Health Disparities and Inequities in the Treatment of Pain
What the Informed Clinician Needs to Know to Optimize Patient Care

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LEARNING OBJECTIVES

1. Identify individual and structural factors in healthcare that contribute to health inequities in pain treatment
2. Describe the intersection of individual identities (i.e. "intersectionality") in exacerbating adverse pain outcomes
3. Identify practical clinical and educational strategies that mitigate and dismantle health inequities in patient care

RELEVANT TERMINOLOGY

- Race: a social and political construction with no inherent genetic or biologic basis. Used to arbitrarily categorize and divide groups of individuals based on physical appearance (particularly – skin color), ancestry, cultural history, and ethnic classification.
- Gender: socially constructed roles, behaviors, activities, and/or attributes that a given society associates with being a woman, man, girl, or boy, as well as relationships with each other. Sex and gender vary from society to society and can change over time.
- Sex: biological category based on reproductive, anatomical, and genetic characteristics, generally defined as male, female, and intersex; used when describing anatomical, chromosomal, hormonal, cellular, and basic biological phenomenon.
- Sex and gender minority (SGM): populations include, but are not limited to, individuals who identify as lesbian, gay, bisexual, asexual, transgender, Two-Spirit, queer, and/or intersex. Individuals with same-sex or -gender attractions or behaviors and those with a difference in sex development are also included.
- Intersectionality: non-additive impact of being disadvantaged by multiple sources of oppression that combine to impact an individual or community in ways beyond the influence of any of those factors individually, coined by Crenshaw in 1989.
RELEVANT TERMINOLOGY

- **Equality**: Effort to treat everyone the same or to ensure that everyone has access to the same opportunities. However, this may not consider historical or structural factors that may benefit or disadvantage social groups in taking advantage of such resources. This can exacerbate gaps in equity.

- **Equity**: Effort to provide different levels of support based on an individual's or group's needs in order to achieve fairness in outcomes.

- **Implicit cognitive biases**: Automatic associations with social groups, often based on stereotypes, having the potential to lead to discriminatory treatment.

- **Microaggressions**: Everyday verbal, nonverbal, and environmental slights, snubs, or insults, whether intentional or unintentional, which communicate hostile, derogatory, or negative messages to target persons based solely upon their marginalized group membership. (Source: https://implicit.harvard.edu/implicit/aboutus.html)

Racial Disparities are widespread in Healthcare

- **Circulation: Heart Failure**

RACE IS NOT REAL BUT RACISM IS….

- Structural racism refers to the totality of ways in which societies foster racial discrimination through mutually reinforcing systems of housing, education, employment, earnings, benefits, credit, media, health care and criminal justice.

- These patterns and practices in turn reinforce discriminatory beliefs, values and distribution of resources.

Social determinants of health

- The nonmedical factors that influence health outcomes
- The conditions in which people are born, grow, work, live, and age
- The wider set of forces and systems shaping the conditions of daily life

Misconceptions about pain along racial lines

- Dates back centuries
  - Cartwright 1851, “blacks are insensible to pain due to less sensitive nervous system”
  - “Blacks could tolerate surgical operations with little pain”

- 1846-1849, J. Marion Sims performed gynecological procedures on enslaved black patients without anesthesia

Unethical experiments on black subjects due to notion of less pain and injury

- Mustard gas on black soldiers during World War II

Black soldiers were used as human guinea pigs in chemical experiments during World War II—enlisted in West Germany, but byUnita U.S.

By The Sun—
• Survey of 222 Caucasian white medical students and residents, 92 Caucasian non-healthcare personnel.
  • "Black skin is thicker than white and less likely to experience pain"
  • 38% of the general population, 40% of medical students, 25% of residents.
• National Ambulatory Medical Care Survey (NAMCS)

- 4,764 white patients, 692 black patients, and 682 Hispanic patients

- Back pain visits of Hispanic patients lasted 1.6 fewer minutes than those of white non-Hispanic patients ($P = 0.04$)

- Black patients were less likely than white patients to receive opioids for abdominal pain ($P = 0.04$) and less likely than white patients to receive opioids for back pain ($P = 0.046$)

- Hispanic patients were less likely than white patients to receive opioids for abdominal pain ($P = 0.003$) and less likely than white patients to receive opioids for back pain ($P < 0.001$)

Setting: Pain-related visits to US emergency departments were identified using reason-for-visit and physician diagnosis codes from 13 years (1993-2005) of the National Hospital Ambulatory Medical Care Survey.

