerman, Allen, Fu, Goulet, Heapy, Krebs, Krein, Meis, Kerns, Saenger, Taylor)



Implications: Reducing Disparities in Treatment

- ▶ Role of communication in reducing disparities
 - ▶ Non-whites have encounters with providers that are shorter, less positive, less participatory and with less “psychosocial” talk (Cooper, 2006)
 - ▶ Discussing use of prescription pain/arthritis medications with pharmacy staff differed by race/gender: white men (40.3%), white women (34.6%), black men (30.2%), and black women (19.8%) (LaCivita, 2009; Alabama NSAID safety study)
 - ▶ Small study of cancer patients found that short education/coaching intervention (with a communication component) eliminated racial disparities in pain (Kalauokalani, 2007)
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- ▶ Any other implications for research, policy and practice? Other thoughts?



Thank you!

▶ Questions? Comments?



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