# Teaching Health Equity in the Time of COVID-19: a Virtual Look Through the Lens of Structural Racism

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***INTRODUCTION:*** In the context of marked health disparities affecting historically marginalized communities, medical schools have an obligation to rapidly scale up COVID-19 education through the lens of structural racism.

***AIM:*** To develop and implement a virtual curriculum on structural racism in a required COVID-19 course for medical students using "just-in-time" training.

***SETTING:*** Academic medical institution during the height of COVID-19 in the spring of 2020.

***PARTICIPANTS:*** Three hundred ninety-three 3rd and 4th-year medical students prior to re-entry into clinical care.

***PROGRAM DESCRIPTION:*** Three educational sessions focused on (1) racial health disparities, (2) othering and pandemics, and (3) frameworks to address health inequity. The virtual teaching methods included narrated recorded presentations, reflections, and student-facilitated small group dialogue.

***PROGRAM EVALUATION:*** In matched pre- and post-surveys, participants reported significant changes in their confidence in achieving the learning objectives and high satisfaction with small group peer facilitation.

***DISCUSSION:*** The use of "just-in-time" training exploring the intersection between COVID-19 and structural racism facilitated the delivery of time-relevant and immediately clinically applicable content as students were preparing to re-enter a transformed clinical space. Similar approaches can be employed to adapt to changing healthcare landscapes as academic medical centers strive to build more equitable health systems.

*KEY WORDS:* health equity; COVID-19 pandemic; structural racism; social justice.

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## INTRODUCTION

While responding to a pandemic of unprecedented scale, academic medical centers are facing the challenging task of educating students about COVID-19 as events unfold. Because the pandemic has placed a magnifying glass on the effect of structural racism on health in the USA,[1] medical educators must prepare students to examine racial health disparities and innovate solutions that promote health equity (HE) when implementing new and timely educational content on COVID-19.[2,3]

The "just-in-time" (JIT) approach to medical education provides time-relevant and immediately applicable content to help learners apply new or evolving concepts to clinical care. JIT training has been shown to be effective for introducing new therapies and practice guidelines for a variety of learners.[4,5] In the context of COVID-19 racial disparities, we aimed to use JIT to restructure and bring new urgency to HE education just as students were preparing to re-enter clinical care in the summer of 2020. In this article, we describe the design and implementation of structural racism pedagogy embedded into a COVID-19 pandemic course, and report on initial outcomes. The overarching aim of this innovation was to provide key context to the evolving pandemic by (1) deconstructing health inequities in the context of current events surrounding the COVID-19 pandemic, and (2) inspiring advocacy for health justice.

## SETTING AND PARTICIPANTS

Rutgers New Jersey Medical School is in Newark, NJ. The main teaching hospital is University Hospital, which is the only public hospital in the state and primarily serves historically marginalized patient populations. Offered in May and again in June 2020, during the initial COVID-19 surge at our hospital, we created and implemented a required virtual 4-week COVID-19 pandemic course for all rising 4th (May) and 3rd (June)-year medical students (MS4 and MS3, respectively). Due to scheduling conflicts for MS4, some took the course in June. The 4-week course included 7 content areas: virology, epidemiology, diagnosis and management of COVID-19, mental health, telemedicine, medical ethics, and HE. Because our students at the time were excluded from direct clinical care and in-person instruction, the learning

environment necessitated a virtual delivery, which allowed the students to work at their own pace. In using the JIT approach, we prioritized an exploration of structural racism in order to prepare students to re-enter a clinical space fundamentally changed by both the pandemic and by transformative current events, such as George Floyd's murder, which renewed calls to address structural racism as a public health urgency.

