

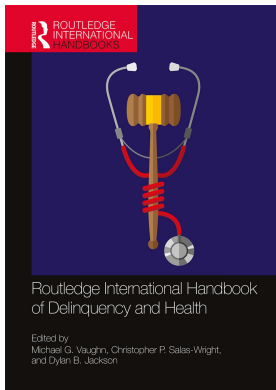
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RACIAL DISPARITIES IN HEALTH AND JUSTICE SYSTEM EXPOSURE

Patterns and Explanations

Graham C. Ousey and Tracy W.P. Sohoni

Introduction

The United States is remarkable for abundant wealth and technological sophistication. It is also remarkable for high levels of social inequality, particularly between racial groups. In this chapter, we explore patterns of racial/ethnic disparity within two institutional venues, health and criminal justice, for juveniles and adults. Prior scholarship on these issues has mostly developed in disconnected disciplinary silos (Jackson & Vaughn, 2018b; Ousey, 2017) with studies of health and disease the purview of physicians, nurses, epidemiologists, and medical sociologists and research on criminal justice processes the concern of criminologists and legal scholars. We peer through the silo walls, examining how racial/ethnic inequalities in these areas of social life are connected.

The remainder of the chapter is organized as follows. We begin with a background discussion of patterns of racial disparity in illness prevalence and mortality rates. It is followed by a description of observed disparities in incarceration between racial and ethnic groups. Next, we discuss theories that potentially explain: (1) why health and criminal justice outcomes are correlated; and (2) why racial disparities in illness prevalence and criminal justice system exposure are similar. We close with a brief discussion of how health, crime, and racial/ethnic inequality may be reduced.

Racial Disparities in Health in the United States

Health and longevity statistics differ markedly for racial and ethnic subgroups in the U.S. population (Kawachi, Daniels, & Robinson, 2005; Wang & Beydoun, 2007). These discrepancies follow a familiar pattern, mimicking the contours of inequalities in employment (Hout, 2017), wealth (Shapiro, 2017), earnings (Peterson, Snipp, & Cheung, 2017), and education (Reardon & Fahle, 2017). Specifically, White Americans are advantaged relative to most non-white racial groups (Johnson, 2017; Williams & Sternthal, 2010) with African Americans experiencing the greatest health disadvantages and American Indians also faring poorly compared to Whites (Beydoun et al., 2016; National Center for Health Statistics, 2017). Of non-White racial groups, only Asian

Americans exhibit health outcomes that consistently compare favorably with Whites (National Center for Health Statistics, 2017; U.S. Department of Health and Human Services, 2018).

Disparities in Mortality

Health inequities are well-illustrated by mortality data (Beydoun et al., 2016; Borrell, Dallo, & Nguyen, 2010; Richardus & Kunst, 2001). The all-cause death rate for 2016 was 18 percent higher for non-Hispanic African Americans than non-Hispanic Whites (U.S. Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), 2018). Native Americans' all-cause mortality rates were roughly seven percent higher than for white non-Hispanics (U.S. Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), 2018). Asian Americans had mortality rates 47 percent lower than non-Hispanic Whites (U.S. Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), 2018). Interestingly, people of Hispanic/Latino origin (of any race) had nearly 30 percent lower mortality rates than non-Latinos (of any race). This difference reflects the so-called "Latino paradox," whereby Latinos do better than expected on various health outcomes despite relatively low socioeconomic status and poor access to healthcare (Borrell, Dallo, & Nguyen, 2010; Hummer et al., 2007; Markides & Coreil, 1986; Markides & Eschbach, 2005).

Although race disparities in mortality rates are present across the life span, the gap is most pronounced among juveniles and young adults. All-cause death rates for persons aged 65-plus were 7 percent higher for non-Hispanic Blacks than Whites (U.S. Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), 2018). For young people aged 1 to 24, the disparity was substantially greater with all-cause death rates 60 percent higher for African Americans than Whites (U.S. Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), 2018). Moreover, infant death rates (< 1 year of age) were 2.3 times greater for African Americans than Whites (U.S. Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), 2018). Given the preceding data, it is easy to understand why African Americans live, on average, four years fewer than Whites (Kochanek, Murphy, & Xu, 2015).

