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Connecting With Others: Diversity Training Shapes Egalitarian Orientations

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ABSTRACT

Despite considerable resources invested in diversity training, there has been a paucity of studies that examine the enduring impact of diversity training. The current study was conducted in a workplace setting and is a quasi-experimental empirical evaluation of a widely used diversity training program that includes a daylong workshop and 8 weeks of structured interracial interactions. We examined the effects of this program on diversity-relevant outcomes—motivational, ideological, and attitudinal—over 2 months later. Although the program features content and assigns activities intended to reduce social biases in general, this examination focuses on biases toward Black Americans. In a pre-test/post-test analysis of employees who participated in training, we found that participants reported a significantly lower social dominance orientation (SDO) and significantly more motivation to be nonprejudiced 2 months after the training compared to before. Converging results were observed such that employees who participated in the training program exhibited significantly lower SDO and exhibited marginally higher internal motivation to respond without prejudice compared to employees in a control group who did not participate. No differences were observed for explicit attitudes, implicit bias, or right-wing authoritarianism (RWA). The current study thus documents that diversity interventions administered in “real-world” contexts can have a relatively long-term impact on egalitarian orientations. The research also highlights the need for further investigation of how specific elements of the program (e.g., the training itself, the nature, and duration of interracial contact exercises), and the way they are implemented, may or may not affect different outcomes.

1 | Introduction

Significant racial and ethnic disparities exist in the United States, not only in health but also in the quality of healthcare that members of various racial and ethnic groups receive (see Penner et al. 2023). Among the largest in magnitude and most persistent are those between Black and White Americans. Compared to

White Americans, Black Americans face higher mortality rates from heart disease and cancer and (along with Latine Americans) are more likely to have unmet needs for medical care and prescription drugs due to cost (National Center for Health Statistics 2023). Much of the work on racial and ethnic disparities in healthcare has focused on the impact of individual medical providers' implicit and explicit biases on medical interactions

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with patients and treatment decisions (e.g., Hagiwara et al. 2020; Hoffman et al. 2016). However, besides biases among medical providers who have direct contact with patients, the biases of administrators in healthcare institutions may also contribute to racial health and healthcare disparities. The responsibilities of healthcare administrators (e.g., in deciding the prioritization for care and creating policies involving the allocation of resources) also shape the access to care and quality of care that Black and other minoritized patients receive (Churchwell et al. 2020; Desai et al. 2023; Penner et al. 2023; Zambrana and Williams 2022).

Over the past two decades, in general, and specifically within the context of healthcare, organizations have commonly offered diversity training to address the bias of their employees. Although the nature and content of that training varies widely, these diversity programs share similar goals: to “facilitate[e] positive intergroup interactions, reduc[e] prejudice and discrimination, and enhance[e] the skills, knowledge, and motivation of participants to interact with diverse others” (Bezrukova et al. 2016, 1228). Diversity trainings enjoy widespread popularity and substantial organizational investment (Dobbin and Kalev 2016, 2022). They are generally conceived and marketed as a tool to change the bias of individuals (Onyeador et al. 2024), although the experimental evidence for an enduring positive impact of diversity training on attitudes, managerial diversity, and other outcomes is limited (Dobbin and Kalev 2016, 2022; Forscher et al. 2017, Forscher et al. 2019; Lai et al. 2016; Onyeador et al. 2020).

Given the limited evidence of a long-term positive effect of diversity training, researchers and practitioners have pursued various approaches to improve the effectiveness of diversity training and to better address the complex dynamics of bias. In particular, scholars have called for more solid grounding in relevant psychological research and theory, the development of multifaceted interventions to address the varied processes needed to combat biases, and systematic evaluations of the potentially different impacts of diversity training on the diverse processes relevant to increasing diversity, equity, and/or inclusion (e.g., Devine et al. 2012; Devine and Ash 2022; Paluck et al. 2021). The clinical and translational science (CTS) framework (and the translational research framework [TRF] for application to racial justice intervention research; see Hagiwara and Mende-Siedlecki, this volume) provides a valuable tool to guide and assess research on and implementation of organizational diversity trainings. The goal of these frameworks is to enhance the translation of basic science findings into practical, generalizable interventions that work in the population at large. The uneven evidence base for diversity training may result from a breakdown in later stages of the CTS framework. The transition between T0 (basic research) and T1 (translation to humans) stages has an extensive history in social psychology, which we discuss in the next section. However, the T2 (translation to stakeholders) and T3 (translation to practice) stages have received less rigorous investigation.

The present article represents an effort to bridge basic research and practical application by testing the effectiveness of an intervention on the egalitarian orientations of administrative leaders and staff in their workplace (a large hospital system in the northeastern United States). Hospital administrators are an understudied but potentially very important group with respect to racial health and healthcare disparities. This research results

from a collaboration between a diversity training provider, who delivered the training, an administrator of a large hospital system in the Northeast, who communicated to employees and provided space for the training, and a team of researchers who provided laboratory space, conducted the study, and analyzed the results.

The diversity training program we examined integrated didactic and experiential elements and applied psychological principles identified in basic research as important for promoting positive intergroup relations (e.g., increasing awareness of injustice, providing opportunities for interactions with members of other groups). We evaluate the impact of this training on various facets of intergroup orientations that have been found to be pivotal in the process of change (see Fisher et al. 2014). We explore the influence of this diversity training on outcomes beyond attitudes, including motivation to be unbiased and endorsement of social hierarchies. We discuss the policy implications and reflect on our experience conducting translational research, especially given the challenges resulting from the COVID-19 pandemic.

1.1 | Grounding in the CTS Framework

Diversity trainings vary widely, and as such, the basic research (T0) that informs diversity trainings are myriad and also vary widely. However, the basic idea, based on extensive literatures in social psychology, is that cognitions (including social categorization [Kawakami et al. 2017] and stereotypes [Hilton and von Hippel 1996]) produce prejudice (including biased explicit and implicit attitudes; Dovidio and Gaertner 2010) and intergroup emotions (Mackie et al. 2015), and these both produce intergroup behaviors (including intergroup bias and discrimination; Dovidio and Gaertner 2010; Yzerbyt and Demoulin 2010). Studies have shown that these phenomena can be changed by exposure and knowledge (Mallett et al. 2008; Stephan and Stephan 2001, cf. Smith et al. 2008) and intergroup contact (Paolini et al. 2021), indicating success in translation to humans (T1). However, the Information-Motivation-Behavioral Skills (IMB) model (Fisher and Fisher 2023; Fisher et al. 2014) highlights that awareness raising and increasing knowledge is not enough to produce behavioral change. In addition, interventions need to increase motivation (for instance, the motivation to respond without prejudice [Plant and Devine 1998]) or perhaps reduce the motivation to express prejudice (Forscher et al. 2015) and to provide skills for navigating intergroup interactions (see Devine et al. 2012 for an example of an evidence-based diversity training that does both).

Although laboratory-based research, often using college students, demonstrates the potential value of applying social psychological principles to reduce racial and ethnic bias, in naturalistic contexts, the promise has yet to be realized. The CTS Framework offers valuable guidance for translating research and theory into effective application. From the perspective of the framework, the next critical stage would be validating the research on what changes bias in real-world settings. However, this is where the breakdown in abiding by the CTS framework emerges. Despite extensive research attention, most studies of diversity training in organizational settings are non-experimental, and almost two-thirds focus their outcomes on participants' cognitive and affective responses to the diversity training itself (Devine and Ash 2022) rather than on outcomes more directly related to the context

(e.g., hiring, compensation, promotion, and retention disparities, interracial interactions with coworkers), as would be called for in CTS or TRF.

