

# RECOMMENDATIONS FOR ADDRESSING STRUCTURAL RACISM IN IMPLEMENTATION SCIENCE: A CALL TO THE FIELD

Rachel C. Shelton, ScD, MPH<sup>1</sup>;  
Prajakta Adsul, MBBS, MPH, PhD<sup>2</sup>;  
April Oh, PhD, MPH<sup>3</sup>

Implementation science (IS) has emerged in response to a striking research-to-practice gap, with the goal of accelerating and addressing the development, translation, and widespread uptake of evidence-based interventions (EBIs). Despite the promise of IS, critical gaps and opportunities remain within the field to explicitly facilitate health equity, particularly as they relate to the role of social determinants of health and structural racism. In this commentary, we propose recommendations for the field of IS to include structural racism as a more explicit focus of our work. First, we make the case for including structural racism as a construct and promote its measurement as a determinant within existing IS frameworks/models, laying the foundation for an empirical evidence base on mechanisms through which such factors influence inequitable adoption, implementation, and sustainability of EBIs. Second, we suggest considerations for both EBIs and implementation strategies that directly or indirectly address structural racism and impact health equity. Finally, we call for use of methods and approaches within IS that may be more appropriate for addressing structural racism at multiple ecological levels and clinical and community settings in which we conduct IS, including community-based participatory research and stakeholder engagement. We see these as opportunities to advance the focus on health equity within IS and conclude with a charge to the field to consider making structural racism and the dismantling of racism an explicit part of the IS research agenda. *Ethn Dis.* 2021;31(Suppl 1):357-364; doi:10.18865/ed.31.S1.357

**Keywords:** Racism, Structural Racism, Health Equity, Health Disparities, Implementation Science

## INTRODUCTION

### Racial Inequities, Health Equity, and Structural Racism

While investments in medical, social, and behavioral research have advanced population health, these benefits have not been equitably distributed.<sup>1</sup> Health inequities are socially constructed and unjust differences in health and well-being across groups; racial/ethnic inequities have been persistent and striking for many historically marginalized racial/ethnic groups in the United States (eg, African American/Black, Latinx, Hispanic, American Indian, Alaska Native, Native Hawaiian or other Pacific Islanders, Asian Americans), with greater morbidity and mortality consistently observed for many disease outcomes, even after adjusting for socioeconomic status (SES).<sup>2-4</sup> While racial and ethnic health inequities are not new, COVID-19 and recent rec-

ognition of police brutality and violence have amplified the existence of such longstanding inequities in communities of color and have brought global attention to these inequities as public health and societal crises.<sup>5</sup>

Causes of racial/ethnic health inequities are complex, multi-level, and rooted in social and structural determinants.<sup>6</sup> Increasingly, research and public health efforts have focused on the role of social determinants of health (SDOH) (eg, the conditions in which people are born, grow, live, work, and play, including SES, education, physical environment, housing, employment, social networks, health care access) in shaping patterns of health and disease.<sup>6,7</sup> Despite this focus on SDOH, the role of racism – as a structured system of oppression that shapes the inequitable distribution of SDOH, opportunities, power, and resources – has not always been explicit. There is a growing scholar-

<sup>1</sup> Department of Sociomedical Sciences, Columbia University Mailman School of Public Health, New York, NY

<sup>2</sup> Department of Medicine, University of New Mexico, Albuquerque, NM

<sup>3</sup> National Cancer Institute, Division of Cancer Control and Population Sciences, Rockville, MD

Address correspondence to Rachel Shelton, ScD, MPH, Department of Sociomedical Sciences, Columbia University Mailman School of Public Health, New York, NY 10032; rs3108@cumc.columbia.edu

ship that examines racism as one of the fundamental causes that underlies social inequality and operates at multiple levels to create and reinforce health inequities.<sup>2,4,8</sup> Most research on racism has focused on the health impact of discrimination as a psychosocial stressor; specifically, individual discrimination has been defined as differential treatment through social institutions and by individuals that results in inequities in opportunities and resources.<sup>4,9,10</sup> Other research has focused on cultural racism, or

---

*Despite this focus on the social determinants of health (SDOH), the role of racism – as a structured system of oppression that shapes the inequitable distribution of SDOH, opportunities, power, and resources – has not always been explicit.*

---

the stereotypes, norms, and biases that devalue non-White populations, which may trigger internalized racism and facilitate biases in health care.<sup>10</sup> The various manifestations of racism all have important implications for health. However, to make sustained,

fundamental shifts in advancing population health equity (ie, providing a fair and just opportunity for everyone to be as healthy as possible, and removing social, structural, and economic obstacles to eliminate health inequities and their determinants), explicit attention to identifying, naming, and addressing embedded and interlocking forms of racism at the structural and institutional levels is also critical.