Prior to the COVID-19 pandemic course, all students had participated in a required pre-clerkship HE curriculum.[6] Students develop a working knowledge of unconscious bias, social determinants of health (SDOH), racism and health, and improving care for historically marginalized patient populations. Based on the work of Jones,[7] the HE thread defines structural racism as a system of structuring opportunity and assigning value based on the social interpretation of race. Racism is driven by systems of power that unfairly advantage or disadvantage racial groups, and saps the strength of society through the waste of human resources.[7]

## PROGRAM DESCRIPTION

After reflecting on pre-existing HE content, emerging COVID-19 health disparity data, and our own evolving clinical and administrative experiences, faculty involved in HE content development (MSA, MDP) and educational leadership (JH, CB, MSG) identified three key topic areas using the JIT for timely delivery of innovation. Appendix A summarizes the final topics, remote teaching modalities, learning objectives, and learning assessment methods. We timed the sessions to occur in the 2nd, 3rd, and 4th weeks of the course, respectively. The sessions were delivered asynchronously with the exception of the small groups, which were held via video in real time. We set due dates for the mandatory assignments at the end of each week after the session.

### Part 1: Laying the Foundation

For the first session, we assigned a 25-min recorded narrated presentation, which reviewed emerging data on COVID-19 health disparities by race/ethnicity, income, and neighborhood,[1,8] and connected them to SDOH, structural violence, and racism. We next explored working from home as a privilege, presenting data on racial/ethnic inequity in the ability to work from home, and highlighted the implications for the surge in infections and hospitalizations. Lastly, we focused on the biases and structural racism ingrained within our healthcare systems as a source for disparities in COVID-19 testing and healthcare access. The students then completed a 3-question quiz with essay responses (Appendix B). Students could reference all session materials to formulate their responses.

### Part 2: Othering in the Time of COVID-19

For the othering session, we assigned a 60-min recorded narrated presentation. In the presentation, we first defined othering as the differential treatment of those whom we see as our "in-group" versus those we see as "other"—meaning someone perceived as in a group outside of one's own group.[9] We connected the SDOH driving COVID-19 to systemic othering narratives that have been created and shared over many generations, and that can drive stigma, hate crimes (such as those against Asian Americans in response to COVID-19), and on-going viral transmission.[10] We challenged our students to deconstruct othering narratives that cause harm, introducing the BRIDGE framework (Appendix C). Within the culture of medicine, we emphasized creating connections to promote collective wellness. To assess learning, we assigned a reflection essay of at least 400 words asking students to reflect on othering narratives they have witnessed that might impact the care of patients.

### Part 3: Looking Forward

The last session started with a 23-min recorded, narrated presentation that focused on promoting health equity within the culture of medicine. We incorporated three key steps: (1) self-reflection, (2) dismantling oppression, and (3) sustaining belonging; in which we explored three internally developed skills-based frameworks, CHARGE[11], INTERRUPT[11,12], and BRIDGE (Appendix C) to help guide students with actionable tools. Lastly, we acknowledged that the pandemic and its health and economic consequences will continue to evolve, with a significant role for future physicians to study and implement change.

We then assigned students one of three articles[13–15] to present to their peers during a scheduled virtual small group (8 students each) using a video interface. Each of the perspective articles examined or proposed a systems-based approach for addressing health inequities. We designed a guided worksheet and assigned one student as a facilitator, who led the group through the questions on the worksheet, and one student as a recorder, who submitted the group's responses in an online short answer quiz format (Appendix B).

## PROGRAM EVALUATION

To evaluate the immediate effectiveness of the sessions, we asked the students to complete anonymous pre- and post-surveys, linked with a non-identifiable key, for each session. Students provided basic demographic information, and reported on their confidence in achieving the learning objectives in both the pre- and post-surveys. The post-surveys additionally asked 2 questions adapted from the American Association of Medical Colleges Year Two Questionnaire[16] about whether the sessions would influence their future practice. The post-surveys also assessed satisfaction with each of the learning components and asked for specific feedback. The students ranked each of the responses with respect to agreement on a 5-point Likert Scale.