Disparities in Physical Disease

There are also marked racial disparities in the prevalence of many illnesses with Blacks again disadvantaged relative to Whites (Hayward & Heron, 1999; Johnson, 2017; Massoglia, 2008b). In general, this pattern holds for chronic non-infectious conditions such as diabetes, obesity, and heart disease (Centers for Disease Control, 2018; National Center for Health Statistics, 2017) and for serious infectious diseases including tuberculosis (Nahid et al., 2011), helicobacter pylori (McQuillan et al., 2004), HIV (Centers for Disease Control and Prevention, 2017a) and several STDs (Centers for Disease Control and Prevention, 2017b).

Racial/ethnic differences in disease prevalence occur for children and adolescents as well as adults. Asthma, one of the most common chronic conditions affecting U.S. youth, occurs at higher rates among Puerto Ricans and African Americans than among Whites or Mexican Americans (Price et al., 2013). Obesity is more prevalent for African American and Hispanic youth relative to White youth (Price et al., 2013; Singh, Siahpush, & Kogan, 2010). Prevalence of youth diabetes also

differs by race, but the pattern depends on the disease type. Type 1 is most common among non-Hispanic White youths whereas Type II is most common for American Indian and African American youths (Centers for Disease Control and Prevention, 2018; Spanakis & Golden, 2013).

Disparities in Mental Illness

Evidence of racial disparity in the prevalence of mental illnesses also exists, but the pattern is not simple. In general, non-White racial groups have a lower prevalence of (any) mental illness than Whites (Budhwani, Hearld, & Chavez-Yenter, 2015). But nuances appear in the story. First, despite lower overall mental illness prevalence, evidence indicates that non-Hispanic Blacks who become ill are more likely to experience a persistent disorder than non-Hispanic Whites (Breslau et al., 2005). In addition, while some depressive disorders like major depression are less common among African Americans than Whites other depressive disorders, like dysthymia, are more common for African Americans (Riolo et al., 2005). Finally, some research suggests that non-Hispanic Blacks have higher lifetime prevalence of post-traumatic stress disorder (PTSD) or are more likely to be diagnosed with schizophrenia than non-Hispanic Whites (Blow et al., 2004; Coleman et al., 2017; Eack et al., 2012; Roberts et al., 2011).

Racial and ethnic differences in mental health conditions also occur for adolescents. Kilpatrick and colleagues (2003) examined racial/ethnic differences in PTSD, major depressive episodes and substance abuse/dependence among a national sample of adolescents aged 12 to 17. They found significant differences for both PTSD and substance use/dependence. For the former, both African American and Hispanic adolescents had higher odds (odds ratios of 2.5 and 4.1, respectively) than White adolescents. For the latter, African American adolescents reported 74 percent lower odds than Whites. No statistically significant racial/ethnic differences were observed for major depression episodes.

Disparities in the Healthy Life-Span

Taken together, the preceding sections are strong evidence of racial differences in the prevalence of physical and mental illnesses. From this we can expect that racial groups differ in the share of their lives characterized by good health. One gauge of this difference is measured by “active life expectancy,” which estimates the average number of years one can expect to live without activity limitations (Centers for Disease Control and Prevention, 2013a). Using data from 2008, the CDC estimated that, on average, White Americans were expected to live around 67 years without activity limitations due to chronic illness. In comparison, Black Americans were expected to live only 61 years without limitations (Centers for Disease Control and Prevention, 2013a). These disparities also show up in survey measures of self-rated health. For example, data from the Behavioral Risk Factor Surveillance System shows that in comparison to non-Hispanic Whites, a significantly higher percentage of non-Hispanic Blacks report their health as “fair or poor” (23.3 percent vs. 13.3 percent). Moreover, African Americans also report significantly more physically and mentally unhealthy days in the last month than White respondents (Centers for Disease Control and Prevention, 2013b).

In sum, for adults and juveniles, health outcomes clearly vary by race and ethnicity. Exacerbating these disparities is the fact that, on average, there are differences in healthcare. Evidence suggests that African Americans have lower access to and utilization of medical services than Whites (Artiga et al., 2016). Moreover, while the Affordable Care Act has lowered the overall share of the population lacking health insurance and reduced disparities in coverage, key racial/ethnic differences in access and utilization persist (Artiga et al., 2016; Artiga, Foutz, & Damico, 2018).