Structural racism has been defined as “the totality of ways in which societies foster racial discrimination through mutually reinforcing systems of housing, education, employment, earnings, benefits, credit, media, health care, and criminal justice. These patterns and practices can reinforce discriminatory beliefs, values, and distribution of resources...”<sup>9</sup> Structural racism operates at interconnected levels within and across macro-level systems, social institutions, norms, ideologies, power dynamics, and policies that are historically rooted, but deeply entrenched and adaptive, thereby creating and reinforcing racial inequities through multiple visible and invisible pathways across interacting sectors.<sup>9,11</sup> While historical racial injustices like the Tuskegee study<sup>12</sup> have built a legacy of mistrust, particularly related to health and medical care, ongoing attention to structural racism would advance understanding of the ways in which present-day structural inequities continue to shape health inequities. In this article, while we refer to structural racism specifically, we include institutional racism in this conceptualization. We recognize that institutional racism may focus on racism within specific domains

or institutions while structural racism focuses on linkages across social institutions that shape and reinforce racial hierarchies.

## Implementation Science and Health Equity

Implementation science (IS) has emerged in the past decades to address the well-documented gap between research and practice (eg, what is routinely delivered in real-world community and clinical settings). IS provides frameworks, methods, and strategies to promote the routine adoption, implementation, and sustainability of evidence-based interventions (EBIs), policies, programs, and treatments (referred to collectively here as EBIs)<sup>13</sup> across a range of real world clinical and community settings and diverse populations. The application of these methods and frameworks holds great promise to promote racial equity across settings and populations experiencing structural barriers to health. While much of the focus has been on cultural and settings-related adaptation of EBIs to reduce racial/ethnic health disparities,<sup>13</sup> the IS field has an explicit opportunity to advance equity by including structural racism as part of the broader context in which health inequities are embedded, and to consider it a determinant of equitable implementation of EBIs and implementation strategies.<sup>14,15</sup>

To move toward a social justice perspective to facilitate health equity requires explicit and methodological consideration of structural determinants of health like structural racism, which are central to the experiences of many historically marginalized racial/ethnic groups.<sup>7,8,16</sup> In parallel with ob-

servational studies on the impact of structural racism on health, structural racism has potential implications for inequitable implementation (eg, inequitable adoption, use and sustainability of EBIs) across diverse settings and populations. Research examining the role of structural racism on implementation is critical to ensuring IS does not inadvertently reinforce or exacerbate disparities by using approaches that do not reflect the fundamental determinants that shape inequities (eg, racism) or by conducting research that excludes less-resourced or disadvantaged settings/populations.<sup>14</sup> In this article, we challenge the IS field to work closely with stake-

holders and research teams to actively consider structural racism in identifying research questions, frameworks, methods, and strategies, and propose three key recommendations for the field (highlighted visually in Figure 1).

### RECOMMENDATION 1

#### **Include structural racism in IS frameworks, models, and related measures for research focused on racial/ethnic health disparities and health equity**

There is growing recognition that advancing health equity requires understanding of the multi-level

(policy, community, organizational, provider, and individual) context in which health disparities are embedded.<sup>6,17</sup> Similarly, IS recognizes the role of dynamic, multi-level context in shaping the adoption, implementation, and sustainability of EBIs.<sup>13</sup> This perspective is reflected in the conceptualization of context (eg, individual, implementer, organizational, community, policy) in many IS frameworks.<sup>13</sup> Despite this focus on context and inclusion of health equity in recent frameworks (eg, Transcreation Framework,<sup>17</sup> Health Equity Implementation Framework<sup>18</sup>), explicit inclusion of structural racism has largely been missing in stud-

