



# Measuring institutional and structural racism in research on adolescence and developmental science

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## Abstract

Dismantling racism and oppression in adolescence requires sound measurement and rigorous methods. In this commentary, we discuss the measurement of institutional and structural racism and approaches to operationalizing structures and systems in adolescent research. Drawing on a recent framework for the conceptualization, measurement, and analysis of institutional racism and health (Needham et al., *Journal of Racial and Ethnic Health Disparities*, in press), we highlight several considerations for measuring institutional and structural racism. These include definitional issues, the tension between individual- and area-level measures, questions of timing, and matters of design and analysis. We conclude with suggestions to address gaps in existing literature and call for transdisciplinary training, collaboration, and partnership to promote the healthy development of Black and Indigenous People of Color (BIPOC) adolescents and young people.

## KEYWORDS

adolescence, BIPOC, institutional racism, measurement, structural racism, youth

In 2021, The National Institutes of Health issued a Request for Applications titled: “Understanding and Addressing the Impact of Structural Racism and Discrimination (SRD) on Minority Health and Health Disparities” (RFA-MD-21-004). Consistent with theoretical formulations of racism and health that highlight institutional and cultural racism as fundamental causes of health inequalities (Williams & Mohammed, 2013), and in alignment with a “recent surge of interest” in structural racism (Riley, 2018, p. 357), the RFA acknowledged a growing societal recognition that SRD extends beyond “individual self-reported perceptions and experiences” and is embedded in “historical societal, institutional, organizational, and government structures.” The call posed a challenge to developmental and psychological scientists who have long struggled with how best to measure structural racism; yet, important clues about how to operationalize structural racism could be found in public health, sociology, medicine, and related fields.

A recent systematic literature review in the *Journal of Racial and Ethnic Health Disparities* by Needham et al.

(in press) provides a conceptual model and framework for measuring institutional and, by extension, structural racism (see also Groos et al., 2018). The review defines institutional racism as “racially discriminatory policies and practices embedded in social institutions such as the government, the economy, the education system, the healthcare system, religious institutions, the family, and the media.” Institutional racism becomes structural when it “operates as a system across multiple interconnected institutions.” These definitions are critical because they suggest that at the heart of measuring institutional and structural racism are *policies* and *practices*. Over time, policies and practices that likely have impacted Black, Indigenous, and People of Color (BIPOC) adolescents, directly or indirectly, include Reconstruction Era Black Codes, Jim Crow policies, the Indian Civilization Act of 1819, the internment of Japanese Americans, “Muslim bans,” voting restrictions (e.g., voter ID laws), and attacks on critical race theory. If institutional racism is defined as policies and practices, then a good measure of institutional (and structural) racism might be the presence or absence of

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specific policies or practices or, perhaps, the extent to which individuals are exposed to those policies and practices.

While “policies and practices” is one way to capture and measure institutional and structural racism, Needham et al. note that few studies operationalize, analyze, or mention specific policy. Rather, studies are most likely to use “proxy” measures. A set of commonly used proxy indicators include Black/White disparities, often indexed as ratios or proportions of Blacks:Whites in employment status (labor participation), educational attainment, economics (above/below poverty line, median household income), incarceration, sentencing, capital punishment, school disciplinary practices, and political participation and representation (Chambers et al., 2018; Mesic et al., 2018; Pabayo et al., 2019). These disparities are considered representative indicators of SRD because they reflect the legacy of slavery, racial oppression, and the exclusion of Blacks from resources and mobility continued through institutional policies and practices (e.g., War on Drugs) that advantage Whites over Blacks (Lukachko et al., 2014). These and other practices (e.g., disproportionate traffic/police stops; see Del Toro et al., 2022) limit the access of BIPOC youth to economic and health-promoting resources. For example, incarceration has been linked to health conditions for not only incarcerated persons but also their family members, including their children (Foster & Hagan, 2015; Porter & King, 2015; Wildeman & Wang, 2017).

The distinction between measurement of actual policies and practices and proxy measures has been debated by scholars. On the one hand, proxy measures like residential segregation are measures of the *result* of racist policies (e.g., redlining); on the other hand, proxy measures may not directly capture policies or practices, but reflect the legacy of institutional policies and practices. We believe there is value in both measures and concur with Needham et al.'s recommendation that, even if exposure is not tied to a specific policy, researchers should situate the focal measure(s) they examine within the context of past and present policy.

