

Medical racism discussions

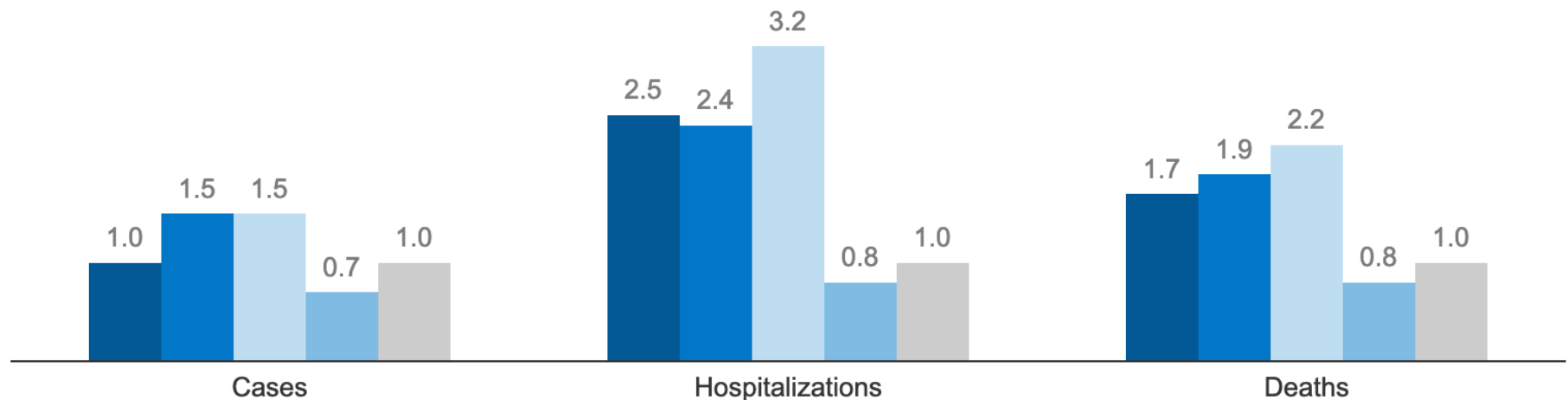
Bringing anti-racism pedagogy into the
STEM classroom

Robin Ball
Continuing Lecturer
Molecular and Cell Biology
LTF 2020-21

Why are there COVID racial disparities?

Age-Adjusted Risk of COVID-19 Infection, Hospitalization, and Death, Compared to White People in the United States