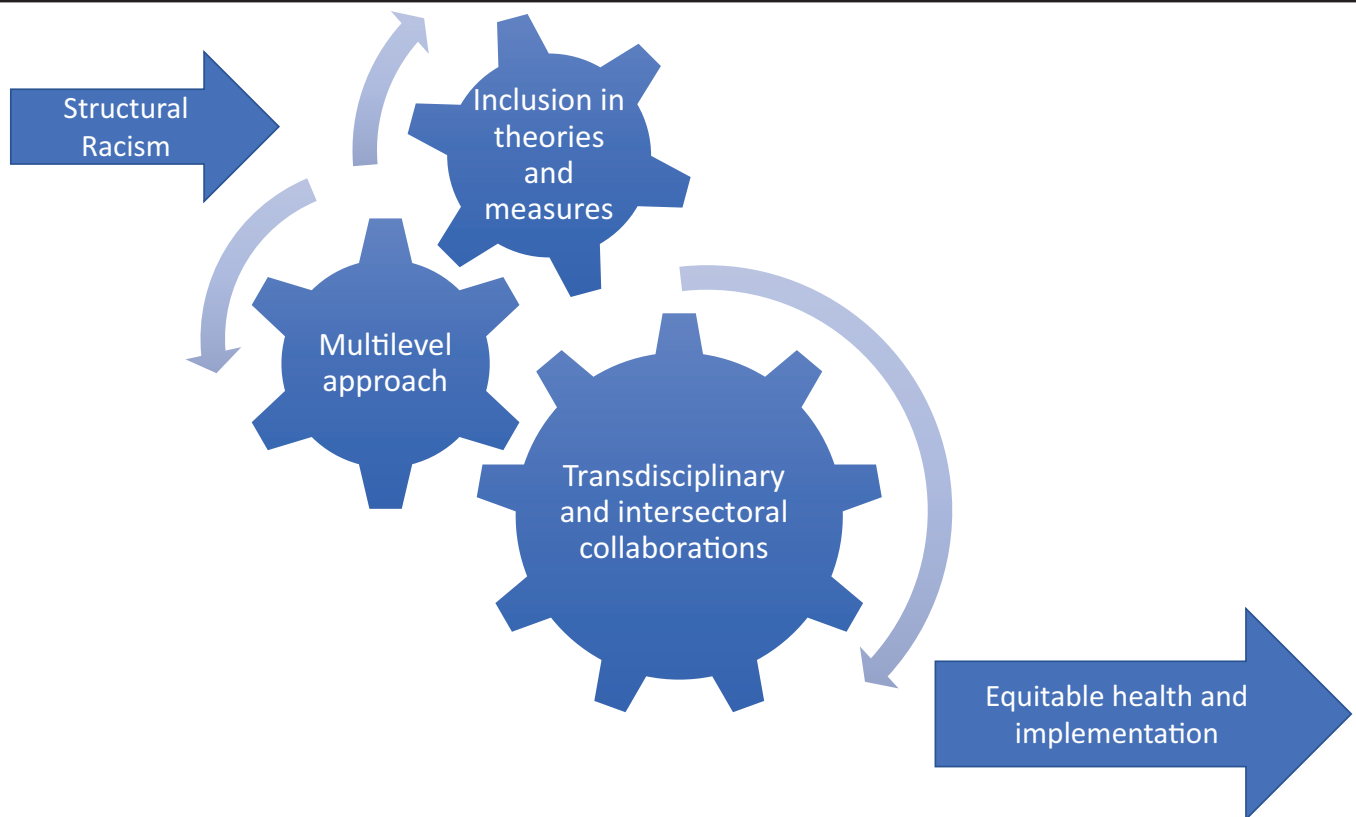


Figure 1. Key recommendations for the Implementation Science field to actively consider structural racism in research questions, frameworks, methods, measures, and strategies for health equity studies.

ies among racially/ethnically diverse populations within IS. Without inclusion of structural racism as part of context, the IS field is at risk of exacerbating health disparities, inadvertently reinforcing racist practices and unequal power dynamics, and missing opportunities to dismantle racism in public health and health care.