Results: Of the roughly 157,000 pts analyzed, white patients with pain were more likely to receive an opioid (31%) than Black (23%), Hispanic (24%), or Asian/other patients (28%) ($P < .001$ for trend).
Black patients were 36% less likely to receive any analgesia compared to white patients in the fixed effect model, OR 0.64 [95%-CI: 0.55–0.75] and 40% less likely in the random effects model, OR 0.60 [95%-CI: 0.43–0.88]

Hispanic patients were 30% less likely to receive analgesia compared to non-Hispanic White patients in the fixed effects model, OR 0.70 [95%-CI: 0.57–0.87] and 25% less likely with a random effects model: 0.75 [95%-CI: 0.52–1.09]

Meta-analysis of several studies
Consistently show patients from minority groups are less likely to receive therapy for pain control
Method: Cross-sectional study design, we compared reported pain and pain management between non-Hispanic White and non-Hispanic Black newly admitted nursing home residents with cancer (n=342,920)

Results: While most residents received some pharmacologic pain management, Blacks were less likely to receive any compared with Whites (Blacks: 66.6%, Whites: 71.1%; aPR: 0.98, 95% CI: 0.97-0.99), consistent with differences in receipt of non-pharmacologic treatments (Blacks: 25.8%, Whites: 34.0%; aPR: 0.98, 95% CI: 0.96-0.99).
Chronic Pain
Racial Disparities
Factors

Provider Factors
Racial Stereotyping
Implicit Bias
Explicit Bias
Cognitive load

Systemic Factors
Lack of disparities curriculum
Lack of equal access to care
Language and Health Literacy

Patient Factors
Coping Strategies
Perceived Bias

SOCIO-ECONOMIC DISPARITIES IN PAIN MANAGEMENT

The Geography of Pain in the United States and Canada
Individuals with lower socioeconomic status do not receive the same medications for chronic pain conditions.

Responsible Factors include:

- Access to care
- Unaffordability of certain therapies
- Health literacy
- Prescribing biases

• 1,244,927 patients between 2016-2019
• Diagnosis of post-laminectomy syndrome/Chronic pain syndrome
• 59.182 (4.8%) had a spinal cord stimulation implant
  - 90.4% were White (53,498/59,182)
  - 20.4% were dually enrolled in Medicare and Medicaid (12,059/59,182)
• Black (0.62, p < 0.001), Asian (0.66, p < 0.001), Hispanic (0.86, p < 0.001), and North American Native (0.62, p < 0.001) patients had lower odds of receiving SCS compared with White patients
• Similar studies for other pain interventions are needed

Method: Subsample of Health And Retirement Study (HRS) respondents (n = 1,925) who were randomly selected for a supplementary pain module in 2010.

Results: Overall, 8.2% (95% confidence interval = 6.7-10.1%) of adults older than age 50 met criteria for high-impact chronic pain. This proportion rose to 17.1% (95% confidence interval = 12.3-23.4%) among individuals in the lowest wealth quartile.
Method: 4707 cancer survivors in the American Cancer Society’s Study of Cancer Survivors-II, who reported experiencing pain from their cancer. A multilevel, socioecological, conceptual framework was used to generate a list of 15 barriers to pain management, representing patient, provider, and system levels.

Results: Two-thirds of survivors reported at least 1 barrier to pain management. While patient-related barriers were most common, the greatest disparities were noted in provider- and system-level barriers.

GENDER DISPARITIES IN PAIN MANAGEMENT

Sex and Gender Disparities in Pain
OBSERVED BUT NOT WELL UNDERSTOOD

- Women report greater pain sensitivity
- Women are more likely than men to:
  - Experience multiple pain complaints
  - Have higher rates of MSK related disability
  - Recover from MSK injuries less quickly
  - Return to work later
- Female: Male ratios
  - 1.5 : 1  Headache, neck, shoulder, knee, and back pain
  - 2 : 1  Orofacial pain conditions
  - 2.5 : 1  Migraine headache
  - 4 : 1  Fibromyalgia


Sex & Gender | Office of Research on Women’s Health (nih.gov)
Gender Disparities in Pain

THE PARADOX

Compared to men:
- It is more acceptable for women to show pain
- Women clinically present with more pain symptoms
- Women are diagnosed more frequently with chronic pain syndromes

Yet, paradoxically, women’s:
- Pain reports are taken less seriously
- Their pain is more often discounted as being psychologic or nonexistent
- And their care plan is not the same evidenced based care


Sex and Gender Disparities in Pain

CLINICAL IMPLICATIONS

- Prospective cohort with 981 patients with acute abdominal pain in the ED
- 62% received analgesic medications

