NYU Langone Health

RSNA 2023
LEADING THROUGH CHANGE

Design and Impact of an Imaging-Based Health Disparities Lecture in the Medical Student Radiology Curriculum

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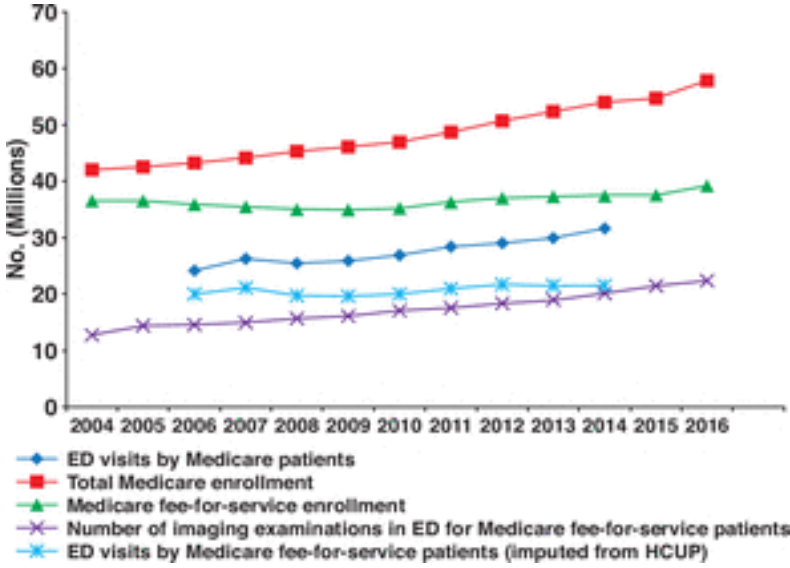
Disclosures

- None

Imaging-Based Health Disparities

- Recently there have been increased efforts within medicine to highlight and address health disparities
- Many of these disparities are rooted in imaging access and utilization, including examples such as:
  - Racial differences in utilization and efficacy of cancer screening
  - Lower quality imaging because of cultural barriers or disabilities
  - Less access to imaging due to economic and racial factors
- Imaging volumes have been increasing over time, and so these disparities are increasingly compounding on other health inequities



Increasing number of ED imaging exams (purple) over time

Selvarajan et al. The Increasing Use of Emergency Department Imaging in the United States: Is It Appropriate? AJR Am J Roentgenol. 2019

Why Focus on Medical Students?

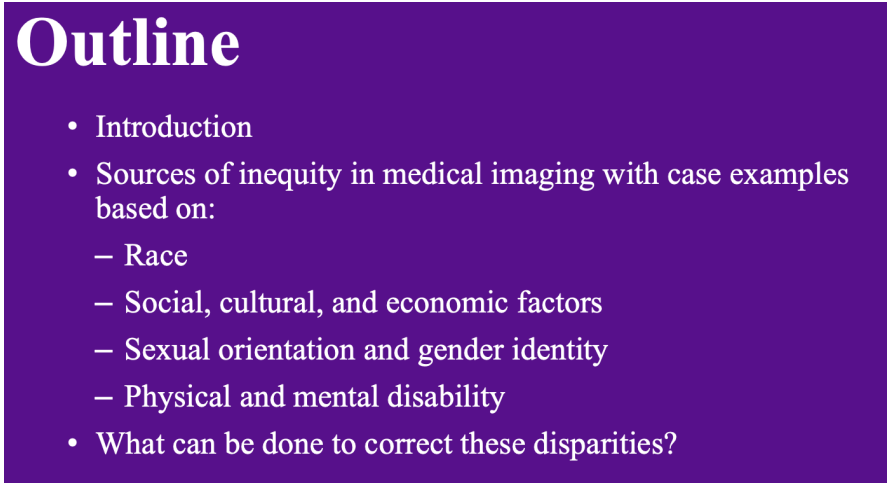
- Trainee education is critical for improving long-term health equity
- Currently, medical student radiology education revolves around anatomy and basic interpretive skills but is an appealing venue for promoting early recognition of imaging-based health disparities
- Most medical students will become referring physicians rather than radiologists - if they are better able to recognize potential biases or gaps in imaging tests, they hopefully will be more conscientious about the imaging ordered for their patients

Methods

- We developed a 45-minute PowerPoint-based teaching session focusing on sources and examples of imaging-based health disparities
- To evaluate educational impact, pre- and post-session surveys are administered using a combination of multiple-choice or true/false questions and 5-point Likert scale questions to measure knowledge gain and improved student confidence with discussion of imaging-based disparities
- Initially presented in March 2023 in a highly subscribed introductory diagnostic radiology clerkship elective in our medical school curriculum

