

# Efforts to advance NIH-funded behavioral and social sciences research on structural racism and health

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## Abstract

This commentary provides background and context for the increasing attention to research designed to better understand and address the impact of structural racism on health, with particular attention to the role of the behavioral and social sciences. The manuscript describes the impetus provided to this work by recent public health crises of COVID-19 and the racial justice movement that emerged following the murder of George Floyd in the summer of 2020. A range of initiatives from the National Institutes of Health (NIH) focused on structural racism and health equity are discussed in this context and opportunities and gaps for future research are identified.

**Keywords:** Structural racism, Health equity, BSSR

## Background

The past few decades have seen enhanced interest in research to understand and address the impact of social and economic environments on community and individual level health, functioning, and quality of life risks and outcomes. Specifically, “social determinants of health” are defined as the conditions in the social, economic, structural, and institutional environments in which people are born, live, learn, work, play, worship, and age [1]. In the recent past, the clear disproportionate impact of the COVID-19 pandemic on communities of color, along with the increased focus on racial and social justice issues in the aftermath of the George Floyd murder in the summer of 2020, has drawn intense examination of the unique impact of racism as a social determinant of health, with specific attention to structural racism. Structural racism is defined as public or private policies, practices, norms, and cultural representations that inherently procure advantages or disadvantages to individuals and populations based on certain demographic characteristics (e.g., race, ethnicity, sex/gender, disability status) across the life course and between generations [2, 3].

Increasingly, health organizations (<https://www.apha.org/topics-and-issues/health-equity/racism-and-health>) federal agencies (<https://www.cdc.gov/media/releases/2021/s0408-racism-health.html>) and local jurisdictions (<https://www.columbus.gov/racismresolution/> [https://www.chicago.gov/city/en/depts/mayor/press\\_room/press\\_releases/2021/june/RacismPublicHealthCrisis.html](https://www.chicago.gov/city/en/depts/mayor/press_room/press_releases/2021/june/RacismPublicHealthCrisis.html)) are making public statements declaring racism as a “public health crisis” citing the significant impact of these policies and practices on individual and population health and well-being. In addition, there has been expanded interest in supporting research to better understand and mitigate these impacts, focusing renewed

attention on earlier calls for such research [4, 5]. This has resulted in growing attention to the role of the behavioral and social sciences in understanding and promoting health and well-being. The National Institutes of Health (NIH) defines behavioral and social sciences research (BSSR) as the systematic study of behavioral and social phenomena relevant to health. Specifically, relevant to the understanding of structural racism’s impact on health are “social phenomena” defined as “interactions between and among individuals, and to the characteristics, structures, and functions of social groups and institutions, such as families, communities, schools, and workplaces, as well as the physical, economic, cultural, and policy environments in which social and behavioral phenomena occur” [6].

There is a long tradition of social science research related to structural factors more broadly and structural racism, more specifically, that has been applied to domains other than health but may be less familiar or understood in health research contexts [7, 8]. Identifying, describing, and developing innovative ways to appropriately and rigorously assess, measure, and quantify *structural* level concepts and in turn document their impact on individual and population-level health can be a complex and challenging process. Health research in general tends to be focused on *individual*-level risk, health behavior, and functioning. As such, applying concepts that operate at a higher or systemic level to measure and more importantly intervene involves in many ways a fundamental shift in thinking and approach. The social sciences (e.g., demography, economics, sociology) bring a rich tradition of rigorous research in the health domain and have much to offer in this space as the broader field moves toward research that can better address these complex questions. Indeed, there is increasing recognition of the need for transdisciplinary research that

can better elucidate the biological, psychological, social, and behavioral mechanisms of how structural racism impacts health and well-being as well as to develop, evaluate, scale-up, and strengthen multi-level interventions, practices, and policies that address structural barriers to advance health equity and improve population health.