A second consideration in how best to measure institutional and structural racism is whether to examine single or multiple domains (e.g., criminal justice, economics and labor, education, healthcare, housing, residential segregation, immigration, and political participation and representation). While there are advantages to both approaches, examining multiple domains of racism is most in alignment with the definition and conceptual framing of structural racism, which cuts across domains and institutions. Needham et al. also suggest consideration of using single indicators (e.g., presence/absence of a drug policy, drug-related arrests after implementation of a drug policy) versus multiple indicators across multiple domains. We agree that single indicators may be most appropriate for “trying to isolate the effect of a specific policy or practice,” but using multiple indicators may best capture the comprehensive nature and multidimensionality of structural racism and its impact.

With increased interest in measuring institutional and structural racism, scholars have questioned the use of “area-level” (e.g., metropolitan area, state, county, and

census tract) versus individual-level measures of institutional racism (i.e., asking individuals to assess exposure to institutional or structural racism). Examples of area-level measures include measures of metropolitan residential segregation (Yu et al., 2021), census block residential *integration* (White et al., 2022), state-level income inequality (Wallace et al., 2015), measures of mortgage discrimination and redlining (Lynch et al., 2021), area specific “n-word Google searches” (Chae et al., 2018), state-level police killings (Mesic et al., 2018), and, as mentioned previously, Black-White inequities in various domains (e.g., education and criminal justice).

A second approach employed in some studies is to ask individuals to assess their own experiences of institutional and/or cultural racism (Cooper et al., 2022). The Index of Race-Related Stress (IRRS; Utsey & Ponterotto, 1996), which assesses the level of stress evoked by different types and levels of racism, is one such measure. While Needham et al. strongly recommend against individual measures of institutional and structural racism, the issue of area- vs. individual-level measures is a complicated one. While there are limitations of such measures (Neblett, 2019), it is important to recognize that individual views of the impact of racism and structural racism do not operate in isolation. In fact, it may even be that individual perceptions of exposure to institutional and cultural racism weigh heavily on adolescents' health and development. Hope et al. (2021) found that Black adolescents experience psychological and physiological anticipatory stress in response to individual, institutional, and cultural racism (as indexed by the IRRS). This psychological and physiological response indicates that there is a unique impact of the awareness of institutional racism for Black adolescents that may confer additional vulnerability. Theoretically, and methodologically, it is imperative to understand the compounded stress of the multitude of institutions impacting BIPOC adolescents while simultaneously examining the institutions themselves (Trawalter et al., 2020).

Another set of questions likely to be of particular interest to adolescent researchers and developmental scientists are those of timing. Drawing on the discussion by Needham et al., we pose the following questions for future investigation: What is the impact of specific policies during adolescence and across the life course? Can historic measures (e.g., “administrative data on school quality from the Jim Crow South”) that occur during a particular sensitive period (e.g., fetal development, see Hilmert et al., 2014) or developmental transition such as puberty (Carter & Flewellen, 2022) or the transition to adulthood predict subsequent health and development (e.g., later life cognitive functioning)? Do Jim Crow and other historic policies have the same impact today that they have had previously? How might a specific wave of immigration influence the impact of a specific policy on development? Finally, given the evolution and cumulative and compounding effects of institutional and structural racism across generations (e.g., Jim Crow → residential segregation → separate but equal), are older individuals more likely

to be impacted, and are intergenerational measures needed to capture the full impact of historical policies and practices? These kinds of questions, paired with longitudinal data, have significant potential to advance our understanding of the impacts of institutional and structural racism over time.

A final consideration raised by Needham et al. is study design and analysis. Quasi-experimental designs might be used, for example, to take advantage of a policy change. As an example, one approach might compare outcomes (e.g., mental health) 12 months before and after a shift in policy (e.g., banning critical race theory). A second approach might be what Needham et al. describe as representing “a counterfactual comparison” of what would have happened if the “intervention” or precipitating event had not occurred. In a study of birth outcomes among infants born to Latina mothers after a major immigration raid, Novak et al. (2017) compared risk of low birth weight among infants born after the raid to those born before the raid. A study by Samari et al. (2020) compared the monthly odds of preterm births to women from travel ban countries after the 2017 travel ban on individuals from Muslim majority countries to the number expected had the ban not been implemented. These counterfactual approaches could be similarly adapted to examine the developmental impact of policy shifts and events (e.g., state-level police killings; Bor et al., 2018) resulting from policy shifts or racism exposures in BIPOC adolescents.

