Two complementary studies published in *JAMA Network Open* shed light on the association between incarceration and mortality (Bovell-Ammon et al1 and Ruch et al2). Bovell-Ammon et al1 explore the association between incarceration and mortality using cohort data from the National Longitudinal Survey of Youth (NLSY79) from 1979 to 2018. They found that, nationally, exposure to incarceration was associated with a significant increase in mortality among Black participants compared with non-Black participants (adjusted hazard ratio, 1.65; 95% CI, 1.18-2.31). The authors interpret their findings in the context of structural racism, wherein the disproportionate incarceration of African Americans is deeply connected to underlying socioeconomic risk factors. They suggest that incarceration is a key mechanism in life-expectancy differences between Black and other populations, and as such, the prison system, as well as the overexposure of African Americans to it, constitutes a crucial focal point for social and health policy intervention.

The research of Ruch et al2 followed up a cohort of incarcerated youth in Ohio from 2010 to 2017 to investigate how their mortality rates contrast with nonincarcerated peers who were enrolled in Medicaid. They found that the all-cause mortality rate for incarcerated youth was significantly higher than that for Medicaid-enrolled youth (adjusted incidence rate ratio, 5.91; 95% CI, 4.90-7.13), with Black youth more likely to die from homicide, while White youth were more likely to die at higher rates from suicide and drug overdose. An important finding from their study is that previously incarcerated young women have significantly higher risks of early adult mortality; the all-cause mortality risk for these women was nearly 9 times that of their comparison group.

Both studies provide clear empirical support of what Jared Sexton, PhD, refers to as the "assault on Black public health."3 The criminal justice system is not only a "manifestation of structural racism,"1 but it also produces health disparities through the life-depleting effects experienced by Black individuals, rendering the carceral state a contributor to racial violence. Indeed, the slow death that both Ruch et al2 and Bovell-Ammon et al1 identify should be thought of in relation to other direct and brutal forms of anti-Black state violence that is so often committed by agents of the criminal justice system. Moreover, it is precisely the dispersed and banal processes that render the mortality risks of incarceration so profoundly devastating, as they reflect the wearing down and utter exhaustion of life lived under regimes of racial violence.3,5

These studies offer readers, researchers, policy makers, and practitioners critical insights into how exposure to institutional environments can affect mortality. However, these articles also raise other methodological and substantive questions and concerns about research on incarceration, health, and mortality.

First, selection into who is incarcerated in jails, prisons, and/or juvenile detention centers raises questions about comparability. For instance, Ruch et al2 compare incarcerated youth in juvenile detention centers to nonincarcerated youth enrolled in Medicaid, while Bovell-Ammon et al2 compare the incarcerated to the nonincarcerated. In both studies, it is unclear whether these comparisons are valid because of the selection bias associated with detention, incarceration, and Medicaid eligibility and enrollment. For example, given that people at risk of detention and incarceration may differ in observable and unobservable characteristics, what is the counterfactual to incarceration? In the study by Ruch et al2 youth not sentenced to detention but who were on probation (or in noncarceral treatment programs) may share more similar characteristics with youth in the juvenile justice system than nonincarcerated youth receiving Medicare. Similarly, persons convicted but not incarcerated may be more like the sample of incarcerated individuals in the
NLSY79 than the nonincarcerated sample used as a comparison group in the study by Bovell-Ammon et al.¹ Maroto and Sykes⁶ use this framework to identify the consequences of incarceration on wealth inequality using NLSY97 data, which also allowed them to conduct mediation tests of various mechanisms of inequality while minimizing selection effects in a panel data set.

Second, researchers conducting work in this area (mortality and the correctional system) must contend with incomplete and incorrect data as well as the anachronistic nature of some data sources. Ruch et al² note the potential misclassification and underestimation of cause of death listed on death certificates. Indeed, a recent study by Global Burden of Disease Collaborators found that, between 1980 to 2018, 55% of all deaths due to police violence were unreported in the National Vital Statistics System.⁴ Similarly, we found substantial underestimation of US prisoner mortality in data from the National Corrections Reporting Program (B.L.S., E.C., and J.S.; unpublished paper; 2021). Thus, incomplete and misclassified data require a host of statistical corrections and qualifiers that many researchers may be unaware of when estimating quantities of racial disparity associated with penal confinement.