Racial Disparity in the Criminal Justice System

One of the dramatic developments in American society over the past 50 years has been the large and rapid expansion of the criminal justice system (Massoglia, 2008a; Pratt, 2009). This is evinced by incarceration trend data for the United States. In 1970, adult state and federal prisons held around 329,000 inmates, a rate near 160 prisoners per 100,000 population. By the mid-2010s, the total adult population in prisons and jails hovered around 2.2 million, a rate of nearly 870 per 100,000 (Kaeble & Cowhig, 2018). Although some decline has occurred in adult incarceration over the past several years, the current rate remains more than five times that observed in the early 1970s.

Juvenile incarceration also experienced dramatic changes during the past 50 years. However, there were two dramatically opposed periods of change, one before and one since the new millennium. In 1980, around 60,000 juveniles were confined in juvenile detention facilities (Cahalan & Parsons, 1986). By 2000, that figure nearly doubled to around 109,000 (National Juvenile Justice Network & Texas Policy Foundation, 2013). Since 2000, however, that growth has more than reversed. Indeed, by 2015, the number of juveniles in residential placement had dropped to less than half of the circa 2000 peak, sitting near 50,000 (National Juvenile Justice Network & Texas Public Policy Foundation, 2013). Thus, the past 50 years have been times of change in both adult and juvenile incarceration rates in the United States. Prior to 2000, that change involved increasing incarceration for both adults and juveniles. Immediately after 2000, juvenile rates fell. Adult rates continued to climb for several additional years before falling modestly during the 2010s. Notwithstanding the recent evidence of decline, overall incarceration rates remain historically high. Moreover, as we document below there are troubling racial disparities in incarceration in the United States.

Despite declining youth incarceration rates since 2000, racial disparities in confinement remain firm. In fact, in relative terms, the decline in the Black youth incarceration rate was smaller than the decline of the White youth incarceration rate (The Sentencing Project, 2017). Consequently, the Black/White youth incarceration rate ratio increased from 4.12 in 2001 to 5.03 in 2015 (The Sentencing Project, 2017). Youth incarceration rates for other racial and ethnic minority groups also exceed those of Whites. For American Indian juveniles, the rate of confinement to secure facilities is three times the rate of Whites; for Hispanics it is 1.65 times the rate for Whites (The Sentencing Project, 2017). The lone exception is for Asian American youth, whose incarceration rate is 73 percent lower than the rate for White American youth (The Sentencing Project, 2017). Minority youth are more likely to feel the impact of the “school to prison pipeline.” African American students, for example, are only 16 percent of the student population but they make up 27 percent of students referred to law enforcement by schools (U.S. Department of Education for Civil Rights 2014). In sum, while the overall picture of youth incarceration portrays meaningful progress toward less criminal justice system confinement, a closer look shows a troubling persistence of substantial racial and ethnic inequity with African Americans bearing the largest burden. Research indicates that these disparities in incarceration reflect both racial differences in offending for some crimes, as well as differential treatment by the criminal justice system (Sampson & Lauritsen, 1997).

Explaining the Association between Health and Criminal Justice Outcomes

The preceding pages illustrate the noteworthy racial disparities in both health and criminal justice outcomes in American society. They also underscore the fact that the pattern of racial/ethnic disparities in these outcomes are similar. This evidence begs important questions. Are health disparities and criminal justice disparities similar because each is caused by the same underlying social, political and economic forces? Are they similar because they causally affect one another?

Are there plausible explanations for the higher rates of illness, mortality, and criminal justice system exposure that exist for African Americans, and other racial/ethnic minorities? We address these questions in the paragraphs that follow.

Common Cause Theories

Similarity in the racial patterning of health and criminal justice outcomes is potentially explained by theories of *common cause*. In general, these explanations assert that health and criminal justice system outcomes vary together because they respond to the same underlying causal forces. That which explains why Whites experience lower morbidity and mortality rates relative to people of color also explains why African Americans and Latinos are overexposed to incarceration. Specific mechanisms invoked by common cause theories vary but can broadly be distinguished based on whether they posit shared causes as features of the social structure or as characteristics or traits of individuals.