### Statistical Analysis

We reviewed results from all the post-survey responses and matched pre- and post-responses with the non-identifiable key. We summarized categorical variables by counts and proportions

**Table 1 Self-Reported Demographics of Survey Respondents, Collated from All Surveys over All 3 Sessions**

| | April, *n*=179 | May, *n*=194 |
|---|---|---|
| **Gender** | | |
| Cisman | 90 (50%) | 95 (49%) |
| Ciswoman | 88 (49%) | 96 (50%) |
| Gender non-binary | 0 (0%) | 0 (0%) |
| Transman | 0 (0%) | 0 (0%) |
| Transwoman | 0 (0%) | 0 (0%) |
| Something else/not listed | 0 (0%) | 0 (0%) |
| Prefer not to answer | 2 (1%) | 2 (1%) |
| **Race/ethnicity** | | |
| Asian | 67 (37%) | 80 (41%) |
| Black/African American | 18 (10%) | 10 (5%) |
| Hispanic/Latinx | 14 (8%) | 23 (12%) |
| Multiple ethnicities | 7 (4%) | 6 (3%) |
| Native Hawaiian/Pacific Islander | 0 (0%) | 2 (1%) |
| White | 68 (38%) | 68 (35%) |
| Prefer not to answer | 5 (3%) | 8 (4%) |
| **Practice intention** | | |
| Anesthesia | 9 (5%) | 11 (6%) |
| Emergency medicine | 11 (6%) | 14 (7%) |
| General surgery or surgical subspecialties | 49 (27%) | 56 (29%) |
| Medical/pediatric subspecialties | 48 (27%) | 35 (18%) |
| OB/Gyn | 5 (3%) | 10 (5%) |
| Physical medicine & rehab | 7 (4%) | 0 (0%) |
| Primary care | 18 (10%) | 27 (14%) |
| Psychiatry or neurology | 16 (9%) | 8 (4%) |
| Unsure/other/prefer not to answer | 16 (9%) | 33 (17%) |

and continuous variables using means. Changes in matched pre- and post-survey responses were evaluated using paired *t*-tests. Group differences were assessed by ANOVA. All statistical analyses were conducted using Microsoft Excel and SAS version 9.4 (Cary, NC, USA). This study was approved by the Rutgers Institutional Review Board (Pro2020000498).

## RESULTS

Three hundred ninety-three students participated in the sessions, including 179 MS4 in May 2020, and 189 MS3 and 25 MS4 in June 2020. Table 1 describes the baseline self-reported demographics and practice intention of the students who responded to at least one of the pre- and/or post-surveys (*N*=373 out of 393 total participants or 95%). Satisfaction was high for all components (*n*=681 total post-survey responses), with means of around 4.00. Students expressed the highest satisfaction with the small groups and peer facilitation. After the last session, 160/183 (87%) agreed either to a considerable or very high degree (mean 4.10) that what they learned will impact how they care for patients in the future; 158/183 (86%) agreed that their learning contributed to the ability to work in disadvantaged communities (mean 4.01).

In the matched surveys, we found a statistically significant increase in confidence for all the learning objectives (Table 2), with no significant difference in the time offered. In the ANOVA analysis, we detected no significant difference when exploring responses by gender or race/ethnicity.

Written feedback about strengths for each session frequently focused on the high quality of the materials, as well as the remote learning at their own pace. Many highlighted the timeliness of the content and value of the small group dialogue with peer facilitation in enhancing the learning environment. Suggested improvement focused on delving more into specific learning issues (e.g., additional patient populations, more on the local context), and more opportunities for small group learning. Some comments focused on the burden placed on the recorder and facilitator roles during the peer-facilitated small group, and few recommended inclusion of additional viewpoints and readings on the origins of disparities.