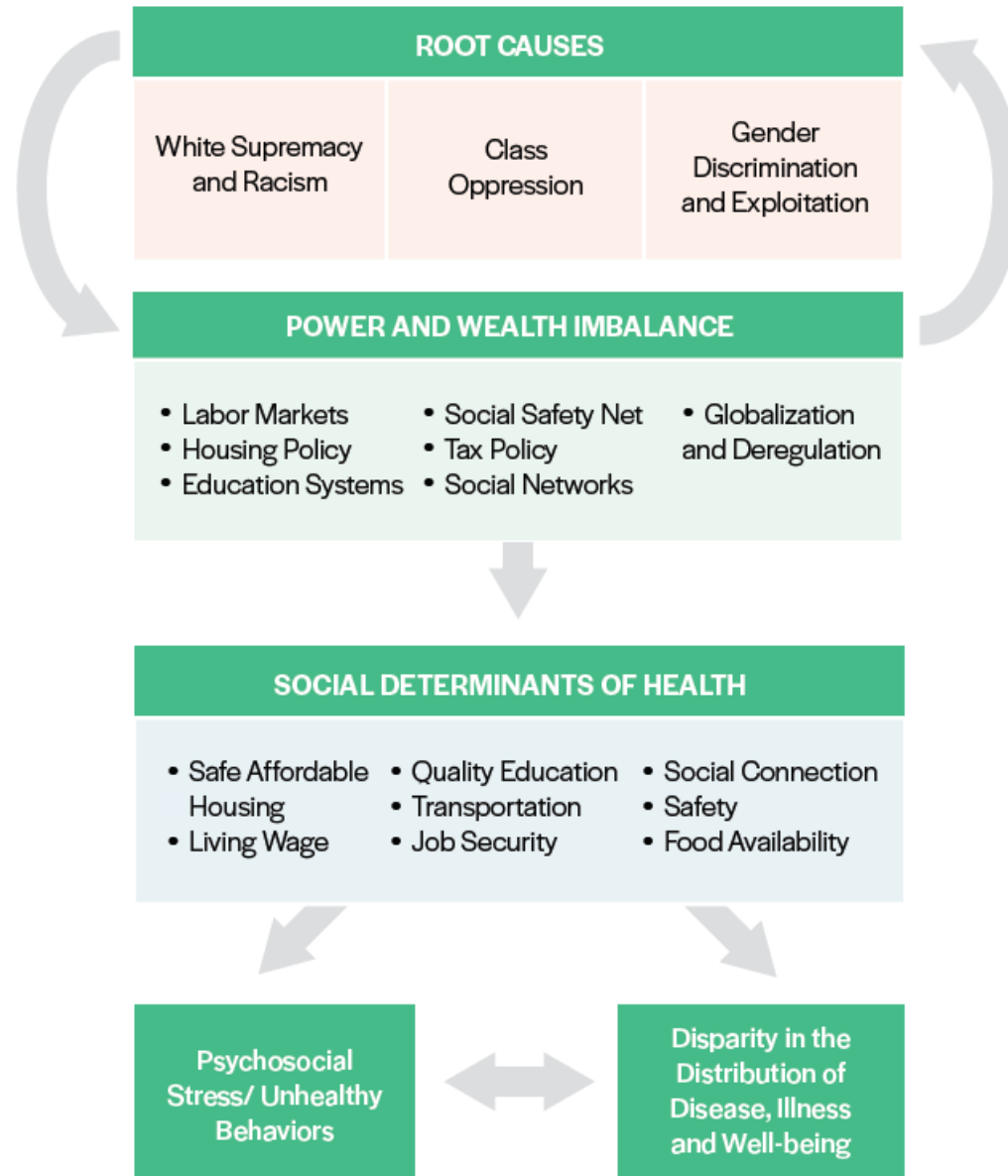
■ Black ■ Hispanic ■ American Indian or Alaska Native ■ Asian ■ White



NOTE: Persons of Hispanic origin may be of any race but are categorized as Hispanic; other groups are non-Hispanic; data for Native Hawaiian or Other Pacific Islander (NHOPI) people are not reported.

SOURCE: CDC, Risk for COVID-19 Infection, Hospitalization, and Death By Race/Ethnicity, <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html>. Data as of February 1, 2022, accessed February 8, 2022. • PNG

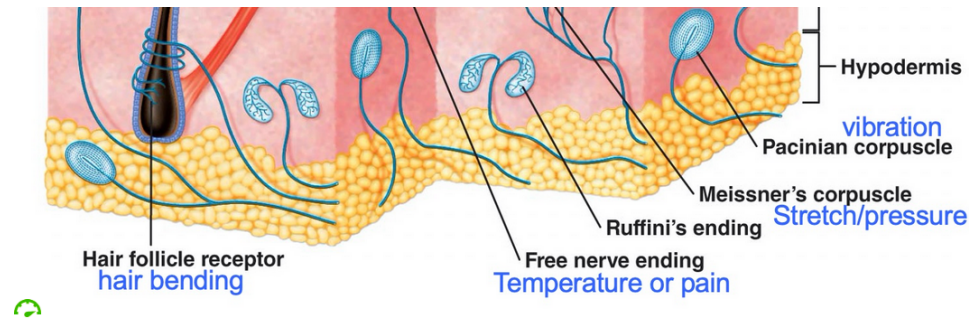
Racism, not race, causes health disparities



MCB 32: Introduction to Human Physiology

- Lower division survey course, about 400 students
- Mostly non-MCB majors interested in careers in medicine and public health
- Online version has all the material in modules in bCourses with short pre-recorded videos
- Already incorporated some social issues in modules, such as stereotype threat, racist stereotypes related to pain sensation, high prevalence of hypertension in Black Americans

Example bCourses page



Medical moment

There is a pervasive stereotype that Black people have thicker skin and that their nerve endings are less sensitive than other people. This is not true at all. The thickness of the skin epidermis and sensitivity of nociceptors are within the same range for all races. Some medical students and doctors even believe this stereotype, which leads to undertreatment of pain in Black patients. The table below shows the percentage of people in the study who agreed with the statements on the left. The percentage should be 0% because these are false statements.