Paluck and colleagues (2021), writing in the *Annual Review of Psychology*, commented on the surprising paucity of experimental studies of bias reduction that have been conducted in field settings, or have examined the persistence of prejudice reduction over time, or both. They counted, for example, “just six experimental studies reported in six manuscripts during the last decade” (Paluck and colleagues 2021, 543) of the effects of interventions described as diversity training, including sensitivity or cultural competence training. Only two were conducted in a workplace setting (Chang et al. 2019; Smith and Silk 2011). These studies represent the extent of the extant T2 research on workplace diversity trainings, a shocking reality based on claims made by providers who offer diversity trainings (Onyeador et al. 2024). The next year, Devine and Ash (2022, 409), again in the *Annual Review of Psychology*, similarly concluded that research on the effectiveness of diversity training in organizational settings has been “for the most part wanting.” This is in part because conducting T2 research is costly in terms of time, financial resources, and organizational buy-in, as we will further discuss in our reflection.

Within the CTS framework, the current research is primarily situated in T2. We test the effectiveness of an intervention based on basic research, with participants who are key stakeholders—in this case, administrative leaders and staff in a healthcare system—but who are an understudied group with respect to bias management. As key organizational stakeholders, they are an important group to address because their bias is filtered into the organizational structure. Our investigation is also situated in T3, as our study occurs in the workplace and was a collaboration between researchers, organizational leadership, and the diversity training provider.

1.2 | The *Connecting With Others* Training Program

The current study is a quasi-experimental empirical evaluation of the effects of one instantiation of diversity training: the *Connecting with Others* program (www.rdrgroup.com) on diversity-relevant outcomes in a workplace setting over 2 months later. The design and implementation of the *Connecting with Others* diversity training program are based on insights stemming from the research literature. Diversity trainings are more effective at reducing biases when integrated as part of a broader, multifaceted diversity and inclusion strategy than when implemented alone (e.g., Bezrukova et al. 2016). As a result, extended interventions are likely to be more effective than “one shot” trainings. Based on this insight, the *Connecting with Others* diversity training program was not just a singular training but was embedded in the partner organization’s broader diversity efforts and instructed participants to engage in weekly interracial interactions for 8 weeks after the initial daylong workshop.

There is no standard curriculum for diversity training, but research on interventions that produce personal change identifies key processes and contingencies for strategic implementation.

For instance, the IMB model (Fisher et al. 2014) was developed for promoting health-enhancing behaviors but has been applied more broadly (e.g., Ehret et al. 2021). The IMB model emphasizes that providing information about the benefits of change alone is not sufficient to produce enduring change. Beyond knowledge, people need the motivation pursue change and opportunities to apply the knowledge and skills they have acquired to engage in the appropriate behaviors. The goals and activities in the *Connecting with Others* training program align with these principles of the IMB model and suggest that the two main components of the program will operate synergistically.

The first component, the full-day (7-h) workshop, conveys relevant information about diversity and inclusion, and assigns follow-up interracial interactions to facilitate learning and self-reflection. This information is designed to enhance participants’ understanding of the causes and consequences of social biases. The daylong workshop discusses the psychological mechanisms underlying bias (e.g., stereotyping, implicit and explicit social cognition), systemic influences (e.g., institutional and cultural biases, and cultural ideologies that foster bias), and how awareness of personal susceptibility to unintended bias can stimulate efforts and motivation to successfully overcome bias. Although different social biases (e.g., racism, sexism, classism, heterosexism) are distinct in terms of key aspects of the stigma (Dovidio et al. 2000), the personal, social, and cultural factors that contribute to their development (Stephan and Stephan 2017), and historical and economic influences (Jones et al. 2014), different social biases also share many common underlying processes (e.g., stereotyping, intergroup affect; Kawakami et al. 2017). Based on these common underlying processes, the *Connecting with Others* diversity workshop highlights multiple forms of bias, as do many other forms of diversity training (e.g., Devine et al. 2012).

Although reviews of anti-bias interventions indicate that other diversity trainings also include this didactic material (Bezrukova et al. 2016; Devine and Ash 2022), a unique and integral component of the *Connecting with Others* program is the second component of the program, a systematic behavioral regimen called Inclusive Practice. Participants, supported by resources in the program’s *Inclusive Practice Guides*, are instructed to engage in weekly interactions with a colleague of another race for 8 weeks after the workshop. These exercises are designed to combat “disconnection” and encourage “connection,” which the program defines as positive bonds at work. For instance, for the “Advocacy” assignment, participants learn about “pejorative behavior,” defined as “showing or tolerating overt disrespect,” and which leads to disconnection. Instead, they are encouraged to engage in the inclusive, connecting behavior of “advocacy,” where they proactively address inappropriate behavior. During that week’s interaction, they are tasked with discussing the issues that matter to their interracial interaction partner and how they can support them. Several suggestions are included.

In their review of best practices in diversity training, King et al. (2010, 894) highlighted the importance of this type of activity, explaining that “the explicit focus on competency development may allow learners to achieve behavioral goals to a greater extent than focus on awareness or knowledge alone.” These guided interactions are included because, as Devine and colleagues (Devine et al. 2012, 1268) noted, “change is likely only after

the application of considerable goal-directed effort over time,” and because enduring change requires substantial investment of “time, effort, and/or intensity of experience.”

Although many diversity programs include exercises within their workshop activities, having extended intergroup contact beyond the initial workshop is particularly important for bias reduction: Bias-related motivations, ideologies, and attitudes are driven by affective responses (e.g., anxiousness, anger, contempt) as well as cognitions (e.g., beliefs), and frequent first-hand intergroup experiences are most effective both for reducing aversive emotions aroused by members of another social group and acquiring the skills for interacting productively with members of another social group (Allport 1954; Dovidio et al. 2017; Pettigrew and Tropp 2011). Greater intergroup contact over the course of several months and years can also reduce explicit prejudice and holds promise for reducing implicit bias (Mousa 2020; Onyeador et al. 2020). Moreover, recent research by Ragins and Ehrhardt (2021) found that the impact of diversity training on the development of skills for improving intergroup relations was stronger for individuals with cross-group friendships, suggesting that the combination of diversity training and intergroup contact may be particularly effective for improving intergroup orientations. Further, relative to interactions with a new same-race friend, multiple interactions with a new cross-race friend reduce cortisol reactivity, a physiological measure of anxiety, particularly for people who were particularly likely to experience intergroup anxiety (Page-Gould et al. 2008). Despite extensive theoretical and practical evidence that interracial contact can improve attitudes and other intergroup orientations, extended behavioral components like the Inclusive Practice interactions included in the *Connecting with Others* training program remain rare.

1.3 | Evaluating the *Connecting With Others* Diversity Training Program

The evaluation plan was developed in collaboration between the diversity training provider, hospital administrator, and research team. The broader group met several times to identify goals for the project. Several factors were discussed, including the best experimental design to yield compelling causal evidence, the sample size needed to adequately power our statistical analyses, the size of available sample, and compensation for employee participation. The logistical aspects of the study were particularly important to manage. Although hospital employees participated in the workshop and Inclusive Practice exercises at the hospital during work hours, it was not possible to conduct the experimental interactions at the hospital given the needed technological equipment. Thus, that aspect of the study was conducted in a faculty member's lab space, located some distance from the hospital. In our original design, employees would need to commute to the lab twice to participate in the pre- and post-training assessments. The hospital administrator allowed the interactions to occur during work time to reduce attrition.