Social structure theories argue that broad features of the social organization of communities or places are what produce variations in health outcomes and determine differences in the risk of criminal justice system exposure. These theories emphasize that social, economic, political, and cultural conditions of communities create benefits or harms for resident populations. Deprivation theory is an example. It contends that the cause of many undesired outcomes, including poor health, high crime, and incarceration is socioeconomic deprivation. Populations in communities experiencing higher levels of poverty, unemployment, school dropout, family breakdown and civic disengagement (among others) are at greater risk for contracting diseases, more likely to experience diseases chronically, more likely to die early deaths from disease, more likely to engage in law-violating behavior, and more likely to be incarcerated for their criminal behavior. This is because these forms of economic, social, and political deprivation trigger greater exposure to risks factors (e.g., environmental toxins, infectious pathogens, inadequate childhood nutrition, stressful situations, criminal networks) and limit availability of protective factors (e.g., social supports, prosocial capital, health knowledge, medical care, legal resources), which proximally influence illness, crime, and related consequences (Barkan & Rocque, 2018; Cockerham, 2013; Link & Phelan, 1995). Supporting this argument, numerous studies report that resource deprivation measures are associated with the prevalence or rate of: physical and mental illness, health-risk behaviors, crime, arrests, and incarceration (Cohen et al., 2000; Ford & Browning, 2011, 2013; Kirk, 2008; Ousey, 2017; Ross, 2000; Sampson & Loeffler, 2010; Silver, Mulvey, & Swanson, 2002).

The deprivation theory also provides explanation of racial disparities in health and criminal justice system contact in the United States. According to the theory, rates of illness and criminal justice system contact should be greater for racial and ethnic groups experiencing higher rates of poverty and other forms of resource deprivation. Consistent with this argument, racial groups with the highest poverty rates (e.g., African Americans) have illness, mortality and incarceration rates substantially greater than groups with lower poverty rates (e.g., Whites, Asian Americans) (Carson, 2018; Macartney, Bishaw, & Fontenot, 2013; National Center for Health Statistics, 2016; Puzanchera & Hockenberry, 2018; The Sentencing Project, 2017). Moreover, studies suggest that racial and ethnic disparities in crime, arrest, and health are associated with racial-ethnic differences in socioeconomic deprivation (Kirk, 2008; McNulty & Bellair, 2003; Williams & Sternthal, 2010).

A second common cause argument asserts that racial discrimination explains the disproportionate racial/ethnic concentration of disease, crime, arrests, and incarceration. It links historic and contemporary manifestations of systemic racism—slavery, Jim Crow, anti-miscegenation laws, school segregation, discriminatory bank-lending, gerrymandering, vote-suppression, white-flight,

and residential segregation—to forms of racial inequality. Thus, it offers explanation for why the pattern of racial and ethnic disparities is similar for outcomes as diverse as health/illness and criminal justice system exposure (Phelan & Link, 2015; Barkan & Rocque, 2018; Burch, 2014; Ousey, 2017; Ousey & Lee, 2008; Williams & Collins, 2001; Kramer & Hogue, 2009). It also offers a theory of relative disadvantages faced by different racial and ethnic groups. In the United States, systemic racial discrimination has most severely impacted African Americans, accounting for why they tend to experience the greatest disadvantages in many social outcomes, including health and criminal justice. Finally, as was true for the resource deprivation perspective, this theory suggests that racial discrimination affects health and criminal justice outcomes through a host of intervening mechanisms, but clearly asserts systemic racism as the “fundamental” cause (Barkan & Rocque, 2018; Phelan & Link, 2015).