Hoffman et al., 2016, <i>PNAS</i>	Non-medical	1 st year medical student	2 nd year medical student	3 rd year medical student	Medical residents
Sample size	92	63	72	59	28
Skin of black people is thicker than in white people	58%	40%	42%	22%	25%
Nerve endings in black people are less sensitive than in white people	20%	8%	14%	0%	4%

If you want to read more about racist beliefs in medicine over our history, [read this news article](#) .

Sensory receptors in somatosensory system

Mechanoreceptors sense light touch and pressure. They have ion channels that are mechanically-gated, and open when the membrane is deformed (like by touch). These channels are Na^+ channels, so when the channels open, Na^+ will go into the neuron and cause an excitatory graded potential.

Where are mechanically-gated channels located in the mechanoreceptors?

Medical racism discussion assignments

Students given a paper or two to read related to an example of medical racism

Respond to article on bCourses discussion board and reply to another student's response (within each discussion section)

Five discussions throughout the semester

Graded based on effort for posts on discussion board

GSIs led short discussion on assignments during discussion section. The GSIs summarized main points from articles.

Five medical racism discussion topics

Week	Module topic	Medical racism topic
1	Review cells	1. Introduction to medical racism (TED talks) Race is not biological Health inequities result from racist policies
3	Reproductive system	2. Birth control clinical trials Taking advantage of poor marginalized populations for medical testing
6	Somatosensory system	3. Racial bias in pain treatment Racist stereotypes affect how patients are treated
8	Cardiovascular system	4. Race-based pharmaceuticals (BiDiI) Driven by commercial interests of pharmaceutical companies
10	Kidney function	5. Race-based medical measurements (eGFR) Unscientific race-corrections in medical measurements can lead to undertreatment

Lessons learned along the way

1. Incorrect terminology for different racial groups

We added a terminology page and linked to it for every assignment.
Took off points for incorrect and offensive terms.

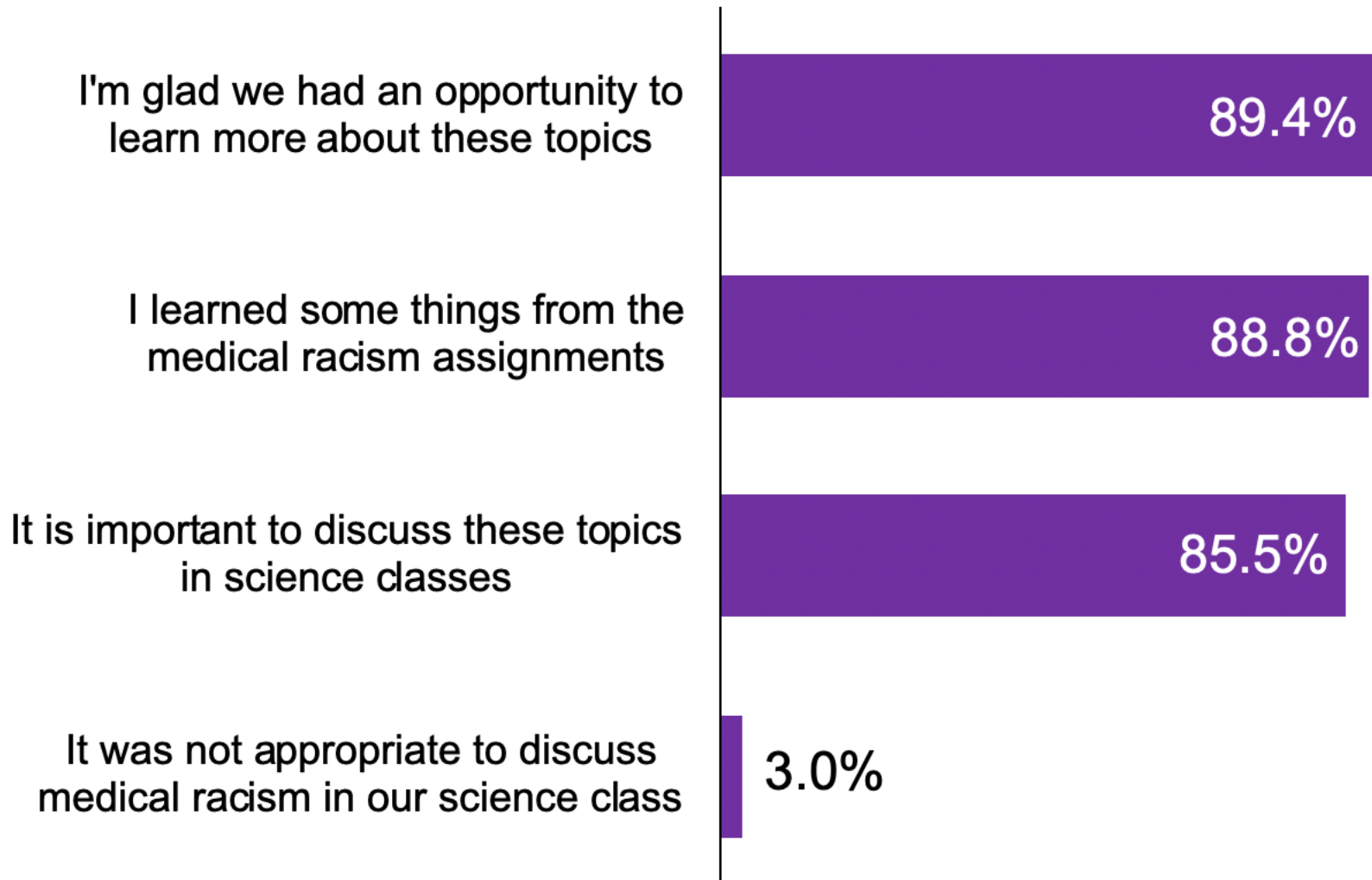
2. Harm to students who have experienced medical racism