Structural racism, in the form of the legacy of residential segregation, has contributed to the inequitable health care quality and access to/use of EBIs across different settings, systems, and populations.<sup>9</sup> Health care infrastructure, resources, and providers are inequitably distributed across neighborhoods and institutions by race.<sup>4,9</sup> In combination with intergenerational drag (ie, the racist experiences, disadvantages, or historical traumas of one generation may be cumulative with implications for future generations),<sup>11</sup> structural racism can function as a contextual factor that may influence adoption, acceptability, appropriateness, fidelity, and equitable reach of the EBI as well as implementation and sustainability of EBIs across levels. Further, because structural racism is an ecologic exposure that some benefit from and some are harmed by, it is important to acknowledge the resulting power dynamics that may be reinforced by structural racism and can threaten acceptability, implementation, and sustainability of EBIs. As such, for health equity focused IS studies, we call for inclusion of structural racism as a determinant in our IS frameworks and as a part of a contextual inquiry or formative/planning assessment to understand current and historical influences of racism on implementation.

While there has been initial consideration and examples of tailoring of IS frameworks for historically marginalized groups,<sup>18,19</sup> much remains to be done to explicitly include structural racism in these frameworks. The field can look to recent health equity focused frameworks (eg, National Institute on Minority Health and Health Disparities [NIMHD] Research Framework<sup>20</sup>) that have included consideration of structural racism to inform IS research and practice. The Public Health Critical Race Praxis (PHCRP),<sup>16</sup> grounded in Critical Race Theory, provides an approach for researchers to systematically assess and address racism-related factors that may inadvertently influence how research is conducted. Consistent with recent work,<sup>21</sup> there is a call to researchers to continually assess any power differentials between researchers and racial/ethnic minority communities. PHCRP encourages critical recognition and research team reflection that racism may underlay assumptions, methods and theories, and helps facilitate a race consciousness.<sup>2,16</sup>

It is critical that we use metrics and measures that align with the inclusion of structural racism in our frameworks. Measurement of structural racism is contentious and complex; given that most measures assess individual-level discrimination, there is more work needed on the development and validation of measures to adequately quantify the extent to which structural racism exists within a community, particularly given that measurement may differ and depend on spatiotemporal scale, historical context, and the domain where

it occurs.<sup>9,22</sup> A growing number of measures use administrative data to operationalize structural racism representing neighborhood segregation, political participation, and redlining/housing discrimination (eg, State Racism Index),<sup>22,23</sup> as well as self-report measures of perceptions of structural racism (eg, Perceived Structural Racism Scale)<sup>2,23</sup> and institutional racism (eg, Major Experiences of Discrimination Scale, Perceived Racial Composition Scale that assess racism within domains like housing, workplace).

In the context of IS studies, existing measures of structural racism may be useful for selection of settings and determining the need for resources or delivery of EBIs within communities and specific geographic areas with higher levels of structural racism. However, we also recognize there is a need for further development, specification, and validation of pragmatic measures that are applicable in the context of IS studies and will likely require developing measures that capture relevant domains of structural racism that reflect community context and other health care or institutional domains.

Qualitative data collection may be useful in deepening understanding of structural racism and its impact on the lived experiences and daily lives of those impacted, within the context of a specific setting, historical context, and community. This information may help inform measure development in this area or identify mechanisms that reinforce racism and could be opportunities for development and implementation of strategies to directly dismantle racism.

Finally, enhancing measurement

of structural racism moving forward is a priority, as this data will enable researchers to empirically examine the role of structural racism, inform where and how to intervene, test potential mechanisms and impact on inequities, and determine whether implementation of EBIs or implementation strategies could reduce forms of racism.

## RECOMMENDATION 2

### **Use a multi-level approach for selecting, developing, adapting, and implementing EBIs and implementation strategies to address structural racism and impact health inequities**

Not all EBIs have been developed for, or evaluated with, health equity in mind, or are representative of populations or settings affected by historical or ongoing structural racism.<sup>14</sup> Historically, many interventions have been developed at the individual-level, which could potentially exacerbate health inequities, in contrast to multi-level or structural interventions.<sup>6,7</sup> To address health inequities and their root causes, including intersecting systems of structural racism, attention must be placed on the development or adaptation, implementation, and evaluation of multi-level EBIs. In doing so, researchers must consider answers to these questions: 1) At what level would EBIs, if implemented effectively, explicitly reduce health inequities and promote health equity? 2) How do we consider/understand the operationalization of structural racism at each level? and 3)