The theory of racial discrimination draws general empirical support from research which links a salient form of systemic racism, racial residential segregation, to various health and crime/criminal justice outcomes including: greater overall morbidity and mortality rates (Kramer & Hogue, 2009; Williams & Collins, 2001; Williams & Sternthal, 2010), higher rates of incarceration (Burch, 2014), elevated crime rates among African Americans (Feldmeyer, 2010; Krivo, Peterson, & Kuhl, 2009; Peterson & Krivo, 1993; Shihadeh & Flynn, 1996), greater between-race disparities in infant mortality and preterm births (Bird, 1995; LaVeist, 1989; Osypuk & Acevedo-Garcia, 2008; Polednak, 1991), more substantial racial disparity in homicide rates (Velez, Krivo, & Peterson, 2003), and greater black/white disparities in arrests for drug and weapons offenses (Ousey & Lee, 2008). Likewise, it is supported by scholarship showing that individuals with greater personal experiences and perceptions of racial discrimination are more likely to exhibit an array of mental and physical health problems (Williams & Mohammed, 2009), delinquency (Burt, Simons, & Gibbons, 2012), violence (Simons et al., 2006), problematic externalizing behaviors (Unnever, Cullen, & Barnes, 2016), and illegal drug use (Borrell et al., 2007; Gibbons et al., 2007).

Not all common cause explanations identify social-structural factors. An alternative suggests that specific individual-level characteristics produce greater risks of negative health outcomes and criminal justice system exposure. One example is Gottfredson and Hirschi’s (1990) self-control theory. It assumes individuals are motivated by self-interest and seek to satisfy needs and wants quickly. Unhealthy eating, improper hygiene, promiscuity, lying, stealing, and aggression can help satisfy short-term needs, but at the cost of increased risk of illness, of legal consequences, and of shortening the life-span. The person with low self-control has difficulty seeing and properly weighing those costs. Since our society values health, law abidance and longevity, its task is teaching individuals to respect those values and exercise constraints needed for their attainment. Individuals must learn to correctly weigh future costs against their desires for immediate pleasure. According to Gottfredson and Hirschi’s theory, self-control should emerge in kids between ages 5 and 10 as parents monitor their behavior and correct wrongdoing with appropriate sanctions. Proper parenting teaches that the pursuit of self-interest must be restrained in ways that limit risks of disease, jail and early death. However, because parenting is not always effective some individuals remain low in self-control and experience higher risks of criminal behavior, criminal justice exposure, and negative health consequences.

Empirical research supports the idea that self-control explains both crime involvement and poor health outcomes. Pratt & Cullen’s (2000) meta-analysis concluded that self-control was one of the strongest individual-level crime correlates. Numerous subsequent studies bolster that conclusion. Low self-control has been found predictive of various types of criminal offending across diverse samples varying by age, national origin, and economic disadvantage or crime-risk level (for review, see Hay & Meldrum, 2016, pp. 58–61). Moreover, research shows an association between self-control and various health indicators including: body mass index (Crescioni

et al., 2011; Schlam et al., 2013); exercise and good nutrition (Wills et al., 2007); depression, mental health, and psychiatric disorders (Boals, vanDellen, & Banks, 2011; Caspi et al., 1996; Miller, Barnes, & Beaver, 2011); an index of respiratory, periodontal, metabolic, inflammatory, and sexually transmitted infectious conditions (Moffitt et al., 2011); and early mortality (Kern & Friedman, 2008).

Gottfredson and Hirschi's (1990) theory attributes racial and ethnic differences in crime to group differences in self-control, which are the result of: "potentially large differences among racial groups ... in the elements of child-rearing" (153). And although their theory is not meant to explain health outcomes, its logic implies that White Americans experience lower disease prevalence and lower mortality rates because, on average, they have developed higher levels of self-control than African Americans and other people of color. Unfortunately, research addressing whether self-control theory explains racial disparities in crime or health outcomes is relatively scarce. Some basic support can be gleaned from studies that indicate Whites and non-Whites differ on measures of parenting practices or on self-control (Higgins & Ricketts, 2005; Pratt, Turner, & Piquero, 2004) and other studies which show that the experience of racism depletes self-control in racial minority groups (Gibbons et al., 2012). However, other research evidence runs counter to the idea that race-differences in self-control are responsible for race differences in crime and criminal justice system exposure. For example, some studies find that race remains a significant predictor of crime, even when race differences in self-control are controlled (Kirchner & Higgins, 2014; Longshore, 1998). And other work reports that self-control does not differ by race (Hay, 2001) or is not predictive of delinquency for Blacks (Higgins & Ricketts, 2005). Thus, at present, the research evidence is too shallow and findings too ambiguous to support strong conclusions about whether differences in self-control explain observed patterns of racial disparity in health and crime.