Although the *Connecting with Others* program discusses biases in general, the emphasis in our analysis was the impact of the intervention on participants' responses to a particular group, Black Americans. We focused on responses toward Black Amer-

icans for practical, conceptual, and methodological reasons. Practically, biases against Black Americans represent one of the longest, most virulent, and most significant challenges—socially and politically—in the United States across the history of the nation (Jones et al. 2014; Penner et al. 2023). Conceptually, much of the research on reducing intergroup bias, while applicable to other groups, has been designed and tested in the context of reducing biases against Black Americans. Methodologically, therefore, our measures focused on anti-Black bias. Our sample of participants included Black and non-Black (i.e., Asian, Latine, and White) participants, and we examined the responses of both groups, with a focus on the responses of non-Black participants.

Evidence of prejudice reduction toward traditionally underrepresented groups is one of the most common measures of the effectiveness of anti-bias training (Paluck et al. 2021). As such, we measured social biases (e.g., explicit prejudice and implicit biases). Beyond attitude change, researchers of behavior change generally (Fisher et al. 2014) and bias reduction more specifically (Schmader et al. 2022) emphasize the importance of examining ideological orientations and motivational factors. Thus, we investigated the impact of the diversity training on intergroup ideologies and personal motivation for change. Social biases are sustained and reinforced by common ideologies that become internalized by individuals (Foels and Pratto 2015; Sidanius and Pratto 1998, 2004), so undermining personal endorsement of ideologies that promote or sustain social inequity can be a valuable outcome of diversity training.

1.3.1 | *Connecting With Others* May Produce Inclusive Intergroup Ideologies

Diversity training, particularly programs that increase positive intergroup contact, as this intervention does, may produce more inclusive ideological orientations. Because systemic change requires action to shift the status quo, we examined the impact of diversity training on two prominent individual-difference measures of intergroup ideology, social dominance orientation (SDO; Ho et al. 2015; Sidanius et al. 2017; Sidanius and Pratto 1999) and right-wing authoritarianism (RWA; Altemeyer 1996, 1998; Duckitt and Sibley 2017).

People high in SDO more strongly believe that group hierarchies are inevitable and desirable, and that groups are in zero-sum competition for resources; they are thus less supportive of egalitarian treatment of members of other groups (Ho et al. 2015; Klepepe et al. 2019; Sidanius et al. 2017). White Americans tend to exhibit higher SDO than Black Americans (Ho et al. 2015), but not consistently so (Levin 2004). Although SDO is often considered a stable individual difference, people's orientations toward group hierarchy can change. For example, Meleady et al. (2020) found that more positive intergroup contact predicted lower levels of SDO over 3 months later (see also Dhont et al. 2014).

RWA reflects a preference for social stability and order, as well as a tendency to be submissive to authority figures, to act aggressively in support of these authorities, and to conform to traditional values in thought and behavior (Duckitt and Sibley

2017). White Americans tend to express higher RWA than Black Americans (Rowatt et al. 2009). These two ideologies have different origins, emphases, and dynamics (Duckitt and Sibley 2017). Although there is evidence that experiences, such as contact, can change SDO, we are not aware of similar effects on RWA. However, we consider that possibility in the present research.

Hypothesis 1. *Participants who complete training will demonstrate more inclusive ideologies (operationalized as exhibiting lower levels of (a) SDO and (b) RWA), both compared to before they completed training, and compared to participants who did not complete training.*

1.3.2 | Connecting With Others May Increase Motivation to be Unbiased

If diversity training that includes intergroup contact can increase inclusive ideologies, it may also increase motivations to behave in more egalitarian ways, which “is critical to the control of biased outcomes” (Schmader et al. 2022, 1385) and can stimulate individuals to engage in self-regulation to develop new habits of mind and action, as suggested in the IMB model. In their meta-analytic review Bezrukova and colleagues (2016) found that diversity training increased participants’ knowledge of concepts (e.g., implicit bias) and topics (e.g., cultural diversity issues) that enhanced participants’ understanding of diversity and the challenges and benefits of diverse environments. This effect was not only durable but tended to increase over time. Greater awareness of unfair disadvantage is linked to stronger motivation to address injustice (Perry et al. 2015; Tropp and Barlow 2018). People higher in the Internal Motivation to Respond Without Prejudice (IMS; Plant and Devine 1998) have a stronger personal commitment to be unbiased, are more egalitarian toward outgroups, and are more likely to pursue further prejudice reduction opportunities (LaCosse and Plant 2020; Plant and Devine 2009).

Hypothesis 2. *Participants who complete training will demonstrate more motivation to behave in a nonprejudiced manner, both compared to before they completed training and compared to participants who did not complete training.*

1.3.3 | Connecting With Others May Reduce Explicit Prejudice and Implicit Bias

Diversity trainings are often portrayed as influencing intergroup attitudes; however, the empirical basis for this claim is limited (Onyeador et al. 2024). Although there is some evidence that diversity training can achieve a long-term reduction in explicit negative attitudes toward a group (i.e., prejudice) generally (Bezrukova et al. 2016), reducing implicit bias may be more challenging (Greenwald, Dasgupta, et al. 2022; Lai et al. 2014, 2016). Explicit prejudice encompasses views people hold and are willing to express; it is typically assessed using self-report measures. In the current research, we measured explicit attitudes using feeling thermometers, a widely used technique for assessing intergroup attitudes (Alwin 1997).

Hypothesis 3. *Participants who complete training will report less explicit prejudice, both compared to before they completed training and to participants who did not complete training.*

In contrast to explicit bias, implicit bias represents associations with a group (typically in relation to another group; e.g., Black people compared to White people) that may be activated without intention or awareness. We assessed implicit bias with the widely used Implicit Association Test (Greenwald, Brendl et al. 2022). Implicit biases tend to be relatively less controllable, less conscious, and retrieved more quickly and efficiently from memory than are explicit biases. Because implicit social biases are hypothesized to represent overlearned associations acquired early in life that are reinforced socially through a range of societal influences, they are especially resistant to change (Greenwald, Dasgupta et al. 2022), including from efforts such as diversity training. Given this, we did not hypothesize about implicit bias.

2 | Method

2.1 | Transparency and Openness

This study, as initially conceived, was intended to be more ambitious. However, the COVID-19 pandemic disrupted training demonstrations and in-person data collection. Thus, we adjusted our study design and analysis plan. The data, syntax, and research materials are available at OSF. The study design and analyses were not preregistered. Below, we report the initial plans and changes that were made. Data were analyzed using SPSS v27.

2.1.1 | Original Study Design

The original study design was a two-way mixed design with one between-subjects factor and one within-subjects factor. The between-subjects factor was the training conditions (training vs. no training). The within-subjects condition was the time-point (pre-training vs. post-training). Participants in the training condition would participate in a daylong training and engage in 2 months of inclusive practice interactions with a colleague of a different race. All participants would complete survey questionnaires and engage in two sets of videorecorded mentoring conversations before and several weeks after the training with Black and White undergraduates, during which the physiological responses of both participants in the conversation would be measured. This design would allow us to (1) establish a baseline, (2) compare the survey results, videorecorded interactions, and physiological responses of hospital employees after they had completed the training to before they had completed the training, and (3) compare the survey results, videorecorded interactions, and physiological responses of hospital employees who had completed the training to those who had not.