Analytically, Needham et al. suggest the use of confirmatory factor analysis and latent class/profile analysis (LCA/LPA) to examine the systemic nature of multiple domains of institutional and structural racism. The use of a composite score or index is not uncommon in investigations of institutional and structural racism (Berg et al., 2021; English et al., 2022; Mesic et al., 2018), but the use of LCA/LPA as a broad approach is not without limitations (Weller et al., 2020). We recommend that latent profile analysis be explored and employed as a data-reduction technique to help navigate a range of possible multidomain, multidimensional institutional or structural racism profiles that approximate the experiences of BIPOC adolescents.

Another analytic approach encouraged by the authors in comparative studies is to examine race and ethnicity as moderators “to provide evidence for differential effects of policy.” While this approach may have some value, race/ethnicity moderation analyses should never be the end goal. These approaches, at best, document differences; at worst, they run the risk of reinforcing deficit perspectives and contributing to scientific racism. Studies should not only document differences but also carefully and thoughtfully engage the reasons for those differences and the mechanisms underlying observed differences. This is a critical distinction to lay the foundation for using research to dismantle racism.

## CONCLUDING COMMENTS

We conclude our commentary with three points. First, the majority of institutional and structural racism studies focus

on adults and on prenatal, birth, and infant outcomes; thus, there is a clear need to apply what can be gleaned from available studies to adolescent research. As we have noted, questions of timing are certainly applicable to the developmental period of adolescence, which spans a broad age range during a time when perceptions and awareness of changes in contexts and environments and one's racial and ethnic identity are rapidly changing. Another inclusion gap pertains to the predominant focus in the literature on Black-White disparities. While not exclusive and there is a significant body of work examining structural indicators in immigrant groups and populations, there remains a need to consider whether measures that have been employed in studies of Black and White populations might also be suitable for studying other BIPOC youth who experience similar yet unique racialized contexts (e.g., Indigenous youth, see Uink et al., 2022). Within racial and panethnic groups, within-group variation must also be explored. Experiences of institutional and structural racism can vary within the same group, and the impact of policies may vary within a racial or ethnic group, for example, as a function of differential enforcement across states or policy differences across states for the same group (Needham et al., *in press*). These nuances are important to consider because they help to recognize the complexity with which institutional and structural racism shape development.

Second, our commentary focused largely on institutional racism, and institutional racism within the context of structural racism; yet, there are other dimensions of structural racism that represent uncharted territory. Given that cultural racism, as indexed by worldviews suggesting the superiority of Whites relative to all other groups in language, symbols and media, is a powerful component of structural racism, important conversations are needed regarding not only institutional but also cultural racism (Gibson et al., 2022). We have recently explored the possibility of using publicly available data furnished by the Southern Poverty Law Center, which includes state-, county-, and city-level information regarding cultural symbols (e.g., location of Confederate statues, information reflecting the names of highways, parks, and buildings) as proxies for cultural racism. We have also considered how the use of imagery depicting police violence and other forms of nonviolent distress with Black actors (Sosoo et al., *in press*) might tap into both vicarious and cultural racism experiences. Capturing and quantifying cultural racism (as well as institutional racism) is critical to understanding the insidious nature of structural racism. In the absence of considering the “full picture,” BIPOC adolescents will have the added burden of proving that the system is rigged against them.

Finally, we wish to note that disciplinary silos and academic inertia have operated to the detriment of racism research in the study of adolescence and in developmental science. It is remarkable that while some disciplines like psychology are less advanced in the measurement of institutional and structural racism, public health, its subdisciplines (e.g., epidemiology), and other related fields have,

even with imperfect measures, been doing this work for some time. This scholarship can be found in some interdisciplinary outlets (e.g., *Social Science & Medicine*), but more is needed. The discrepancy across disciplines highlights a critical need for transdisciplinary training, fertilization, and collaboration. As a field, we should resist the urge to remain in our own comfort zones and instead read racism scholarship across disciplines and learn from and engage in meaningful and mutually reinforcing partnerships to maximize the study of racism, development, and health. In the vein of more inter- and transdisciplinary research, adolescent researchers and developmental scientists in training would stand to benefit from training in, census data, institutional practices, geocoding, and policy analyses, to name a few. Training can lay the foundation for better measurement of a complex concept, improve science, and help us, as noted scholar-scientist Riana Elyse Anderson says, to “dropkick” racism for BIPOC youth and adolescents.

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