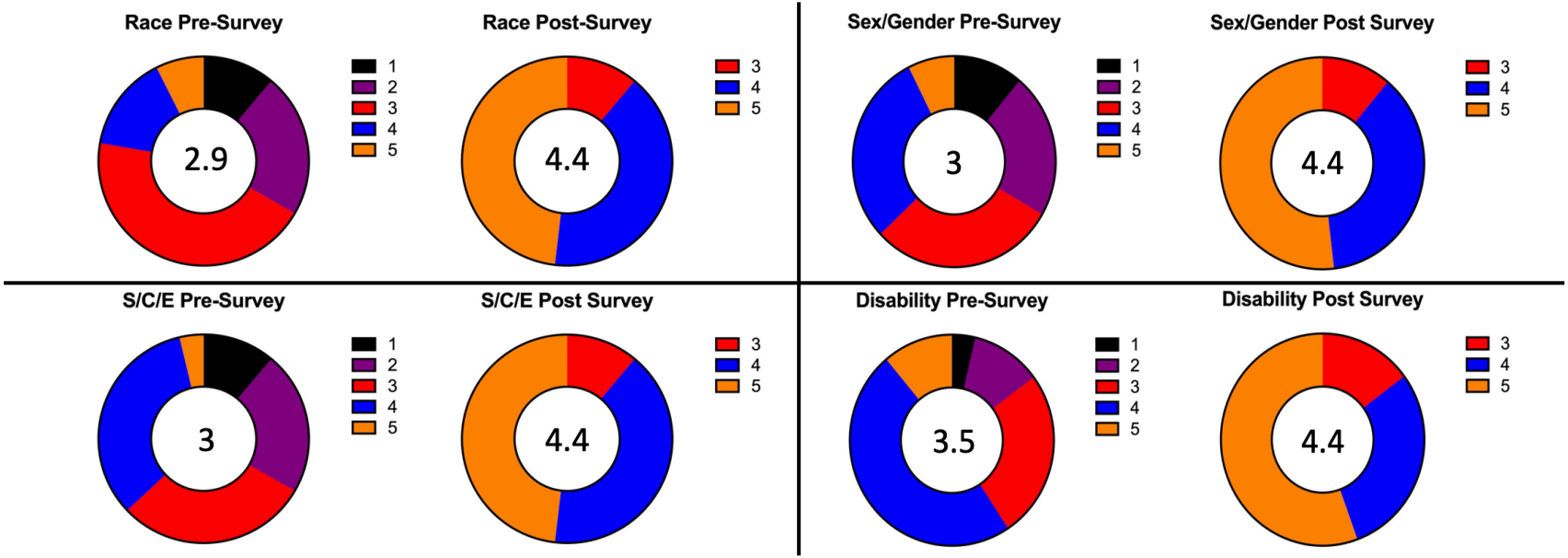
Lecture Structure

- General introduction including a slide on bias in artificial intelligence algorithms in-and-out of radiology
- Four “pillars” on different sources of inequity
  - Each of these four sections starts with an open-ended question soliciting examples students had witnessed, shows a real imaging case with in-depth discussion, and briefly reviews additional examples drawn from the literature
- Section detailing successful examples of interventions aimed at these sources of inequity



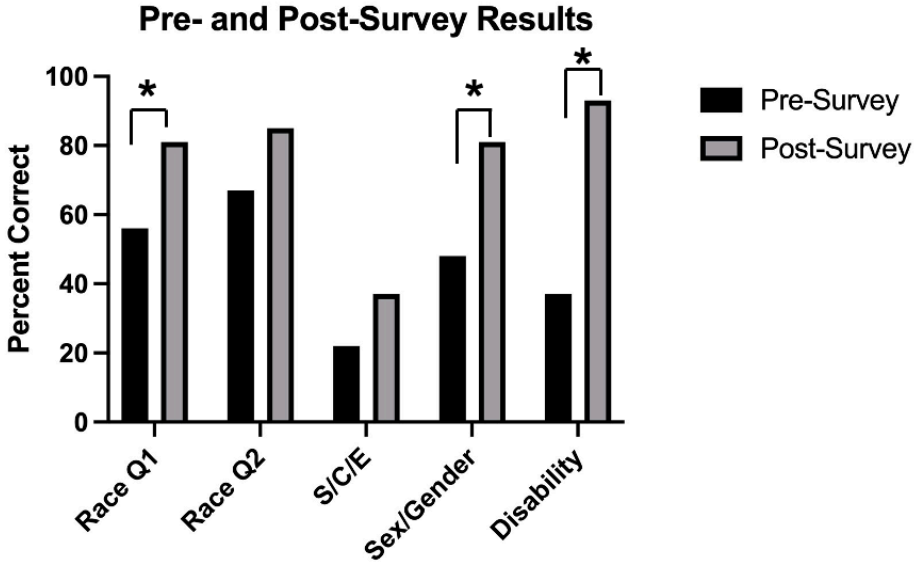
Our outline slide

Survey Results: Comfort (n=27)



Distribution of student answers to the following question: “I can describe specific examples of how [specific source] can lead to imaging-based health disparities” with 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree. The number in the middle of each donut indicates the average response. *S/C/E = social/cultural/economic factors. **All differences are significant**.

Survey Results: Knowledge (n=27)



Every student answered the same five questions (two regarding racial disparities, one of every other category) in the pre- and post-surveys. The percentage of correct answers was compared between the two surveys. *S/C/E = social/cultural/economic factors. **Differences marked * are significant**.

Discussion

- Following the session, students felt more comfortable discussing examples of imaging-based health disparities and improved their performance on the knowledge assessment questions across all four of our selected categories
- Results are limited by small number of assessment questions and low sample size
  - The session is now being presented monthly, so we will have increasing results
- Based on the success of this initial work, the session may be expanded to the resident curriculum

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THANK YOU