2.1.2 | Revised Study Design

As we initiated the project, we focused data collection on participants in the Training condition, given the logistical issues identified earlier. Unfortunately, the onset of the COVID-19 pandemic limited the number of individuals in the Training condition

and prevented the in-person experimental activities planned for the study. Instead, all post-test measures were collected online. We sent a survey to all employees who had initially been invited, employees who participated in the training, and employees who had not participated in the training. Employees who participated in the training were still asked to engage in the Inclusive Practice interracial interactions, and 93% of participants in the Training condition reported that they did. Two participants did not report their engagement.

Thus, because of COVID-related constraints, the fully crossed Training x Pre-Post design could not be successfully executed. It was replaced with an unbalanced design, such that we assessed participants in the Training condition before Training began (pre-test) and after Training was completed (post-test). We assessed participants in the No Training condition once, at the same time as the Training condition post-test assessment. The personnel who designed, collected, and analyzed the data were separate from those who conducted the diversity training.

2.2 | Participants

Participants were recruited from May 2019 through April 2021 from a large healthcare system in the northeastern United States. To ensure participant confidentiality, the dates on which people participated were not recorded, which precluded subsequent analyses related to various national and global events. Participants were to be compensated \$75 for completing all aspects of the study. Originally, based on a priori power analyses, the target sample was 75 participants in each of the two conditions (Training vs. No Training), with participants in each condition completing pre-test and post-test measures. We planned to collect data from 200 total participants to account for attrition. However, the COVID-19 pandemic limited study activities and participant recruitment. The last training was conducted in December 2019, and we were no longer able to conduct the in-person interactions. We emailed the initial group of employees who had been invited for the in-person interaction and training sessions, including employees who had and had not participated in the interaction or training sessions, and invited them all to complete a final survey. Participants were compensated \$25 for this final online survey.

The final sample consisted of 77 participants: 48 who identified as women and 29 who identified as men; 45 who identified as White, 19 who identified as Black, 6 who identified as Latine, 3 who identified as Asian, and 4 who identified as mixed-race or other ($M_{\text{age}} = 44.3$, $SD_{\text{age}} = 11.1$, range [22–63]). Although information about demographic composition for the healthcare organization that sponsored the training sessions is unavailable, compared to the demographics of the metropolitan area where the research was conducted, the sample of participants in this study had the same percentage of White people (58% in the sample, and 58% in the area) and a similar percentage of Asian people (4% vs. 5%), but a higher percentage of Black people (25% vs. 15%) and a lower percentage of Latine people (8% vs. 20%). Among participants who reported their education, 77.7% had a bachelor's or a more advanced degree, 61.3% reported an income of \$100,000 or greater, 53.3% described their political orientation as liberal, 17.7% as conservative, and 28.8% as independent. We recruited 30 participants out of 36 workshop attendees (83%) in the training

condition and 47 participants in the no training control condition. Trainings were held on June 7, 2019 (11 attendees), December 2, 2019 (17 attendees), or December 4, 2019 (8 attendees).

Post-hoc sensitivity analysis for a 0.05 level of significance and power = 0.80 indicated that this design, as executed, would require moderate effect sizes to detect differences between the Training and No Training conditions ($d = 0.66$) and pre-test/post-test changes among participants who completed training ($d = 0.53$). The overall mean effect size in a recent meta-analysis of diversity training (Bezrukova et al. 2016) was smaller (Hedges' $g = 0.38$), suggesting that we were only powered to detect larger effects given our sample size. Hedges' g is comparable to Cohen's d but corrects for biases due to sample size (Lench et al. 2011; Uttal et al. 2013).

2.3 | Procedure

2.3.1 | Training Condition

A group of employees was contacted with an electronic flyer seeking assistance with a project designed to reach “performance potential through inclusion” by developing mentoring skills. Employees were also informed of the opportunity to participate in day-long workshops aimed at developing skills that could facilitate interactions with “a wider scope of individuals” and thereby improve patient satisfaction. Employees who responded to this flyer or to follow-up recruitment efforts were assigned to a training and then scheduled for the in-person session, where they completed the pre-test measures and brief career mentoring conversations with one Black and one White undergraduate student who were ostensibly interested in a career in healthcare. As mentioned above, the initial intention was that all participants would engage in one set of conversations with one Black and one White undergraduate student before the training to establish a baseline, and all participants would engage in a second set of conversations with a different Black and White undergraduate student after the training, for a total of four mentoring conversations. Participants and undergraduate confederates wore belts during the interaction that measured their physiological responses. We were interested in exploring the impact of the training on verbal, nonverbal, and physiological responses during interactions with Black and White undergraduates. We were not able to recruit enough participants for this aspect of the study, so these measures are not discussed further.

2.3.2 | Diversity Training Program

As noted earlier, the diversity training program, *Connecting with Others*, has two main components. The first is a full-day (7-h) workshop about diversity and inclusion. Integrated into the workshop are a series of immediate activities that illustrate key concepts and promote self-reflection and assessment. The main objectives of the workshop are to (a) distinguish between diversity and inclusion; (b) highlight the benefit of connecting with a wider scope of people; (c) identify behaviors that hinder inclusion; (d) learn “counter-behaviors,” which promote inclusion rather than bias; (e) acquire the skills to repair a disconnect; and (f) commit to action steps for stronger connections (for a more

detailed description of the content, see Supporting Materials). The training content was designed to highlight behaviors—such as interacting mainly with members of one’s own group or expecting others to conform to one set of cultural norms—that may not be consciously motivated but that negatively impact inclusion. The training also involved learning corresponding competencies that improve connection when practiced intentionally. It was tailored for the healthcare context in that the training provider referred to patients, hospital departments, and hospital-relevant metrics, and attendees’ discussions focused on interactions in the hospital.

An additional, more experiential component of this program involved a series of interactions with a person of another race. The area in which the healthcare organization was racially and ethnically diverse, with 58% of the population identifying as White (the same percentage as in our sample), 13% as Black, 20% as Latine, and 5% as Asian. White and Asian people were proportionately represented in our sample, Black people were overrepresented, and Latine people were underrepresented. As such, there was adequate racial diversity for the interracial interactions. After the daylong workshop, participants were asked to select a partner of another race within their organization for regular conversations. These weekly interactions were expected to last a minimum of 30 min for 8 weeks. In these interactions, workshop attendees were instructed to apply and practice tools presented in the workshop and elaborated on in the *Inclusive Practice Guides* to facilitate rapport, empathy, mirroring, trust, and affirmation.

To support the cover story about the focus of the research being about on mentoring skills and provide data on an initial interracial interaction, prior to the diversity workshop, all participants in the Training condition had brief, in-person interactions with a Black and a White undergraduate student (in an order counterbalanced across participants), in which they discussed careers in healthcare. These interactions were video-recorded and physiological measurements were taken. These video-recorded interactions were originally intended to provide baseline data to assess change in interracial behaviors compared to another set of interactions that would be scheduled after participants completed all the diversity training program activities. As discussed earlier, we had to halt in-person activities and were unable to schedule the intended second set of interactions because of the COVID pandemic.

2.3.3 | No Training Condition

The No Training condition consisted of participants who received the initial invitation email, had not completed any pre-training surveys or training, but who completed the post-training survey when invited.

2.3.4 | Measures

The surveys included additional measures (the full Qualtrics survey is posted on OSF); however, the primary outcome assessments were SDO and RWA and, specifically with reference to Black

Americans, Internal Motivation to Respond without Prejudice (IMS), explicit attitude, and implicit bias. Participants completed each survey using Qualtrics on a computer in the laboratory. In the Training condition, participants completed these measures before and after the training. In the No-Training condition, participants completed these measures only once, at the same post-training time point as those who had completed the training.