## DISCUSSION

In this article, we describe the design and implementation of an educational innovation to integrate HE content on structural racism into a 4-week COVID-19 pandemic course. Our JIT approach provided time-relevant and clinically actionable content just as students were preparing to re-enter clinical care. Students expressed high satisfaction with the materials as well as increased

**Table 2 Mean Confidence in Ability to Achieve Learning Objectives for Each of the HE COVID-19 Sessions. Matched Pre- and Post-Surveys (All Participants). Means are Based on a 5-Point Likert Scale (1 Hardly at All, 2 to a Small Degree, 3 to a Moderate Degree, 4 to a Considerable Degree, 5 to a Very High Degree)**

| Learning objective | Pre | Post | Change | *P* value |
|---|---|---|---|---|
| **Session 1, *N*=219 (56% matched response rate)** | | | | |
| Illustrate the impact of social determinants and structural racism on health outcomes of vulnerable populations during the COVID-19 pandemic | 3.15 | 4.04 | +0.89 | <0.0001 |
| Explain the unique challenges to vulnerable populations with respect to social distancing and isolation | 3.23 | 4.13 | +0.90 | <0.0001 |
| Describe the biases built into the health system that have led to disparities in testing and access to quality healthcare for COVID-19 | 3.03 | 4.02 | +0.99 | <0.0001 |
| **Session 2, *N*=107 (27% matched response rate)** | | | | |
| Explain how othering can negatively affect certain racial/ethnic groups with respect to contagious diseases like COVID-19 | 2.19 | 3.92 | +1.73 | <0.0001 |
| Describe the historical and neurocognitive basis for othering | 2.85 | 4.19 | +1.33 | <0.0001 |
| Delineate skills that can be employed to lessen the impact of othering in interpersonal interactions | 2.35 | 3.91 | +1.56 | <0.0001 |
| **Session 3, *N*=145 (37% matched response rate)** | | | | |
| Employ skills-based frameworks to self-reflect, dismantle oppression, and sustain belonging within the culture of medicine | 3.20 | 4.12 | +0.92 | <0.0001 |
| Identify key lessons learned from the COVID-19 pandemic that can help inform interventions to achieve greater health equity | 2.33 | 3.94 | +1.61 | <0.0001 |
| Hypothesize potential solutions to reshape health care and health policy systems going forward | 2.99 | 4.10 | +1.11 | <0.0001 |

confidence in achieving the stated learning objectives. Moreover, they were highly satisfied with using a virtual format for student-led small group dialogue.

Our focus on structural racism's effect on health is timely. Since the start of the COVID-19 pandemic, there have been renewed calls to action to address racism as a powerful SDOH,[17] as well as a number of publications on teaching medical students about racism.[11,18,19] Additional inquiry into how to provide in-depth pedagogy on COVID-19 racial health disparities that is responsive to current events is needed, and our educational intervention helps to fill this gap.

At a time when students were asked to step aside and clinician educator faculty worked on the front lines, this JIT educational intervention also focused on teaching skills that would impact clinical care when students returned to transformed clinical and educational spaces. Our approach emphasized that clinical epidemiology and pathophysiology must be framed within the context of structural racism when racial disparities are evident, and that incorporating actionable tools is essential to improving the impact of health equity interventions. Furthermore, the necessitated virtual format facilitated timely implementation despite the constraints of the pandemic response and mitigation efforts.

Like many novel educational initiatives, our findings are limited to short-term outcomes. Variable engagement in the voluntary pre- and post-surveys due to a combination of technical difficulties and asynchronous nature may also have led to a skew in results. Additional longitudinal follow-up will be necessary to evaluate for sustained change in knowledge and behavior. Further thematic analysis using qualitative methods to explore common learning themes from the quiz and worksheet responses may be valuable for gaining a deeper understanding of student learning on this topic. Furthermore, as any learning can be undone if not role modeled,[20] future works must incorporate similar topics for trainees and faculty.

As we enter a phase where COVID-19 has become a part of a new reality, rebuilding health systems, health policies, and medical education through the lens of dismantling structural racism has become an essential responsibility of academic medical centers. The described sessions helped guide students through self-reflection, systems reflection, and future orientation to meet this goal. Through JIT efforts like these that use current events to address evolving HE issues as they unfold, it is our hope that medical education can advance its agility and responsiveness to an ever-changing healthcare landscape that strives for health justice.

***Supplementary Information*** *The online version contains supplementary material available at https://doi.org/10.1007/s11606-022-07516-2.*

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***Declarations:***

***Conflict of Interest:*** *The authors declare that they do not have a conflict of interest.*

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