In addition, there is an ongoing parallel movement to closely examine the actual conduct of social and behavioral (and other related) sciences as a socially created system itself. As such, the metrics, measures, methodologies, and research designs are constructed within the dominant cultural perspective and thus likely have inherent racial/ethnic (and other) biases that are unknowingly perpetuating such bias in their use and application [9]. Relatedly, approaches such as community-based participatory research and community-engaged research more broadly are integral to addressing these current public health crises. There has been increasing recognition that rigorous research can in fact be conducted in partnership with communities but that it may not look like the typical “gold standard” Randomized Controlled Trial [10]. Yet, this work is more complex and often takes more time and different structures and processes than the typical health research that is supported by the NIH, so implementation challenges remain [11]. In response to the COVID-19 pandemic, NIH recognized that to truly meet the needs of diverse communities hit hardest, community partnerships in the research were essential and launched several efforts to address these challenges. First, the Radx-Underserved Populations initiative is designed to conduct rigorous, community-engaged research that will identify, understand, and work to alleviate the barriers to COVID-19 testing in underserved and COVID-vulnerable populations across the USA [12]. Second, the Community Engagement Alliance against COVID-19 strives to provide information and resources through outreach and engagement with the communities hit hardest by COVID-19 and to build research community partnerships and improve diversity and inclusion in the overall COVID-19 research response [13].

While research approaches that incorporate true partnership with the community are critical to strengthening our understanding of the impact of structural racism on health and more importantly, part of the potential interventions and solutions needed to ameliorate these impacts, it is only one part of the solution. Decades of research (much of it supported by the NIH) have clearly documented the existence of health disparities and have identified a range of biological mechanisms through which experiences of discrimination and racism exert impacts on physical and mental health and well-being [14]. Measures of perceived discrimination are now included in the NIH *PhenX Toolkit* (consensus measures for *Phenotypes* and *eXposures*) [15] which provides a catalog of recommended measurement protocols as a resource for NIH and other Federal research grantees. This inclusion points to a recognition of the impact of these experiences on individual health and functioning. Yet, despite these and other advances, the majority of NIH-supported research (and health research in general) remains focused on the *individual* level both with respect to outcomes and interventions. Rigorous research documenting the impacts of structural racism on health does exist [16] and the field is growing rapidly. However, there remain many critical gaps with respect to innovations in measurement, nuanced understanding of mechanisms of action, and most of all in the space of structural level interventions

that can have the desired impact on health, health equity, and health policy.

## BSSR and Structural Racism Research Efforts at the NIH

This backdrop has provided immense opportunities to the research community as a whole and the BSSR researchers, in particular, to rise to the occasion and ensure our best science is leveraged for this effort in the service of the NIH mission to promote health and prevent disease *for all*.

NIH has supported minority health and health disparities research for decades, starting with the founding of the Office of Minority Programs in 1990 which morphed into the Office of Research on Minority Health, and then the National Center on Minority Health and Health Disparities in 2000. The behavioral and social sciences have always been at the forefront of this work. Indeed, the NIH Office of Behavioral and Social Sciences Research (OBSSR) issued a Funding Opportunity Announcement in 2007 focused on health disparities research [17]. As the National Institute of Minority Health and Health Disparities (NIMHD) transitioned from a Center to an Institute in 2010, and later, under the current leadership, expanded its portfolio to fund researcher-initiated grants addressing minority health and health disparities, NIMHD expanded its role in leading and coordinating trans-NIH health disparities initiatives. With this expansion of health disparities efforts and scientific interest at both NIMHD and across the NIH institutes and centers, OBSSR transitioned the leadership of leading this funding opportunity announcement (FOA) effort to NIMHD. NIH has continued to build on this important legacy, most recently with the NIMHD-led development and release of the NIH Strategic Plan on Minority Health and Health Disparities on March 31, 2021. The plan includes nine (9) goals and related strategies in the areas of scientific research, research-sustaining activities, and outreach, collaboration, and dissemination [18].

### BSSR—Coordinating Committee (BSSR-CC) Working Group

In August 2020, the BSSR—Coordinating Committee (BSSR-CC) created a new Work Group (WG) named the *Structural Racism and Health WG* which currently has over 25 members who represent more than 14 NIH Institutes and Offices. The primary goal of this WG is to highlight behavioral and social science research priorities that can be pursued to elucidate mechanisms on how structural racism impacts health, as well as on how to best dismantle adverse effects of structural racism to advance health equity and improve population health. To accomplish this goal, the WG identified four (4) objectives for their charge. The first aim was to conduct a high-level, portfolio analysis of NIH-funded grants that examined structural racism to provide a starting point for identifying BSSR research needs, opportunities, and gaps. The second was the development of research recommendations based on the preliminary findings of the portfolio analysis. Next, the WG identified strategic ways to synergize with new and ongoing NIH efforts to address structural racism within the NIH-supported and greater scientific community and support workforce diversity and training capacities. Lastly, the WG wanted to hear from experts and learn about enhanced ways to support the use of a broad range of methodologies and perspectives for expanding research in this area.