SDO was assessed using an 8-item measure ($\alpha = 0.71$; Ho et al. 2015). Participants indicated their agreement on a scale from 1 = *strongly oppose* to 7 = *strongly favor*. Examples include: “An ideal society requires some groups to be on top and others to be on the bottom,” and “We should do what we can to equalize conditions for different groups” (reverse-coded). Higher scores represent greater support for group-based hierarchy in society.

RWA was assessed with a 15-item measure, adapted from Altemeyer (1996). Respondents indicated their agreement on a scale from 1 = *strongly disagree* to 7 = *strongly agree* ($\alpha = 0.78$). Sample items are: “Our country needs a powerful leader, in order to destroy the radical and immoral currents prevailing in society today,” and “Many good people challenge the state, criticize the church and ignore ‘the normal way of living’” (reverse-coded). Higher scores indicate greater endorsement of right-wing authoritarian ideology.

Internal Motivation to Respond without Prejudice toward Black people (IMS)) was measured using a 5-item measure for which participants indicate their agreement with each statement on a scale from 1 = *strongly disagree* and 9 = *strongly agree* ($\alpha = 0.79$; Plant and Devine 1998, 2009). Sample items are “I attempt to act in nonprejudiced ways toward Black people because it is personally important to me,” and “Being nonprejudiced toward Black people is important to my self-concept.”

Participants’ explicit attitudes toward Black people were assessed with a feeling thermometer (Alwin 1997; Lolliot et al. 2015). To obscure the main focus of the present research on attitudes toward Black people, participants were presented with the feeling thermometer for Black people amidst various other groups in a random order and were asked to indicate a number ranging from 0 to 100 to represent their feelings about the group. Specifically, they were informed, “The higher the number, the warmer or more favorable you feel toward that group, the lower the number, the colder or less favorable you feel.” Non-Black respondents in the United States have traditionally had less favorable explicit attitudes toward Black people than do Black respondents (e.g., Bobo and Zubrinsky 1996).

Implicit racial bias was assessed with the Race IAT (Greenwald, Brendl et al. 2022), the most widely used measure of implicit racial bias, using IATgen (<https://iatgen.wordpress.com>). The IAT draws on an extensive literature demonstrating that faster response times reflect stronger mental associations. For instance, research using the Race IAT has shown that people who associate negativity with Black people are quicker to respond when images of Black people and unpleasant words share a response key than when images of Black people and pleasant words share a response key. In the present study, stimuli were faces of Black and White individuals and words that were positive (joyous, friendship, pleasing, fabulous, beautiful, smiling, laughing, magnificent) or

TABLE 1 | Assessing the adequacy of the control group.

	Pre-test training condition vs. no training condition (post-test)			
	Meantesting (pre-test)	Meanno training (post-test)	<i>t(df)</i>	<i>p</i>
Social dominance orientation	1.95	1.90	−0.098 (59)	0.92
Right-wing authoritarianism	3.05	3.25	1.01 (55)	0.32
Internal motivation	8.39	8.24	−0.37(63)	0.71
Black feeling thermometer	86.60	88.89	0.88(6)	0.38
Race IAT	0.082	0.284	1.61(67)	0.11

negative (hurtful, hate, disgust, evil, hatred, poison, ugly, failure). IAT scoring produces a d-score, with higher, positive scores reflecting greater racial bias favoring White people over Black people.

3 | Results

3.1 | Preliminary Analyses

We first conducted correlations of our main outcome variables. On the post-test measures, which were administered to participants in both the Training and No-Training conditions, participants higher in SDO were also higher in RWA, $r(48) = 0.40$, $p = 0.004$, and tended to report less IMS, $r(51) = -0.25$, $p = 0.073$, though this relationship was marginally significant. Participants who reported more IMS tended to have more positive attitudes toward Black Americans, $r(51) = 0.26$, $p = 0.062$, though this relationship was marginally significant. Greater implicit bias was not related to explicit attitudes toward Black Americans, $r(58) = -0.07$, $p = 0.58$ (see Supporting Materials for correlations amongst post-test measures). Implicit bias was marginally related to explicit attitudes toward White Americans $r(58) = 0.23$, $p = 0.08$. Because participants were not required to answer all items, variations in degrees of freedom reflect missing data.

To examine whether participants in the No Training conditions can be considered an adequate control sample, we compared the responses of participants in the Training condition on the pre-test survey (i.e., before they completed training) to the scores of participants in the No Training condition on the post-test survey, that is, the first time No Training participants completed the assessment. Consistent with the anticipated equivalence of the No Training and Training groups, there were no differences on the primary outcomes (all $ps > 0.10$, see Table 1).

3.2 | Analytical Strategy

Although they are generally related, SDO, RWA, IMS, explicit attitudes, and implicit bias are conceptually distinct outcomes and differ in their responsiveness to bias-reduction interventions. Thus, we analyzed the effects of training on each separately. Preliminary analyses showed no systematic effects associated with participant gender; thus, participant gender was not included in the analyses. We first conducted ANOVAs and assessed the main effect of training group, participant race, and their interaction on SDO, RWA, IMS, explicit attitudes, and implicit bias. Participant race/ethnicity did not moderate

any of the effects of training. However, there were sometimes main effects of participant race. This racial group distinction is particularly relevant, theoretically and empirically, for motivations, explicit attitudes, and implicit biases associated with Black Americans. When there was a significant main effect of participant race/ethnicity, we report the effect of the Training Condition from a model that accounts for participant race, that is, the main effect of training condition, race, and their interaction. If there was no main effect of participant race/ethnicity, we report the effect of the Training Condition only, using a *t*-test, which is equivalent to a one-way ANOVA with two cells.

Because of the limited numbers of various racial and ethnic groups in the sample and the focus on Black Americans of the outcome measures, the main analyses compare Black and non-Black participants. We report alternative tests of racial/ethnic differences comparing White to BIPOC (Black, Indigenous, and other People of Color) participants in the [Supporting Materials](#). Table 2 reports the overall results for each outcome of the Training versus No Training comparison and pre-test versus post-test comparison for participants who received training.

As noted earlier, due to COVID-related constraints, we were unable to complete our originally-planned pre-test/post-test Treatment versus Control condition experimental design. Instead, we took a quasi-experimental approach where, for each measure, we performed two separate analyses. First, we examined whether, for participants in the Training condition, there was an egalitarian shift between pre-test and post-test (assessed at least 2 months before and 2 months after participating in the *Connecting with Others* program) on the post-test measures of SDO, RWA, Internal Motivation to Respond without Prejudice (IMS), explicit attitudes, and implicit bias (IAT). Second, we investigated whether participants in the Training condition would display more egalitarian responses on each of the outcomes of interest than participants in the No Training condition. Recall that Training participants' pre-test survey responses were statistically similar to those of No Training participants' survey responses, so significant effects in this analysis can be interpreted as due to the training.

3.3 | Main Analyses

3.3.1 | SDO

SDO did not differ by participant race in the posttest survey. Among participants who completed training, SDO significantly

TABLE 2 | Summary of key findings.