Gender Pain Scores, but Women less likely to receive any analgesia
- Men: 67%
- Women: 60%
- (95% CI: 1.1% to 13.6%)

Gender Pain Scores, but Women less likely to receive opioid analgesia
- Men: 56%
- Women: 45%
- (CI: 4.1 to 17.1)

Similar Pain Scores, but Women less likely to receive opioids
- Men: median 49 min
- Women: median 65 min
- (95% CI: 3.5-33 min)

Controlling for age, race, triage class and pain score; sex-specific dx excluded


Gender Disparities in Pain

CARE FOR TRANSGENDER INDIVIDUALS

Gender identity may play a more significant role in pain sensation than genetic sex

Transgender women:
- Demonstrated greater temporal summation for heat pain stimuli or mechanical stimuli than cis-gender men and cis-gender women
- Reported similarly to cis-gender women with greater chronic pain severity compared to cis-gender men

Yet…
- Restricted access to pain care
- Less personalized, biopsychosocial approaches to pain management
- Heightened risk of substance misuse, especially pain medicaitons


Age-related and SES Disparities in Pain

- Older adults (age 65+), the unemployed, those living in poverty, and rural residents experience the highest rates of chronic pain and high-impact pain.
- COVID-19: lack of access to telemedicine for rural and lower SES patients
- Lower health literacy associated with worse pain outcomes

Intersectionality & Health

- Non-additive impact of being disadvantaged by multiple sources of oppression that converge to impact an individual or community in ways beyond the influence of any of those factors individually
- Confluence of factors that impact physical and mental health, and exacerbate health inequity
- Influence on cognitive implicit bias is complex
- An intersectional lens offers a holistic look and highlights the limits of healthcare

Intersectionality in Pain Medicine

- Recognition of intersecting impact of race and gender on pain outcomes
- Intersectional factors impact physical and psychological outcomes
- Exacerbation of pain-related functional disturbance
- Identity factors (e.g., race, age, and gender identity) further influenced by pain behaviors and psychiatric history do influence patient care
Participants (N=1,173) were from the epidemiological Healthy Aging in Neighborhoods of Diversity across the Life Span (HANDLS) study; reported pain in various body sites.

A significant three-way interaction was found for race, sex, and poverty status (odds ratio [OR] 5.64, 95% confidence interval [CI] [1.25-28.97], P = 0.025).

Specifically, among Whites living in poverty, women were more likely to report pain than men (P < 0.05), suggestive of a double disadvantage of being both female and living in poverty.

Among those above the poverty line, African American (AA) men were less likely to report pain than White men (P < 0.05) and AA women (P < 0.019) due to greater stoicism, coping skills, or sources of resilience.

Consistent with prior research, significant main effects revealed that older age (OR 5 2.16, 95% CI [1.28-3.64], P = 0.004) and higher depressive symptoms (OR 5 1.03, 95% CI [1.02-1.04], P < 0.001) were associated independently with increased likelihood of reporting pain.

Conclusion: In an urban population, intersecting sociodemographic factors create unique social identities that impact pain, and emphasize the need for identification of relevant mediational pathways.

N=115 patients with chronic pain in rural Alabama

Measures of pain catastrophizing, depression, pain intensity, pain interference, perceived disability, and life satisfaction

Mean age of 52, 79% were female, 74% were African-American, 72% reported annual income between 00,000-12,999, and 61% were unemployed.

Mean years of education=12.26, reading level percentile was 17.33.

Cross-sectional multivariate and univariate analyses were conducted

African Americans reported higher pain intensity and pain interference than White Americans

Pain catastrophizing was uniquely associated with pain intensity, pain interference, and perceived disability; depression was uniquely associated with pain interference, and life satisfaction.

Pain catastrophizing mediated the relation between primary literacy and pain intensity; age effects were differentially mediated by either pain catastrophizing or depression.

Conclusion: Data provides insight into the specific demographic and psychosocial factors associated with chronic pain in a low-literacy, low-SES rural population.