While incomplete and incorrect mortality data may be less of an issue in the study by Bovell-Ammon et al,¹ their respondents entered the study sample in 1979, decades before the prison boom would crest in 2008. This observation is important because the respondents in the NLSY79 likely aged out of the concentrated effects of carceral expansion during the 1980s and 1990s, meaning that the estimates in the study by Bovell-Ammon et al¹ are probably conservative. Even though they use the NLSY79’s sampling weights, this underestimation in racial differences in mortality is an artifact of the changing demographic distribution of people in correctional facilities as the carceral system began to expand over time. Researchers have observed that many national data collection agencies routinely underestimate effect sizes for the association between incarceration and measures of social inequality because they either did not sample people with criminal justice histories or they undersampled people with such histories in relation to their overall prevalence within correctional institutions.⁷ This underestimation problem associated with carceral system research has led to the development of new statistical methods for reconciling misclassified deaths, underreported criminal justice contact, and undersampling demographic groups in national data.⁴,⁷

Third, both studies raise important limitations, or at least critical questions, for future research. The authors acknowledge that an individual’s health is influenced by incarceration, which implies that there is something harmful to the very experience and conditions of confinement.⁸ Researchers have recently begun to investigate incarceration’s capacity to accelerate physiological and mental health decline usually associated with senescent (or aging). Accelerated aging suggests that incarcerated populations often display biological health profiles that appear older than their chronological age and experience an unusually early onset of health problems.⁹¹¹ But accelerated aging research has primarily focused on adult prisoners and needs to explore the aging consequences for incarcerated juveniles undergoing biological, mental, and social development.

Furthermore, both studies incorporate a discussion of how societal conditions contribute to the mortality and morbidity of their participants. In a landmark demographic study, Evelyn Patterson,¹² PhD, analyzed the death rates of prisoners by gender and race and found that Black male prisoners experienced lower mortality rates in prison than their nonincarcerated counterparts, even after accounting for deaths within the nonincarcerated population that are attributable to firearms and motor vehicle crashes. Patterson posits that for Black populations, access to nutrition and health care—even outside of prison—is so deficient that the minimal care Black prisoners receive while incarcerated may decrease risks of mortality, even as they are exposed to the intraprison spread of diseases. Thus, Patterson’s work demonstrates the inextricable links between conditions of socioeconomic inequality found in civil society that affect health and mortality for Black populations and those found within the prison system. The studies by both Ruch et al² and Bovell-Ammon et al¹ support Patterson’s findings by suggesting that a study of health disparities among incarcerated youth ought to include a closer analysis of social conditions outside of prison.
Fourth, decarceration must be a policy consideration, even as access to health care improves behind bars. However, making improvements to carceral institutions all too often expands an already far-reaching system of mass incarceration. While we support improving access to much-needed health care for the incarcerated, Bovell-Ammon et al.1 remind us that not all policy interventions necessitate an expansion of prison facilities. Reducing the number of incarcerated adults and youth, coupled with investing in community support and much needed economic opportunity, is a potential strategy for mitigating racial disparities in health and mortality among individuals contained in correctional facilities.

Lastly, the findings in Bovell-Ammon et al.1 and Ruch et al.2 include data collected before the COVID-19 pandemic. Research shows that the cumulative mortality rate ratio of prisoner deaths was 2.5 times higher than the US population.13 However, it is unknown how the penal system structured racial disparities in COVID-19 deaths within prisons and between prisoners, given observed racial segregation in housing and cell units,14 leading to what Brittany Friedman, PhD, calls “death by design”15 within penal institutions. Future research should examine how different housing and cell units exposed or unexposed different racial groups to COVID-19, reproducing racial inequality in health and mortality among inmates, both during and after their incarceration.

In short, Ruch et al.2 and Bovell-Ammon1 provide a critical examination of racial inequality in youth and adult mortality among detained and incarcerated people. They highlight policy interventions to decrease mortality, including firearm education, violence prevention programs, a higher standard of medical care, and a wide range of sociological factors, such as social inequality, residential segregation, and economic inequality. Their recommendations are important for improving health and mortality outcomes among people exposed to the criminal legal system, hopefully upending, or at least, lessening, the death by design in US penal institutions.