If implemented effectively, do we directly or indirectly address structural racism? Given the interlocking nature of racism and complexity of health inequities, asking these questions brings the field closer to addressing upstream social and structural factors to create sustainable change.<sup>4,6,20</sup>

While the civil rights policies of the 1960s are prime examples of structural policies that improved health, socioeconomic opportunities and living conditions, in general, there has been a dearth of evidence for interventions focused on addressing racial/ethnic inequities, and structural racism in particular.<sup>4</sup> Implementation science plays a critical role in examination of policy implementation and rapid assessment to evaluate if policy goals are achieving equity. This work, while complex, is attainable, and comprehensive reviews of explicit anti-racism efforts<sup>2</sup> and intersectoral interventions and policies<sup>4,9,24</sup> show promise to reduce the burden of structural racism.

We refer readers to these reviews and recommend the IS field may consider prioritizing them in future study. At the institutional level within health systems, interventions addressing forms of institutional racism are imperative. For example, Cykert and colleagues<sup>25</sup> conducted a pragmatic quality improvement (QI) intervention trial across five cancer centers (ACCURE: The Accountability for Cancer Care through Undoing Racism and Equity) to address differential decision-making by race that was occurring among clinicians. Informed by an academic-community partnership, researchers found that a real-time EHR registry to signal unmet care/

missed appointments combined with race-specific measurement and clinical feedback on cancer treatments, and nurse navigation, improved completion of treatment for all breast and lung cancer patients and reduced health disparities between Black and White patients.<sup>25</sup> It is critical that, as the evidence-base for interventions to address structural racism and racial inequities grows, a database is publicly available; a fitting place could be an online ecosystem for resources/EBIs addressing racial inequities such as HDPulse by NIMHD (<https://hdpulse.nimhd.nih.gov/>). Future work can ensure equitable access to these resources and practitioner-grounded approaches to reduce inequalities in power and decision making.

Similar considerations apply when researchers identify strategies to implement EBIs in settings that experience health inequities. The field will need to examine if the existing taxonomy of implementation strategies should adapt or expand to include strategies oriented toward health equity outcomes and/or structural racism (eg, building equitable teams and trust; resource and power sharing; data visualization practices).<sup>13</sup> Came & Griffith<sup>8</sup> propose a framework to address public health inequities and inform the training and support of allies in applying an anti-racist framework (eg, engaging in institutional change and collective action), with five core elements (reflexive relational praxis, structural power analysis, socio-political education, monitoring/evaluation, and systems change approaches). These approaches are examples of what could be tested as an implemen-

tation strategy in future research.

Browne et al<sup>26</sup> used multi-level implementation strategies at the staff and organizational levels (staff education/training; organizational integration/tailoring, practice facilitation) to build capacity and support changes within primary care to enhance the provision of equity-oriented care in Canada (EQUIP; Research to Equip Primary Healthcare for Equity). Staff were trained on cultural safety to explicitly address power inequities, racism, and historical injustices. Implementation strategies that train clinicians and implementers in structural competency and cultural safety to recognize forms of structural racism could also be explicitly tested in future IS studies.<sup>2,8</sup>

Finally, it is important to note that training and education at the institutional level are not sufficient on their own to address structural racism; however, in light of power and resources that individuals hold within institutions, including decision-making to influence policy, we see anti-racism training and education as one important strategy that comprises a broader multi-level strategy.

### RECOMMENDATION 3

#### **Apply transdisciplinary and intersectoral collaborations and engagement as essential IS methods to address structural racism and promote health equity**

Given that structural racism is a trans-sector phenomenon, multifaceted, and affects and is affected by multiple socio-ecological levels, we

recommend methods and approaches within IS that include intersectoral collaborations, community-engaged partnerships, and a transdisciplinary research lens. Methods may include rapid ethnography, academic/community partnerships, and policymaker engagement.<sup>13</sup> Approaches emphasizing stakeholder partnership are essential to identifying and ad-

---

*To progress toward achieving health equity, it is imperative that Implementation Science incorporates a focus on understanding and addressing structural racism as one of the fundamental drivers of social and health inequities.*

---

dress structural racism as well as increasing the likelihood that IS research findings are impactful, equitably delivered, and sustained over time.