This high-level internal and preliminary portfolio scan to identify projects that specifically focused on structural racism over the last 10 years yielded only 29 NIH-funded research projects (including supplements). Notably, half of those awards were funded in FY2020 and were related to specific calls for maternal mortality or COVID-19 research and only a handful were evaluating structural level interventions. This pattern suggests that recent public health crises highlight existing disparities as being rooted in structural racism and have spawned increased NIH calls for research to address these impacts on public health, as described in more detail below. Based on this analysis as well as feedback from *Structural Racism and Health* WG representatives across the ICs, in October 2020, the WG developed research recommendations which were organized into four (4) focus areas: *Measurement, Multilevel Studies, Mechanisms of Action, and Interventions*. For *Measurement*, the WG highlighted the need to better understand traditional and novel measures of structural racism and its role and impact on health outcomes and inequities across various sectors (e.g., health care, housing, social services, education, and justice). As well, learning more about how structural racism converges with other measures such as discrimination, trauma, coping/resiliency, and stigma was deemed critical for understanding measurement. For *Multilevel Studies*, the WG recognized the need to expand support for multilevel studies which can inform enhanced understanding of the impact of longitudinal and intergenerational exposures to structural racism on a range of risk factors, biomarkers, health behaviors, physical and mental health outcomes, and overall morbidity and mortality. This includes the examination of structural racism on both individuals and populations across institutional systems (e.g., education, housing, workplace, justice, law enforcement, financial, transportation, and environmental) and across the life course. As well, understanding more about multilevel approaches, methodologies, and theories to examine structural racism, other types of racism (e.g., cultural), discrimination, and the social determinants of health (SDoH) and their interaction with other characteristics such as sexual orientation, gender identity, disability, age, and socioeconomic status (i.e., intersectionality). Regarding *Mechanisms of Action*, the WG was interested in elucidating the moderators and mediators of the structures and systems that perpetuate the structural racism and health outcomes/inequities. Lastly, the WG recommended the development, implementation, adaptation, and sustainment of innovative community, policy, and multi-level/systems intervention research that addresses structural racism, discrimination, and other SDoH to mitigate their impacts on health outcomes and inequities. This also included supporting various research methodologies from natural experiments, policy research, and pragmatic trials to quasi-experimental designs and implementation science.

### UNITE initiative and related NIH efforts

On March 1, 2021, NIH leadership unveiled the *UNITE* initiative which is a new effort that involves all 27 NIH Institutes and Centers and the Office of the Director, to promote and advance racial equity, diversity, and inclusion [19]. Through UNITE, NIH is working “to foster a biomedical research community and NIH workplace that are free from hostility and discrimination grounded in race, sex, or other federally protected characteristics. In addition, NIH seeks to promote research to inform and address the breadth of health

disparities/inequities, which continue to increasing morbidity and mortality.”

The UNITE Co-Chairs are Drs. Lawrence Tabak (NIH Principal Deputy), Marie Bernard (Chief Officer for Scientific Workforce Diversity), and Alfred Johnson (NIH Deputy Director for Management) and include five committees for each letter of UNITE that will directly address its objectives. Committee *U* will perform a systematic evaluation of NIH and the external scientific community by *understanding* stakeholder experiences through listening and learning. Committee *N* will develop *new* research on health disparities, minority health, and health equity. Community *I* will work on *improving* the NIH culture and structure for equity, inclusion, and excellence. Committee *T* will ensure transparency, communication, and accountability with internal and external stakeholders. And Committee *E* will perform a broad systematic evaluation of the *Extramural* research ecosystem to change policies, culture, and structures to promote workforce diversity. As part of the UNITE rollout, NIH disseminated a Request for Information that focused on receiving comments on topics such as the biomedical workforce, research areas, NIH policies, and additional areas for bold, innovative initiatives, processes, or data-driven approaches that NIH could use to advance the diversity, inclusion, and equity of the biomedical research workforce and/or promote research on health disparities [20].