Intersectionality is multifaceted

- Consideration of intersectionality aims to highlight oppressive systems

- Important to note that race and gender alone do not fully explore the potential reach and impact of intersectionality on patient outcomes

- Social class, education level, sexual orientation, etc also influence outcomes

- Mere identity-matching between patient and provider is not feasible in the medical landscape, nor would it guarantee patient satisfaction or desirable outcomes

- Diversifying healthcare benefits all, impacts patient outcomes
PRACTICAL STRATEGIES TO:
MITIGATE BIAS & SYSTEMIC BARRIERS
PROMOTE HEALTH EQUITY
ENHANCE PATIENT OUTCOMES

PRACTICAL STRATEGY #1:
Provide Pain Education (PE)

- A range of educational interventions
- Biological processes underpinning pain
- Pain is a protector, can be overprotective
- Pain is real, even though tissue may not be in danger (chronic pain)
- Knowing how pain works can decrease emotional responses to pain
- Address role of psychosocial impact of pain


PRACTICAL STRATEGY #2:
Standardize Clinical Practices

- Provider frustration with patients associated with worse symptom management and greater patient distress
- Provide brief PE, then assess for biological, psychosocial, and social contributors of pain
- Use standardized approach to assess for medication and recreational substance use for all patients

Example of a Standardization Approach: SBIRT

- **Screening**, **Brief Intervention**, and **Referral to Treatment** (SBIRT) is a public health approach to the delivery of early intervention and treatment services for substance use.
  - **Screening**: Universal screening is used to quickly assess severity of substance use and identify appropriate level of treatment.
  - **Brief Intervention**: Increase insight and awareness regarding substance use and motivation for behavioral change.
  - **Referral to Treatment**: Provide those identified as needing more extensive treatment with access to specialty care.

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PRACTICAL STRATEGY #3: Communicate to Challenge Biases

- Acknowledge biases and assumptions (we ALL have them)
- Cultural humility is not about memorizing facts
- Avoid reliance on assumptions
- Avoid "Trans Broken Arm Syndrome"
- Work to provide equitable resources and treatment options

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PRACTICAL STRATEGY #4: Take advantage of consultation

- Benefits of team-based treatment approach
  - Formal and informal consultation with colleagues improves patient outcomes
  - Recognize that pain comorbidities exacerbate the sensory experience
    - Shared neural mechanisms
    - Insomnia; Depression; Substance Use; PTSD
  - Utilize referral resources to address biopsychosocial aspects of pain
  - Mitigate clinician burnout

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Real-world considerations of intersectionality in patient care

- Practically speaking, clinicians must practice cultural agility and humility to understand the impact of intersectional identities, and adjust clinical approaches that achieve health equity to combat such influences in order to optimize clinician-patient relationship and patient outcomes.

- Patient outcomes are improved through culturally-informed pain treatment.

Case Examples

CASE DISCUSSION #1

- Mr. C.F. is a Black 21-year-old male with Sickle Cell Disease.
- Presents to the Emergency Department with diffuse body pain.
- Home pain medication regimen: Oxycodone 10 mg q6h prn, Oxycontin 20 mg BID.
- Imaging and labs are unremarkable.
- He is requesting admission to the hospital and “stronger” pain medications.
- This is his 4th visit to the ED in the past two months.

- What are your concerns as one of this patient’s providers?
- Is this truly “sickle cell crisis” even with normal labs and imaging?
- How do you balance empathy with patient safety?
- He tells you, “you think I am drug seeking don’t you?” How do you respond?
- What social determinants of health are at play here?
CASE DISCUSSION #2

Mrs. C.R. is a 57 year old Latinx Female with chronic back pain. Returns to clinic for a follow up evaluation
- Spanish-speaking only
- Home pain medication regimen: Hydromorphone 8 mg q6h prn
- She missed her last two clinic appointments
- Her last UDS was positive for oxycodone

- What are your general concerns?
- Impact of language barrier on these issues?
- The provider is considering dismissing the patient from the clinic. Your thoughts?
- What social determinants of health could be at play here?
- Preventative measures to help our patient?

CASE DISCUSSION #3

Mr. RS is a 67 yo white male with diabetic neuropathy, DM2
- Home pain medication regimen: Gabapentin 300 mg TID
- Born intersex; clinical team using outdated terminology in rounds and in documentation
- Rounds discussion focused on intersex status at birth, not chronic pain

- What are your general concerns?
- What social determinants of health could be at play here?
- How would you address the use of outdated terminology with your colleagues?
- The patient informs you that he has been reading his treatment notes. How would you address the team’s terminology use with the patient?

Achieving Health Equity is not a Zero-Sum Game

- Zero-Sum Game in Economics: the net benefit of sums and losses add up to zero; if one person wins, the other loses in equal measure
- The US History of Wheelchair Ramps
  - First intro in 1950s
  - 1968 Architectural Barriers Act
  - 1990 Americans with Disabilities Act (ADA)
- Did the need suddenly arise in the 1950s?
- Who benefits?

Image created by Market Business News.

https://dictionary.apa.org/zero-sum-game
https://www.economicshelp.org/