Community-based participatory research (CBPR) and authentic stakeholder engagement and partnership are foundational to health equity research and IS (eg, participatory implementation science,<sup>13</sup> Transcreation Framework<sup>17</sup>) and are potential strat-

egies for dismantling racism and addressing racial inequities.<sup>27</sup> CBPR involves systematic and shared meaningful involvement of community in decision-making and determining priorities, bi-directional learning, capacity building, mutual benefit and trust, and necessitates the transparent and equitable distribution of power and resources.<sup>28</sup> Meaningfully involving those who experience structural racism and inequities across all research stages will increase relevance and acceptability of the EBIs and implementation strategies to address structural determinants, and ultimately, facilitate the likelihood of equitable adoption, implementation, and sustainability.<sup>26</sup> An excellent example is the previously funded Community Partners in Care initiative where, using CBPR and multi-stakeholder coalitions, researchers and community partners broadened definitions of treatment to include structural factors such as homelessness, unemployment, and incarceration for populations experiencing structural and health inequities.<sup>29</sup>

Within IS, a range of study designs may be useful for studying structural racism. Importantly, variable types of evidence are valued within IS, with recognition of the importance of both internal and external validity. To that end, traditional randomized controlled trials that focus on IS and equity may not be possible due to ethical, scientific (eg, contamination) or feasibility (eg, resource) concerns, and stepped wedge designs, interrupted time series, and other alternative designs are increasingly used.<sup>13</sup> Pragmatic and hybrid effectiveness-implementation trials may balance

study of effectiveness in real-world contexts with limited resources, with a focus on external validity.<sup>13</sup>

To better capture intersectoral approaches to address health equity and structural racism, mixed-methods approaches may be beneficial.<sup>13</sup> Mixed-methods approaches that include qualitative inquiry are ideal for understanding dynamic, complex processes and determinants across multi-level contexts<sup>13</sup>; they provide insight into the feasibility, appropriateness, and mechanisms of proposed EBIs and strategies, perspectives of those impacted by structural racism, and identify unintended consequences. Quantitative approaches such as dynamic simulation modeling (eg, system dynamic modeling, agent-based modeling) can be used to capture complex interactions between determinants of health inequities and inequitable implementation,<sup>7,14</sup> including structural racism. Modeling the impact of specific intervention and implementation strategies may help identify leverage points, costs, and prioritize programs/strategies in resource-limited settings.<sup>14</sup> Adaptive approaches (eg, Multiphase Optimizing Strategy and Sequential Multiple Assignment Randomized Trial designs; MOST and SMART designs)<sup>14,30</sup> and rapid cycle testing can inform the variable impact and optimal delivery across settings/populations, and prioritize strategies on acceptability and feasibility.

Finally, a transdisciplinary research lens can support measure development and data infrastructure for a robust, continuous evaluation of health and social indicators impacted

by structural racism. Identification of a shared data system that includes contextual and cost data will help in understanding the resources needed for implementation while also recognizing the role of structural racism.

## CONCLUSION

Ongoing research documents the pervasive nature of structural racism and its impact on health inequities<sup>31</sup> across multiple health and social sectors. Yet opportunities to examine and address structural racism in other sectors, like immigration and incarceration, remain. To progress toward achieving health equity, it is imperative that Implementation Science incorporates a focus on understanding and addressing structural racism as one of the fundamental drivers of social and health inequities. Although this article focuses on racial/ethnic inequities in the United States, we recognize intersectionality<sup>31</sup> and that discrimination exists by many social dimensions (eg, geography, sexual orientation, disability, gender, immigration, etc.) and globally. As such, we encourage IS researchers to also consider the impact of other forms of structural racism. Structural racism intersects with and shapes other manifestations of racism and discrimination (eg, individual, internalized, cultural discrimination)<sup>4</sup>; whenever possible, they should be studied in combination. We urge fellow researchers to consider and expand these recommendations while joining efforts to explicitly address structural racism and the threat it poses to health for all of society.

## ACKNOWLEDGEMENTS

The authors would like to thank Laura Brotzman, Savannah Alexander, and Matthew Lee for their assistance in reviewing and preparing this manuscript.

This manuscript was prepared or accomplished by Dr. April Oh in her personal capacity. The opinions expressed in this article are the author's own and do not reflect the view of the National Institutes of Health, the Department of Health and Human Services, or the United States government.