Early in its development, the BSSR-CC working group research recommendations (described in detail above) were provided to UNITE leadership (“N” committee”) which led to a robust discussion regarding various ways that NIH can ensure that BSSR priorities are incorporated into emerging research initiatives in this space. The UNITE “N” committee is making strides toward supporting innovative research that will advance and energize health equity research. Indeed, the resulting research initiatives that this group has implemented after analyzing current investments and creating and supporting transformative research initiatives through the NIH Common Fund include important elements of the BSSR-CC working group recommendations for research needs (Table 1). The Common Fund initiative released a funding opportunity in early 2021 through the NIH Office of the NIH Director, Office of Strategic Coordination. All NIH Institutes and Centers participate in Common Fund initiatives. The “Transformative Research to Address Health Disparities and Advance Health Equity” research initiatives solicited applications through two mechanisms for Minority Serving Institutions and entities more broadly to support collaborative investigative teams or individual scientists which could have a major impact on developing, implementing, or disseminating innovative and effective interventions to prevent, reduce, or eliminate health disparities and advance health equity. In October 2021, 11 awards were made totaling an investment of \$58 million over 5 years to researchers with bold, innovative, and transformative interventions to eliminate health disparities and promote health equity [21].

Supporting the goals of the UNITE initiative was also an early effort led by NIMHD to develop an NIH-wide Request for Funding Announcement (RFA) entitled, “Understanding and Addressing the Impact of Structural Racism and Discrimination on Minority Health and Health Disparities.” This RFA which had the majority of NIH Institutes and Centers participating, solicited applications on observational

**Table 1** | NIH activities that address behavioral and social sciences research gaps and opportunities on structural racism and health

Research gap/ opportunity	Activities: internal to NIH	Activities: extramural research community	Topics ripe for exploration
Measurement and methods	Webinar on innovations in measurement of struc- tural racism <sup>a</sup>	PhenX social determinants of health domain <sup>c</sup> RFA: Measures and methods to advance research on health-disparities related constructs <sup>b,d</sup>	Development and validation of approaches to assess structural racism and its impact within and across domains (e.g., housing, employment, education, health care, criminal legal system) Measuring how structural racism intersects with other levels of racism, social determinants of health (SDoH), and demo- graphic characteristics Use and integration of multiple theories and methodological approaches
Multi-level studies	Webinar on innovations in multi-level interventions to address structural racism <sup>a</sup>	RFA: Understanding and addressing the impact of structural racism and discrimination on minority health and health dispar- ities <sup>b,e</sup> RFA: Transformative research to address health disparities and advance health equity <sup>b,f</sup>	Understand multi-level mechanistic pathways through which structural racism experienced in a range of systems directly impacts individual and population health across the lifes- pan and between generations Develop, evaluate, implement, adapt, and sustain innovative multi-level/sector, health equity interventions that address structural drivers and other SDoH in true partnership with communities
Mechanisms of action Interventions			

<sup>a</sup>Activity directly implemented to support recommendations from the BSSR-CC Working Group.

<sup>b</sup>Request for Applications (RFAs).

<sup>c</sup><https://www.phenxtoolkit.org/collections/view/6>.

<sup>d</sup><https://grants.nih.gov/grants/guide/pa-files/PA-22-072.html>.

<sup>e</sup><https://grants.nih.gov/grants/guide/rfa-files/RFA-MD-21-004.html>.

<sup>f</sup><https://commonfund.nih.gov/healthdisparities/transformation/grants>.

BSSR-CC, Behavioral and Social Sciences Research—Coordinating Committee.

research to understand the role of structural racism and discrimination (SRD) in causing and sustaining health disparities and intervention research that addressed SRD to improve minority health or reduce health disparities [22]. This initiative also incorporated many of the identified BSSR research gaps with its focus on mechanistic, multi-level observational, and intervention studies. Several other recent NIH-wide efforts have additionally incorporated a substantial focus on structural racism, documenting the critical importance of these constructs in working to address the most pressing public health challenges. For example, NIH has been at the forefront of research to address the crisis of maternal mortality in this country through the IMPROVE initiative (Implementing a Maternal health and PRegnancy Outcomes Vision for Everyone) [23]. Given the disproportionate impact of this crisis on African American women, the most recent call for supplemental applications included a specific call to address structural racism (and COVID-19) in the context of maternal mortality research [24].