Provided a form students could fill out to opt out of the assignments.
Only two students did this in a class of 415.

3. Limited coverage of material (most of our examples related to Black Americans)

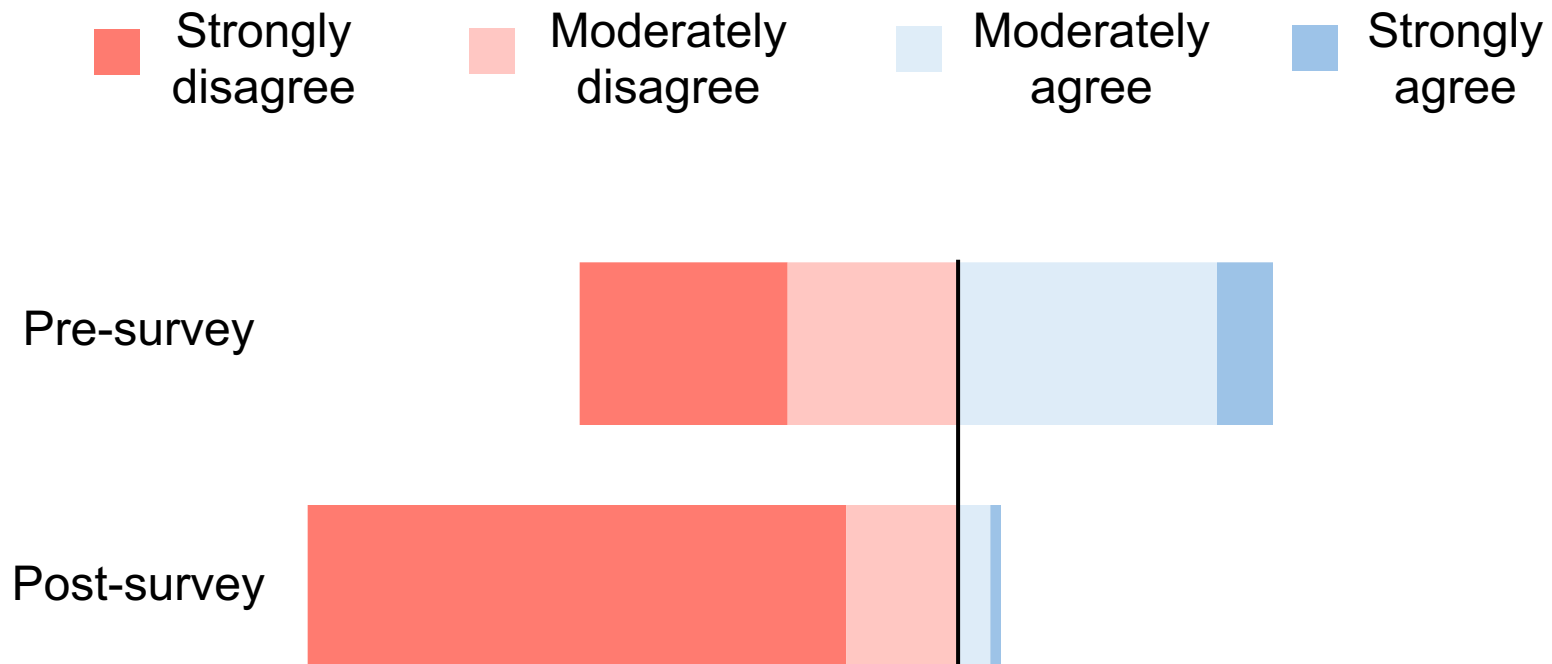
One option for the final paper was to research another example of medical racism, so students could write about a topic more relevant to them