## REFERENCES

1. Colditz GA, Emmons KM. Accelerating the pace of cancer prevention – right now. *Cancer Prev Res (Phila)*. 2018;11(4):171-184. <https://doi.org/10.1158/1940-6207.CAPR-17-0282> PMID:29519885
2. Ford CL, Griffith DM, Bruce MA, Gilbert KL, eds. *Racism: Science & Tools for the Public Health Professional*. Washington, DC: American Public Health Association; 2019. <https://doi.org/10.2105/9780875533049>
3. Williams DR. Miles to go before we sleep: racial inequities in health. *J Health Soc Behav*. 2012;53(3):279-295. <https://doi.org/10.1177/0022146512455804> PMID:22940811
4. Williams DR, Lawrence JA, Davis BA. Racism and health: evidence and needed research. *Annu Rev Public Health*. 2019;40(1):105-125. <https://doi.org/10.1146/annurev-publ-health-040218-043750> PMID:30601726
5. Ford CL. Commentary: Addressing inequities in the era of COVID-19: the pandemic and the urgent need for Critical Race Theory. *Fam Community Health*. 2020;43(3):184-186. <https://doi.org/10.1097/FCH.0000000000000266> PMID:32427666
6. Agurs-Collins T, Persky S, Paskett ED, et al. Designing and assessing multilevel interventions to improve minority health and reduce health disparities. *Am J Public Health*. 2019;109(S1):S86-S93. <https://doi.org/10.2105/AJPH.2018.304730> PMID:30699029
7. Brown AF, Ma GX, Miranda J, et al. Structural interventions to reduce and eliminate health disparities. *Am J Public Health*. 2019;109(S1):S72-S78. <https://doi.org/10.2105/AJPH.2018.304844> PMID:30699019
8. Came H, Griffith D. Tackling racism as a “wicked” public health problem: enabling allies in anti-racism praxis. *Soc Sci Med*. 2018;199:181-188. <https://doi.org/10.1016/j.socscimed.2017.03.028> PMID:28342562
9. Bailey ZD, Krieger N, Agénor M, Graves J, Linos N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. *Lancet*. 2017;389(10077):1453-1463. <https://doi.org/10.1016/S0140->