	Pre-test vs. post-test: training condition				No training vs. training: post-test measures			
	Means				Means			
	Pre-test	Post-test	<i>p</i>	η^2	No training	training	<i>p</i>	η^2
Social dominance orientation	1.95	1.42	<0.001	0.59	1.90	1.49	0.029	0.079
Right-wing authoritarianism ^a	3.05	3.02	0.72	0.006	3.25	3.00	0.13	0.042
Internal motivation	8.39	8.75	0.009	0.24	8.24	8.75	0.080	0.050
Black feeling thermometer ^{a,b}	86.60	85.74	0.72	0.006	88.89	86.52	0.36	0.015
Race IAT ^{a,c}	0.082	0.175	0.31	0.035	0.284	0.175	0.58	0.005

Note: Because some participants in the training condition did not complete all of the measures, the *N*s, and thus the means, for the post-test measures may differ slightly for the no training versus Training comparison and the Training group, pre-test versus post-test comparison. Bold values are statistically significant $p > .05$.

^aThere was a significant effect of participant race on this measure, so the statistics reported for training versus no training are from the models that include race in the model. The effects are nonsignificant in both analyses.

^bHigher scores represent warmer, more positive feelings. No significant effects were found for explicit attitudes toward White, Asian, or Latine Americans (see Supporting Materials).

^cHigher scores reflect greater implicit racial bias in terms of more favorable associations with White relative to Black people.

decreased from pre-test ($M = 1.95$, $SD = 0.59$) to post-test ($M = 1.42$, $SD = 0.47$), $F(1,20) = 28.23$, $p < 0.001$, $\eta^2 = 0.59$. Further, participants who completed training ($M = 1.49$, $SD = 0.49$) reported lower SDO than those who did not ($M = 1.90$, $SD = 0.83$), $F(1,58) = 5.00$, $p = 0.029$, $\eta^2 = 0.079$. Thus, hypothesis 1a was supported.

3.3.2 | RWA

Black participants ($M = 3.50$; $SD = 0.31$) exhibited higher RWA at the posttest than non-Black participants ($M = 3.05$; $SD = 0.83$), $F(1,55) = 4.76$, $p = 0.033$, $\eta^2 = 0.080$. Among participants who completed training, RWA did not significantly decrease from before ($M = 3.05$; $SD = 0.45$) to after training ($M = 3.01$; $SD = 0.51$), $F(1,22) = 0.14$, $p = 0.72$, $\eta^2 = 0.006$. At the post-test period, the RWA of those who completed training ($M = 3.00$; $SD = 0.58$) did not significantly differ from those who did not ($M = 3.25$; $SD = 0.90$), $F(1,55) = 2.42$, $p = 0.13$, $\eta^2 = 0.042$. Thus, hypothesis 1b was not supported.

3.3.3 | IMS

IMS did not differ by participant race at the posttest. Participants who completed training exhibited more internal motivation to respond without prejudice after completing the training ($M = 8.75$, $SD = 0.45$) compared to before ($M = 8.39$, $SD = 0.88$), $F(1,26) = 8.08$, $p = 0.009$, $\eta^2 = 0.24$. Participants who completed the training ($M = 8.75$, $SD = 0.44$) tended to display a higher internal motivation to respond without prejudice than did those who did not ($M = 8.24$, $SD = 1.43$), but this effect was only marginally statistically significant, $F(1,60) = 3.16$, $p = 0.080$, $\eta^2 = 0.050$. Thus, Hypothesis 2 was partially supported.

3.3.4 | Black Feeling Thermometer (Explicit Attitude)

Black participants ($M = 97.67$, $SD = 6.02$) had more favorable attitudes toward Black Americans than non-Black participants ($M = 85.46$, $SD = 16.78$), $F(1,56) = 6.41$, $p = 0.014$, $\eta^2 = 0.10$.

Among participants who completed training, attitudes did not significantly change from the pre-test ($M = 86.61$, $SD = 16.12$) to post-test ($M = 85.74$, $SD = 18.34$), $F(1,22) = 0.13$, $p = 0.72$, $\eta^2 = 0.006$. The attitudes of participants who completed training ($M = 86.52$, $SD = 17.81$) did not differ from those who did not ($M = 88.89$, $SD = 14.71$), $F(1,56) = 0.84$, $p = 0.363$, $\eta^2 = 0.015$. Thus, Hypothesis 3 was not supported.

3.3.5 | IAT (Implicit Race Bias)

Given the evidence questioning the malleability of implicit bias (Greenwald, Dasgupta et al. 2022), we did not offer predictions about implicit bias. There was a significant effect of participant race on post-test IAT scores, $F(1,65) = 4.04$, $p = 0.049$, $\eta^2 = 0.059$. Non-Black participants ($M = 0.291$, $SD = 0.47$) demonstrated a higher level of implicit bias than did Black participants ($M = 0.027$, $SD = 0.42$). Non-Black participants exhibited significantly higher implicit bias compared to the IAT neutral point of 0, $t(54) = 4.60$, $p < 0.001$, $d = 0.62$. In contrast, Black participants' implicit bias did not differ from 0, $t(14) = 0.24$, $p = 0.815$, $d = 0.064$. Among participants who completed training, there was no significant change in IAT scores from prior ($M = 0.08$; $SD = 0.56$) to after ($M = 0.18$; $SD = 0.44$) training, $F(1,29) = 1.05$, $p = 0.31$, $\eta^2 = 0.035$. The implicit bias of those who completed the training ($M = 0.18$, $SD = 0.44$) did not differ from those who did not ($M = 0.28$; $SD = 0.49$), $F(1,65) = 0.32$, $p = 0.58$, $\eta^2 = 0.005$.

4 | Discussion

The present research represents a collaboration among researchers, practitioners, and organizational leaders, who brought together relevant knowledge possessed by each group of professionals to test the impact of the *Connecting with Others* diversity training program (which involves an inclusive practice element of intergroup interactions) on a range of diversity-related outcomes in the context of a healthcare organization. Despite the disruption caused by COVID-19 during the period of data collection that prevented completion of the full

Training/No-Training by Pre-test/Post-test design that was originally planned, the research did successfully include Training versus No-Training post-test comparisons (based on assessments 2 months after participants completed all elements of the program) and a separate set of tests of change from pre-test to post-test for participants who completed training. Participants exhibited significantly less SDO and significantly more motivation to be unbiased (IMS). The effect was strong for SDO ($d = 1.16$) and moderate for IMS ($d = 0.55$). In the pre-post analyses, the nonsignificant effects were very small: RWA ($d = 0.08$), explicit attitudes ($d = 0.08$), and implicit bias ($d = 0.19$), indicating that a much larger sample was needed to detect change in those measures.

The results of the comparison between the participants who completed training and those who did not were similar. Participants who completed the training exhibited significantly lower SDO and tended to exhibit higher internal motivation to respond without prejudice (IMS) than those who did not. The training did not affect RWA, explicit racial attitudes, or implicit racial bias. The effects for SDO ($d = 0.59$) and IMS ($d = 0.46$) were moderate, and effects were smaller for RWA ($d = 0.33$), explicit attitude ($d = 0.15$), and implicit bias ($d = 0.23$). Thus, the combination of learning the unhealthy/healthy intergroup practices and engaging in structured interactions designed to create connection (completed by 94% of participants in the training condition) seems to have had a beneficial impact on the participants in the *Connecting with Others* program, as evidenced by these research outcomes.