What did you think about including medical racism discussions in our human physiology course?



Shift in survey results after completing discussions

“There are physiological differences between different races”

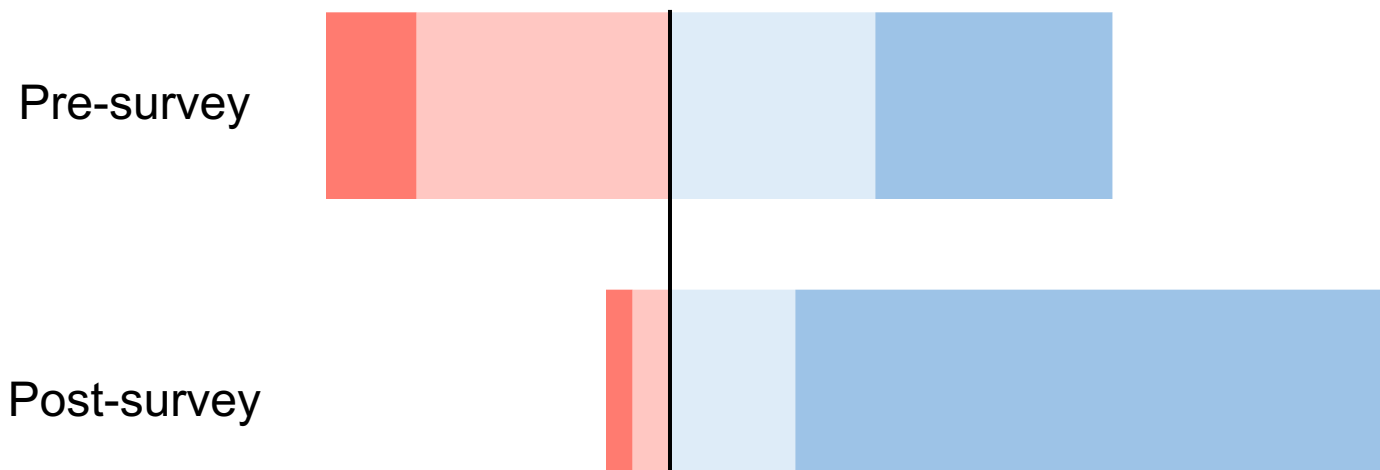


n = 435 pre-survey, 331 post-survey

Shift in survey results after completing discussions

“Race is a sociopolitical category and has no biological basis”

Strongly disagree Moderately disagree Moderately agree Strongly agree



n = 435 pre-survey, 331 post-survey

Motivation to keep teaching medical racism

Student quote:

“Integrating the reality of racism in medicine that continues to exist is a crucial step to dismantling and fully eradicating these flaws. Having conversations on issues like these, regardless of how uncomfortable they may be, is important as people taking this course are most likely going to go into health fields and potentially become primary health professionals. If these issues are not discussed in this form of higher education, when will they?”

Thank you to my 2020-21 LTF colleagues!

Thank you to my MCB 32 GSIs, especially Rachel Mernoff and Aminta Kouyate who shared resources with me from the Joint Medical Program