## Structural Racism and Implementation Science - Shelton et al

- 6736(17)30569-X PMID:28402827
10. Williams DR, Lawrence JA, Davis BA, Vu C. Understanding how discrimination can affect health. *Health Serv Res.* 2019;54(S2) (suppl 2):1374-1388. <https://doi-org.ezproxy.cul.columbia.edu/10.1111/1475-6773.13222> <https://doi.org/10.1111/1475-6773.13222> PMID:31663121
  11. Gee GC, Ford CL. Structural racism and health inequities: old issues, new directions. *Du Bois Rev.* 2011;8(1):115-132. <https://doi.org/10.1017/S1742058X11000130> PMID:25632292
  12. Centers for Disease Control and Prevention. The Tuskegee Timeline. Published March 2, 2020. Last accessed January 4, 2021 from <https://www.cdc.gov/tuskegee/timeline.htm>.
  13. Brownson R, Colditz G, Proctor E. *Dissemination and Implementation Research in Health: Translating Science to Practice*. 2nd ed. New York, NY: Oxford University Press; 2018.
  14. McNulty M, Smith JD, Villamar J, et al. Implementation research methodologies for achieving scientific equity and health equity. *Ethn Dis.* 2019;29(suppl 1):83-92. <https://doi.org/10.18865/ed.29.S1.83> PMID:30906154
  15. Chinman M, Woodward EN, Curran GM, Hausmann LR. Harnessing implementation science to increase the impact of health disparity research. *Med Care.* 2017;55:S16-S23. <https://doi.org/10.1097/MLR.0000000000000769>
  16. Ford CL, Airhihenbuwa CO. The public health critical race methodology: praxis for antiracism research. *Soc Sci Med.* 2010;71(8):1390-1398. <https://doi.org/10.1016/j.socscimed.2010.07.030> PMID:20822840
  17. Nápoles AM, Stewart AL. Transcreation: an implementation science framework for community-engaged behavioral interventions to reduce health disparities. *BMC Health Serv Res.* 2018;18(1):710. <https://doi.org/10.1186/s12913-018-3521-z> PMID:30208873
  18. Woodward EN, Matthieu MM, Uchendu US, Rogal S, Kirchner JE. The health equity implementation framework: proposal and preliminary study of hepatitis C virus treatment. *Implement Sci.* 2019;14(1):26. <http://dx.doi.org.ezproxy.cul.columbia.edu/10.1186/s13012-019-0861-y> <https://doi.org/10.1186/s13012-019-0861-y> PMID:30866982
  19. Bendall CL, Wilson DM, Frison KR, Inskip JA, Camp PG. A partnership for Indigenous knowledge translation: implementation of a First Nations community COPD screening day. *Can J Respir Ther.* 2016;52(4):105-109. PMID:30996618
  20. Alvidrez J, Castille D, Laude-Sharp M, Rosario A, Tabor D. The National Institute on Minority Health and Health Disparities Research Framework. *Am J Public Health.* 2019;109(S1):S16-S20. <https://doi.org/10.2105/AJPH.2018.304883> PMID:30699025
  21. Hardeman RR, Medina EM, Kozhiman-nil KB. Structural racism and supporting Black lives – the role of health professionals. *N Engl J Med.* 2016;375(22):2113-2115. <https://doi.org/10.1056/NEJMp1609535> PMID:27732126
  22. Groos M, Wallace M, Hardeman R, Theall KP. Measuring inequity: a systematic review of methods used to quantify structural racism. *J Health Dispar Res Pract.* 2018;11(2):190-206.
  23. Cross RI, Ford CL, Griffith DM, Bruce MA, Gilbert KL. Appendix B: Selected Measures of Racism. In: *Racism: Science & Tools for the Public Health Professional*. Washington, DC: American Public Health Association; 2019. Last accessed January 4, 2021 from <https://doi.org/10.2105/9780875533049appB>
  24. Williams DR, Cooper LA. Reducing racial inequities in health: using what we already know to take action. *Int J Environ Res Public Health.* 2019;16(4):606. <https://doi.org/10.3390/ijerph16040606> PMID:30791452
  25. Cykert S, Eng E, Manning MA, et al. A multi-faceted intervention aimed at Black-White disparities in the treatment of early stage cancers: The ACCURE Pragmatic Quality Improvement trial. *J Natl Med Assoc.* 2020;112(5):468-477. <https://doi.org/10.1016/j.jnma.2019.03.001> PMID:30928088
  26. Browne AJ, Varcoe C, Ford-Gilboe M, Wathen CN; EQUIP Research Team. EQUIP Healthcare: an overview of a multi-component intervention to enhance equity-oriented care in primary health care settings. *Int J Equity Health.* 2015;14(1):152. <https://doi.org/10.1186/s12939-015-0271-y> PMID:26694168
  27. Yonas MA, Jones N, Eng E, et al. The art and science of integrating Undoing Racism with CBPR: challenges of pursuing NIH funding to investigate cancer care and racial equity. *J Urban Health.* 2006;83(6):1004-1012. <https://doi.org/10.1007/s11524-006-9114-x> PMID:17072760
  28. Wallerstein N, Duran B. Community-based participatory research contributions to intervention research: the intersection of science and practice to improve health equity. *Am J Public Health.* 2010;100(S1) (suppl 1):S40-S46. <https://doi.org/10.2105/AJPH.2009.184036> PMID:20147663
  29. Chung B, Jones L, Dixon EL, Miranda J, Wells K. Community partners in care steering council. Using a community partnered participatory research approach to implement a randomized controlled trial: planning the design of community partners in care. *J Health Care Poor Underserved.* 2010;21(3):780. <https://doi.org/10.1353/hpu.0.0345> PMID:20693725
  30. Collins LM, Murphy SA, Strecher V. The multiphase optimization strategy (MOST) and the sequential multiple assignment randomized trial (SMART): new methods for more potent eHealth interventions. *Am J Prev Med.* 2007;32(5)(suppl):S112-S118. <https://doi.org/10.1016/j.amepre.2007.01.022> PMID:17466815
  31. Bowleg L. When Black+ lesbian+ woman≠ Black lesbian woman: the methodological challenges of qualitative and quantitative intersectionality research. *Sex Roles.* 2008;59(5-6):312-325. <https://doi.org/10.1007/s11199-008-9400-z>