BRIEF COMMUNICATION

From describing disparities to understanding why disparities exist: Anti-racist methods to support dental public health research

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Abstract
Racism is understudied in the oral health literature at the same time that race is overutilized as an explanatory factor in study design. Social and behavioral methodologies offer conceptual models that can be used to include racism in dental public health questions. In addition, interdisciplinary and mixed methods approaches allow for understanding racism as an underlying cause of social and health disparities and exploring solutions that address historical, institutional, social, political, and economic drivers of oral health inequity, while recognizing the limits of measuring racism quantitatively. In a collective acknowledgement of the limitations of conventional methods, there are new opportunities to explore how qualitative and mixed methods research can serve as drivers for both social justice and health equity, while building and sustaining a diverse research workforce that can better close these disparities and offer antiracist solutions to oral health inequities.

KEYWORDS
equity, justice, methods, public health dentistry, racism, research methods

COMMENTARY

George Floyd’s murder and the global pandemic were a perfect storm for the world to grapple with racism. Racism entered the center stage of political discourse, public health practice, and healthcare delivery with activists calling for policy changes and historically minoritized communities bearing disproportionate burdens of disease and mortality and greater challenges to accessing COVID-19 vaccinations and healthcare for COVID. Racism can no longer be ignored in any aspect of healthcare or disease burden [1]. Scholars in sociology, public health, and medicine are increasingly refining methods to study structural racism as a variable in the causal pathway to various health outcomes [2–4]; however, oral health researchers have not fully tackled racism as a problem. In fact, conceptual models describing influences on oral health omit racism [5].

In mapping the human genome, scientists have identified few biological explanations that differentiate groups of people. Race is a social category that only has the meaning that society gives to it. Describing someone as Black in the United States, Brazil, South Africa, or the Dominican Republic means different things, and encompasses individuals who present with pigment expressions in skin from albinistically light to melanin-rich and varying textures of hair. Critically examining the social, historical, and political contexts that underlie the variable “race” reveals its limited explanatory power, and how pseudoscientific concepts based in institutional white supremacy cause harm by reducing the root cause of disparities—oppression—to a proxy variable. And yet, in dental research, race is as commonplace in study design as age. Such obfuscation through study design of the differential power and privileging of different groups is no longer defensible. Inquiry that involves racism operationalized in structures, policy, and institutions, rather, can explain the persistence of disparities [6]. Moreover, using antiracist frameworks can support interventions and practices to support oral health equity.

For this commentary, we investigated the degree to which the oral health literature has engaged racism as antiracist inquiry. We conducted a literature search in three phases to explore in health sciences and social sciences...
databases articles that focused on oral health topics and racism (Figure 1). We used specific search terms: race and dentistry, discrimination and dentistry, racism and dentistry, and antiracism and dentistry to explore the literature in a second phase informed by Bastos (2018) [7]. Lastly, we conducted a search of the recent literature with search terms to include intersectionality and often cited researchers in the field of discrimination and racism. Our objective is to propose some pathways for dental researchers to move from using race to describe oral health disparities to addressing racism as a root cause of oral health inequity. We sought work that included racism in the problem statement, research model, or proposed solution. We charge that oral health researchers’ inability (or perhaps lack of will) to address racism perpetuates disparities, stigmatizes communities, and limits solutions to primarily individual-level interventions but not the necessary systems-level changes. Furthermore, we elevate best examples of research from other disciplines that measure the effects of racism on health outcomes and propose structural solutions that may be more impactful than addressing racism, biases, or prejudice between individuals.

Understanding why disparities exist involves centering racism at the core of study design, whether at population, community, or patient/individual level, and developing research questions using social and behavioral theory that conceptualize racism at different levels: institutionalized, personally mediated, and internalized. Foundationally, we can advance dental scientific inquiry as antiracist practice by conducting cohort and cross-sectional studies to examine the relationships between experiences of oppression and oral outcomes, an established area in other health scholarship [8]. There are no landmark studies at the national level in the United States that exemplify antiracist methodologies using surveillance data. Data from the Behavioral Risk Factor Surveillance System’s Reactions to Race module (2004–2014) have been analyzed to assess mental health experiences, tobacco use, health status, and preventative health services but not—until this special issue—oral health. If self-reported experiences with discrimination and racism or quantified measures of implicit bias have been demonstrated to impact mental health and other diseases at the population level, it is plausible that effects on oral health could be quantified with the intent to identify appropriate solutions to improve either the delivery of care or health outcomes [9,10].

Scholars can collect and analyze primary data using validated instruments to examine how individuals’ and communities’ experiences with discrimination and racism impact oral health outcomes, for example, The Discrimination in Medical Settings Scale [11] or the Everyday Discrimination Scale [12–14]. Using the Measure of Indigenous Racism Experiences instrument (MIRE) [15] has allowed Australian scholars to control for social determinants of health and lifestyle variables when analyzing the impacts of racism on population-level oral health, and call for human rights-based approaches in policy to address the systemic and interpersonal racism documented [16].