Traditionally, with respect to organizational diversity and inclusion interventions, there has been a gap between researchers, who produce the research that is included in diversity trainings, and who evaluate the efficacy of diversity trainings, and practitioners, who deliver the diversity trainings. Researchers often focus on the internal validity of experiments that test the effectiveness of specific interventions to reduce bias and/or promote intergroup harmony. These studies are also often conducted using college student or other forms of convenience sampling, although ideally researchers would engage in translational research that tests laboratory-based insights in the field and vice versa. In contrast, practitioners conduct their trainings in the workplace with employees and are more principally concerned with the implementation and audience response to DEI interventions, with more limited concern for the underlying psychological processes that drive these effects. For instance, there is a documented gap between the claims made by providers about the efficacy of training and the scientific evidence that underpins these claims (Onyeador et al. 2024). Although some of this gap may be attributable the reality that researchers and practitioners typically work independently, with different incentives, despite sharing common goals, much of this siloed approach may be because of limited opportunity and shared frameworks for proceeding collaboratively. In this respect, the CTS framework offers valuable guidance for bridging basic research and practical application to produce valid interventions tailored for specific audiences. Indeed, though rare, there are researchers who bridge this gap between empirical knowledge production and practical application of that knowledge.

4.1 | Limitations and Future Directions

This investigation was an exploratory, initial effort to examine the effect of a workplace diversity training. The priority future direction is to run the originally conceptualized study, with a robust sample, to test these exploratory findings in a confirmatory fashion and explore underlying mechanisms and potential moderators. This would allow us to test the effect of diversity training on more behavioral outcomes (e.g., verbal and nonverbal behavior during interactions with a person of a different race) and explore whether participating in training improves interaction skills (e.g., reductions in disparities between the interactions with the Black and White undergraduates).

Future research can address the procedural limitations of this investigation. For example, we did not compel participants to select a person of a particular race for the interpersonal contact through the program, but the measures we focus on in this article largely measure responses toward Black Americans. The effects of the program on attitudes toward Black Americans might have been even stronger among those who explicitly engaged in contact with a Black person. Also, perhaps because of the nature of the organization in which participants worked (healthcare) and/or because participation in the study was voluntary rather than mandatory, participants were primarily liberal in their ideology and low in racial bias. Future research could explicitly recruit participants with less inclusive ideologies (i.e., high SDO, RWA) and/or high prejudice to examine whether diversity training has similar effects for those who may be least likely to have cross-group interactions, and who have, as a result, the highest need for training. In addition, there is value, theoretically and practically, in examining whether trainings like these influence responses toward other stigmatized groups, like overweight people or queer people.

The current design does not allow us to disentangle the role of the different elements of the *Connecting with Others* program. As Devine et al. (2012, 1276) observed about their multifaceted intervention, which uses a similar approach as this program: “Although the complexity of the intervention brings ambiguity in the interpretation of the effects of the intervention, it is also likely that there is no single ‘magic bullet’ that, by itself, prompts the regulation of implicit bias and the multifarious changes in concern and awareness such self-regulation brings. Instead, several components likely work in combination.” Nevertheless, efforts to examine the impact of the two main components of the *Connecting with Others* program—the daylong workshop and the contact element—individually and in combination—could compare conditions involving (a) the full training program, (b) the training workshop only, (c) the inclusive practice experience only, and (d) an appropriate no-training control condition. We recommend that such research employ an appropriately-powered pre-test versus post-test/control versus treatment(s) experimental design as was intended in the current research project.

Future research might also investigate why we observed variability among the different outcomes. One explanation for the differential impact of training across measures is that participants’ orientations were so highly egalitarian that change would be hard to achieve (i.e., a “ceiling effect”). We note, however, that

the level of SDO exhibited by participants was very low initially (averaging less than 2 on a 1–5 scale), but the reduction of SDO was one of the strongest effects. This, therefore, constitutes a conservative test of our predictions.

Future research might map the impact of different content in diversity training programs onto different outcomes. For example, exercises that make people aware that they are not living up to their egalitarian values might primarily increase motivation to respond without prejudice (Monteith et al. 2016) but direct contact may be critical for reducing SDO (Meleady et al. 2020). In addition, even more extended training and/or experiences may be needed to achieve reductions in explicit racial attitudes, which are highly crystallized, and implicit biases, which are overlearned associations. For example, Onyeador et al. 2020) found that more favorable interracial contact across students' 4 years of medical school predicted less explicit prejudice and implicit bias when they were in medical residency. Much more sustained, immersive, positive contact may be needed to change implicit biases and explicit attitudes.

4.2 | Plans for Future Work in the CTS Framework

In the CTS framework, the current research is situated in T2 (testing the efficacy of the diversity training program using a sample made up of key stakeholders) and T3 (testing the efficacy of the diversity training program in the workplace context where it would be implemented). As mentioned above, the primary future work would be to continue to test the efficacy of the diversity training program based on the insights from our experience. That is, the first follow-up should be to test the efficacy of the diversity training program, again at T2 and T3 as in this investigation, but with a properly powered sample of participants.

Future studies like this will require dedicated staff from each relevant group: researchers, hospital administrators, and diversity training practitioners. The researchers will need to be able to manage a large, complicated research project. This includes planning and designing the study, selecting relevant outcomes, preregistering analyses, scheduling and running lab sessions, collecting physiological data (if desired), cleaning and analyzing the data, and writing and interpreting the results. The hospital administrators will need to secure buy-in from their organizations, to consider what incentives will encourage participation to ensure an adequate sample, and ideally be able to provide on-location space equipped with technology like video cameras and physiological measurement equipment to conduct the trainings, lab sessions, and inclusive practice interactions. They may want to think about their organization and what format would be most applicable for the inclusive practice activities. In what formats do employee interactions usually occur? Are there regular opportunities for lunch or coffee meetings with refreshments provided? Should the inclusive practice interactions occur during one-on-one meetings in individual offices or during a group mixer? The diversity training practitioners will need to be able to deliver evidence-based content in an engaging manner, consistently across sessions, timepoints, and teams and manage any questions, defensive reactions, or need for additional support that may result. Given our experience, we would encourage all partners to consider in advance what will happen if they are

unable to conduct the project as conceptualized, whether due to external circumstances or difficulty securing the needed sample.

To refine the intervention itself, investigations could productively examine which aspects of the diversity training program (e.g., content in the workshop, inclusive practice interracial contact, race or gender of the diversity training provider, voluntary versus mandatory participation) are most influential for which outcomes (motivation, inclusive ideologies, interracial interactions, physiological responses, organizational behaviors). Research could also examine aspects of the audience to learn whether the training is similarly effective for those who are more and less motivated to improve their interracial interactions, those who have more and less inclusive ideologies, those who choose a Black coworker for the inclusive practice interactions, and so on. Additional research could also examine whether the diversity training program influences outcomes that are more tightly connected to diversity, equity, and inclusion practices within the organization, like reducing disparities in hiring, compensation, evaluations, promotion, retention, belonging and so on (see Mallett et al. 2025), and identify aspects of the intervention that yield particularly positive outcomes for people of color in the organization. Given the hospital environment, it would also be useful to test whether, down the line, this form of training, perhaps directed toward physicians and nurses, reduces racial disparities in racially discordant doctor-patient interactions, treatment recommendations, morbidity and mortality, or compliance with medical treatment.

To scale the intervention, there are several logistical aspects to test and evaluate. This is a test of one training with one specific format offered by practitioners who are external to the organization. Would any training that includes the educational and experiential components exert these effects? Would this diversity training program be successful if implemented by trained staff within the organization rather than by external diversity training providers? How long does the diversity workshop portion need to be? How long do the inclusive practice interactions need to go on? Is the effectiveness of the diversity training program affected by whether the inclusive practice of interracial interactions is with one employee of a different race, multiple employees of one different race, or multiple employees of different races? The results of these investigations would inform work in T4, which would involve rolling out the training throughout the hospital staff in a single hospital, then in multiple hospitals in a system, and then in hospitals around the nation. Suggested investigations would additionally identify organizational factors that might affect the effectiveness of the intervention. Implementing the training program in many organizations may yield data on contextual factors that influence effectiveness (e.g., region, patient population, doctor-patient ratio).