## Future Directions

As noted above, measurement remains a significant gap in advancing our understanding of structural racism on health and as such is a key focus area that BSSR research can provide important contributions and insights. The development of common data elements for measurement in general and more

specifically for SDoH has been an important part of NIH activities in recent years. Efforts to provide recommendations for standard data collection protocols and measures for use in the conduct of biomedical and behavioral research are currently organized in the PhenX Toolkit. Led by NIMHD, a recent effort provided a SDoH assessments collection to this toolkit, which was a significant contribution as it begins to address the challenges of measuring and assessing social level variables in a health-relevant context [25]. This assessment collection includes an individual measure of perceived discrimination which is undoubtedly a critical tool for health researchers to integrate into their ongoing work as they begin to take on examining the health impacts of racism. However, as noted above challenges remain with respect to defining and measuring *structural racism*- as this construct does not easily fit into an individual self-report measure and often requires piecing together administrative data from non-health systems. In addition, it requires multi-disciplinary lenses and a range of methodological approaches, and as such has been limited. A recent review indicated only 20 studies over the decade from 2007 to 2017 specifically quantified measures of structural racism in examinations of its impact on health outcomes [26]. The authors noted that measures were chosen in part based on publicly available data and covered a range of domains from residential segregation, criminal justice, and workplace environment. There are a few recent efforts [27] that seek to provide a more standardized way to assess structural racism



that considers the inter-relation of all of these domains, but this work is in many ways in its infancy and there is much more to be done. Future efforts through PhenX and other initiatives such as a recent RFA entitled “Measures and Methods to Advance Research on Health-Disparities Related Constructs” will be critical to supporting the expansion of research efforts to examine and address structural racism and health through the development and use of innovative consensus measures in this space [28].

Working to identify such innovative measurement approaches speaks to the important role of behavioral and social science rigorous methodology work in this broader effort. In this vein, the BSSR-CC *Structural Racism and Health* WG organized a webinar series for NIH staff to enhance their understanding of and capacities to support structural racism and health research. These two webinars in Summer/Fall 2021, focused on innovations in measurement and interventions research. The series brought in a number of renowned BSSR scholars who have been working to advance the rigor and impact of research to carefully define and assess structural racism and its impact on health as well as to develop evidence-based interventions at the structural level.

## Conclusion

Although research on structural forms of racism and its significant impact on health is not new, recent public health crises have made calls for systematic and rigorous study of these complex phenomena more urgent and critical to advancing population health and health equity. As such, the NIH has undertaken a comprehensive approach to better understand, and more importantly, address structural racism impacts on its own internal workforce, the extramural research community, and transformative research on health disparities. This commentary has focused primarily on the *research efforts*—readers are directed to additional resources for more information about internal [29] and external [30, 31] workforce issues as well as information about how all of these efforts related to each other and have documented progress and milestones [32].

It is abundantly clear that while great strides are being made in recent years, a significant amount of work remains to be done to facilitate the use of BSSR as well as transdisciplinary research to elucidate mechanisms of how structural racism influences and impacts health and well-being and to develop, evaluate, scale-up, and strengthen multi-level interventions, practices, and policies that address structural barriers and their impact on health to advance health equity and improve population health. In other words, there needs to be a shift away from a primary focus on descriptive and correlational studies to more precise emphasis on mechanistic and intervention studies, as noted in the recent NIH Council of Councils working group report on research opportunities in basic BSSR [33]. Specifically, a broad range of methodological approaches and theories are necessary to examine the biological, psychological, interpersonal, and other mechanistic pathways through which structural racism experienced in a range of systems (e.g., education, housing, criminal justice) directly impact individual and population health across the lifespan and between generations. It is also critical to recognize the interaction between structural racism and other demographic characteristics (e.g., sexual orientation/gender identity, disability status,

age, SES), other types of racism (e.g., cultural), discrimination, and SDoH. Finally, research is needed that seeks to develop, implement, adapt, and sustain innovative community, policy, and/or multilevel/multi-system interventions at the interface of structural racism, discrimination, and other SDoH. Such research will be transformative and complex as it may include a range of research methodologies (e.g., natural experiments, pragmatic trials) that enhance community engagement and health decision-making, foster culturally competent communities, and research literacy, and expand and sustain the equitable implementation of evidence-based health interventions, services and policies that impact vulnerable populations. While individual-level interventions seeking to provide support and facilitate resilience among those impacted by structural racism in their daily lives are important, we can and must do better. As the premier biomedical research organization in the country, the NIH is committed to supporting research that directly targets higher level/systemic levels of influence in all of their complexity in the service of achieving greater population health and health equity for impacted populations.

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## Compliance with Ethical Standards

**Conflict of Interest:** Dara R. Blachman-Demner and Nadra C. Tyus declare that they have no conflicts of interest.

**Human Rights:** This article does not contain any studies with human participants performed by any of the authors.

**Informed Consent:** This manuscript is a commentary and does not involve original data collection and therefore informed consent was therefore not required.

**Welfare of Animals:** This article does not contain any studies with animals performed by any of the authors.

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