Dental researchers can also examine how structural racism affects access to dental care, oral health related quality of life, and clinical outcomes by investigating the impacts of oppressive historical policies and systems-level practices on racially minoritized populations’ oral health [17]. Harmful decisions of governance including redlining, constructing
Table 1 Examples of research designs and methods to examine different oral health research topics, by level of racism, with examples from the broader health literature

| Oral health research area | Level of racism | Individual | Interpersonal | Institutional |
|--------------------------|----------------|------------|---------------|--------------|
| Oral health service delivery | Topic: The effects of providers’ unconscious bias on treatment decision-making | Topic: The effects of patient-provider identity concordance on clinical, utilization, and economic outcomes | Topic: Dental visits to emergency room | Example: Model admissions and discharge rates with regard to hospital-level influences on physician decision-making disaggregated by sociodemographic characteristics and reflected through patient intersectional identities |
| | Example: Measure unconscious bias among dental students and providers and models its effects on treatment decision making and care delivery, particularly in response to patient subjective reports such as pain or behavioral intervention adherence, and standard of care [21–24] | Example: Model effect of racial (and other) concordance on oral health outcomes including, health care utilization, and economic outcomes [25,26] | | |
| Self-reported outcomes (patient and population-level) | Topic: Experiences of health care and lifetime discrimination, and their effects on oral health outcomes | Topic: The effects of patients’ experiences of discrimination by providers on oral health outcomes | Topic: The effects of structural racism, for example, policy decisions, on population-level outcomes, including prevalence of oral health outcomes and perceptions of oral health status. | Examples: Model racism across different levels to measure impact on population-level oral health outcomes. Data are needed within surveillance systems to help researchers to understand racism’s impact on the causal pathway of disease [18] |
| | Example: Measure lifetime and health care specific experiences of discrimination, and model their effects on oral health outcomes such as disease, pain, and utilization [28–31] | Example: Describe or measure how patients’ experiences of interpersonal discrimination are associated with oral health outcomes, particularly clinical outcomes mediated by stress [32] | | |
| Workforce studies | Topic: Understanding challenges and supporting strengthening opportunities among minoritized students and professionals | Topic: Advancing racial justice and equity in students’ pathways to and though dental careers | Topic: Diversifying leadership within the disciplines | Examples: Deliberately recruit, mentor, resource, and cede power to diverse leaders within the dental disciplines [39–41] |
| | Examples: Understanding how minoritized students and professionals cope with racialized stress and identifying, testing, and scaling ways to bolster these methods [33–36] | Examples: Evaluating multi-pronged approaches to pathway minoritized students into pre-professional, professional, and post-professional specialty education [37,38] | | |
| Intervention studies | Topic: Leveraging provider education to improve knowledge of and commitment to anti-racism | Topic: Implementing shared decision making and trusting patient preferences to reduce disparities | Topic: Transforming health service delivery to advance racial equity | Examples: Revise racialized clinical algorithms; prioritize equity throughout performance improvement and quality improvement processes and measures [48–50] |
| | Examples: Centering anti-racism in provider education at all levels, from pre-professional and professional education through continuing education [42–44] | Examples: Fostering provider values of mutual learning, trust in patients’ knowledge and values and consensus building to collaboratively reduce disparities [45–47] | | |
warrant inquiry using our proposed lens to center racism and consider racism across different levels. Scholars may also build on the limited-but-developing scholarship of racism and oral health outcomes to address areas including:

- Procedure decision studies that assess how implicit bias and racism affects dental team members clinical decision-making and subsequent patient- and population-level health outcomes, for example, the management of self-reported oral pain [21,22];
- The effects of patient-provider discordance or concordance on clinical decisions and outcomes, for example, self-identification through an intersectionality framework [51].
- Community studies that document how community members’ experiences with racism, discrimination, and prejudice in everyday and health care settings impact decisions to utilize dental services [23,28];
- Pedagogical studies to develop and evaluate the impacts of antiracist provider education on dental practice [52];
- Workforce studies to identify and strengthen pathways to dental careers among minoritized students and to understand provider support for interventions that advance equity in oral health service delivery, for example, accepting patients with Medicaid dental benefits and supporting autonomy in oral health prevention specialists’ practice;
- Policy studies to determine the relationships between structural racism and oral health policy interventions, for example, municipal water quality and fluoridation in historically redlined or minoritized neighborhoods [29,53]; and
- Intervention studies that address structural racism to improve patient outcomes and access to care.

In addition to quantifying the effects of structural racism and discrimination and bias on individual- and population-level oral health, we can use qualitative and community-engaged methods to gain a deeper understanding of these dynamics and help us identify appropriate interventions to address inequity. For example, studies of racially minoritized people’s prenatal and maternal care experience highlights at least two mid-level mechanisms underlying inequitable pregnancy and birth outcomes that may similarly apply in oral health: (1) providers gatekeeping patients’ access to information and participation in shared decision-making based on disempowering racialized assumptions and (2) paradoxically, how minoritized patients’ “coping in the face of racial adversity” favorably affects physical and mental health outcomes [54,55]. Based on this evidence, research teams propose numerous interventions including embedding patient-centered implicit bias and antiracism provider education within broader institutional commitments to dismantle systemic racism and reimagining care delivery that reflects community priorities. Similarly, community-based scholars have demonstrated the merits of grounding health interventions in local traditions of political claims-making, whether civil rights organizing among middle-aged people in the Bronx, digital platforms among young people in Oakland, or political claims-making among Mapuche communities in Chile [56–58]. These examples are important because they demonstrate how community leadership can advance oral health equity, for example, by identifying appropriate structural, policy, and practice interventions.

Now is the time for oral health researchers to move from assigning a priority to race as an independent variable to address racism as the root cause for disparities. An antiracist research agenda that can ask these questions about racism is important. Equally important are research teams that include diverse individuals, theoretical and scientific perspectives, and communities most impacted by disparities to be equal partners in developing the solutions through scientific inquiry. Some of us may have to give up power for this research to happen, and others may have to step into their power. In the end, our research must be grounded in an ethic of moving past just documenting persistent disparities and toward breaking the cycles of racism.

**CONFLICT OF INTEREST**
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