4.3 | Policy Implications of the Current Research

The issues that stimulated this research, racial disparities in health and healthcare, are influenced by factors that operate at individual, organizational, and structural levels of society (Penner et al. 2023). Understanding the policy implications of this research is especially important, given that policies impact all three levels. Policies change the structure of organizations, are instituted

by organizational leaders, and influence individuals' behavior (e.g., Datta and Mullainathan 2014; Hatzenbuehler et al. 2015; Schneider and Ingram 1990).

Indeed, many such policies are being implemented nationwide. For instance, in 2019, in response to major racial disparities in maternal and neonatal mortality in childbirth, California instituted a law (SB 464 California Dignity in Pregnancy and Childbirth Act) requiring diversity training for perinatal healthcare professionals. Five other states (Delaware, Maryland, Massachusetts, New Jersey, and Washington) have subsequently established such laws. Thus, it is particularly timely and critical for organizations to assess diversity training in line with the CTS framework (e.g., Humanitas Institute, <https://www.humanitasinst.org/>).

In contrast, more than 30 states have introduced or passed bills banning or limiting DEI initiatives (Adams and Chiwaya 2024). Beginning on the very first day of his second term in office (January 20, 2025), the President and members of his Administration issued executive orders and other guidance (e.g., the Dear Colleague letter from the Department of Education) prohibiting engagement with diversity, inclusion, equity, accessibility, and other terms. As a result, the current approach to this sort of work is under grave attack. Often, diversity trainings focus on changing racial attitudes. It may be possible to reframe these efforts and broaden their goals, for example, to focus on helping employees improve their job performance, which might improve patient satisfaction in general. Framing interventions in such instrumental ways may be less appealing and convey less support to members of minoritized groups—and thus may potentially be less effective (Starck et al. 2021)—than are targeted approaches grounded in moral rationales. However, programs that are race-neutral (and legal) can still offer benefits to members of minoritized groups who are at particular disadvantage in certain contexts (Dobbin and Kalev 2022)—such as in healthcare settings. The issues of bias and inequality persist, despite challenges to efforts to address them, and as such, there are still administrators who desire to combat bias and increase inclusion in their organizations.

4.4 | Reflection on Conducting Racial Justice Intervention Research Grounded in the CTS Framework

The prevailing view for some time was that to produce racial justice in organizations, efforts needed to change “hearts and minds.” In their descriptions of diversity trainings, the companies that provide them often claim they will change attendees' biases (Onyeador et al. 2024); however, the evidence for these claims is scant (Dobbin and Kalev 2016; Lai et al. 2016), a challenge in the CTS framework. Given the scant evidence that diversity trainings can change attitudes, a new view has arisen, that to produce racial justice in organizations, interventions will need to move beyond the focus on intrapersonal and interpersonal outcomes arising from individuals' psychology to a focus on structural interventions that will shift organizational outcomes (Dobbin and Kalev 2022; Onyeador et al. 2021, Onyeador et al. 2024). However, organizations are still made up of individuals, and some of those individuals are tasked with enacting the proposed structural

interventions. Thus, even applying a more structural framework, it is likely still useful to target individuals. In this intervention, we sought to integrate the two perspectives by testing the efficacy of a training directed toward influencing administrative leaders and staff, individuals with some power within the organization. Next, we reflect on our experiences conducting this research.

The research team was made up of classically trained social psychologists, two of whom are employed in management departments in business schools, and one who is an expert on bias in medical contexts. Given our training, we are well equipped to run experiments and test for the causal influence of interventions on attitudes, inclusive ideologies, motivation, behaviors, and so on. Our team could have benefited from the inclusion of scholars of organizational behavior, sociology, public health, and academic medicine to provide guidance about the issues that arose over the course of our project and to help us think through what outcomes might be valuable to study given the context, in particular, outcomes that might have consequences for disparities in patient care. Such efforts would have increased the ultimate impact and utility of the findings.

We faced several challenges in conducting this research. Primarily, it was costly and logistically challenging. Our participants were hospital employees who took time from work to travel to our lab and participate in the study, which, including the lab study and travel, could take 2 h. Given the time intensive nature of the study, recruiting a sample with the statistical power to detect our effects was difficult. We were initially interested in the impact of the training on interracial interactions and testing this effect required additional training for research staff and added significant cost and complexity to the study.

We addressed these challenges with collaboration. Multiple faculty members, the hospital administration, and the diversity training provider partnered to secure the financing, equipment, facilities, and staff needed for the study. To address the time needed from the employees, the hospital sent the recruitment messages, gave participants work time to participate, and employees were compensated up to \$75 for participating in surveys and sessions. We spent several weeks training the research staff on how to conduct the study and use the physiological and video equipment.

We offer the following tips based on the lessons we learned in this experience. Centrally, this project would not have been possible without robust cooperation from three key partners. First, we had a diversity training provider that was open and enthusiastic about submitting their program to empirical scrutiny. Second, we had hospital leadership that was open and enthusiastic about providing training to their employees and understanding: (a) whether the training was effective, (b) for whom it was effective, (c) why it was effective. Our project was disrupted by the coronavirus, and thus only able to begin to explore (a) whether the training was effective. In order to explore (b) and (c), and given the expectations of the CTS framework, we would also advise researchers to find organizational partners with large numbers of employees who are willing to participate in multiple rounds of the research, for the refining and scaling efforts at the later stages. Third, we had researchers who were committed to providing

the infrastructure to manage the project, conduct the research, analyze, interpret, and write up the data, and submit the project for publication multiple times. We recommend that researchers who want to conduct this kind of research do whatever is possible to make participation easy for participants. Ideally, the lab would be set up in the hospital, and all study activities would occur where employees are easily able to access the research site.

Ultimately, an abundance of patience, persistence, and time are needed. This work has taken more than 5 years to conduct and publish. No partner preferred this duration, but it was the result of unexpected challenges that arose over the course of the project. Researchers should be ready for research like this to take much longer than anticipated. Unfortunately, many scholars, diversity training providers, and organizations may not be able to afford this kind of time investment. However, each stakeholder received interim benefits. The researchers collected initial data and were able to creatively address the challenges that arose. The training provider was able to report that their program was being rigorously evaluated. Some hospital employees received training and, in addition to the effects we identified overall, based on comments from participants in an assessment of the program, it was a transformative experience. Some managers described the inclusive practice as “deeply meaningful,” as well as “eye-opening.”

5 | Conclusion

The current work answers the call for testing the impact of diversity training administered in “real-world” contexts on bias reduction (Devine and Ash 2022; Paluck and Green 2009; Paluck et al. 2021). Our investigation of *Connecting with Others* answers the question of whether diversity training can have a relatively enduring effect with a “yes”—but in a textured way: The degree of impact varied across measures. These findings provide a foundation for pursuing a deeper understanding of bias reduction with significant social consequences.

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Conflicts of Interest

The authors declare no conflicts of interest

Data Availability Statement

The data used in this study are openly available through the Open Science Foundation at <https://osf.io/648yd/>.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.

Supplementary information: josi70013-sup-0001-SuppMat.docx