Direct Causal Linkages between Health and Criminal Justice Outcomes

Another set of explanations focus on how health and criminal justice system exposure directly influence one another. One line of explanation proffers that health problems cause subsequent criminal justice system exposure by increasing criminal behavior. The second line suggests that causation works in the other direction, criminal justice system exposure causes subsequent illness or health problems. These perspectives are not unfriendly to the possibility that antecedent forces, such as resource deprivation, systemic racism, or individual traits may affect both prevalence of illness and criminal justice system exposure. But their core argument is that that net of antecedent effects, health problems and criminal justice system exposures have causal impact on one another. We briefly review research related to each of these causal pathways below.

Health Effects on Incarceration

Do health conditions play a role in the genesis of crime and criminal justice exposure? And do racial disparities in health contribute to racial disparities in incarceration? Until recently, criminological scholarship neglected this connection. However, there is now growing scholarly interest in connections between health, crime and criminal justice (Jackson & Vaughn, 2018b).

Health conditions occurring in the earliest stages of life are one avenue linking health and criminal behavior. It is known that maternal prenatal health problems, including the experience of high levels of stress, negatively impact fetal health and development (Dunkel Schetter, 2011; Gourounti, Karpathiotaki, & Vaslamatzis, 2015; Weinstock, 2008). Moreover, maternal health risks also are associated with problematic externalizing behaviors in offspring. Jackson and Vaughn (2018a) report that male offspring exposed to a greater accumulation of maternal health

factors (e.g., anemia, cardiac or lung disease, diabetes, preeclampsia, obesity) during the prenatal period have a significantly greater likelihood of developing persistent externalizing behavior problems (e.g., impulsivity, aggression, provocation, hyperactivity) during preschool and kindergarten ages. Reasons are not completely clear, but stress/anxiety processes, neuropsychological functions, and temperament are potentially salient intervening mechanisms for the observed effects (Jackson & Vaughn, 2018a).

Exposure to environmental toxins is another health risk that may affect criminal behavior. Research by Needleman and colleagues (Needleman, 2004; Needleman et al., 1979, 1996) showed that low levels of lead exposure creates health and behavioral consequences, especially for young children. Problems with neurological development, motor function, learning, cognition, and attention-deficits all appear at elevated rates in children with greater lead exposure (Needleman, 2004). Building on this work, a growing research literature suggests that lead exposure may help explain juvenile delinquency and violent crime (Dietrich et al., 2001; Martin & Wolfe, 2018; Needleman et al., 2002, 1996; Nevin, 2007; Reyes, 2007, 2015; Stretesky & Lynch, 2001, 2004; Wright et al., 2008).

Research also suggests that traumatic brain injuries (TBI) produce short- and long-term behavioral effects (LeÓN-CarriÓN & Ramos, 2003; Li & Liu, 2013). Prior brain injury is up to ten times more common among incarcerated than general populations (Schwartz, Connolly, & Valgardson, 2018). In addition, research from Sweden indicates that individuals who experienced TBI had more than three times the odds of violent behavior than individuals with no TBI (Fazel et al., 2011). Sibling comparisons revealed that the odds of violence were double for siblings with a TBI history relative to siblings without a TBI history (Fazel et al., 2011). However, some recent research suggests that while correlated, brain injury does not cause subsequent involvement in criminal behavior (Schwartz, Connolly, & Valgardson, 2018).

Adverse child experiences (ACE) include unhealthy social experiences such as physical, sexual and emotional abuse, physical or emotional neglect, and witnessing violence in the household or neighborhood context. They may contribute to an elevated prevalence of mental health problems and greater involvement with crime and the criminal justice system. Consistent with that argument, evidence indicates that individuals in the criminal justice system report higher levels of ACE (Reavis et al., 2013) and greater evidence of PTSD and other psychiatric disorders (Briere, Agee, & Dietrich, 2016) than general/non-incarcerated populations. Moreover, some research reports that ACE and related trauma exposures are associated with subsequent behavioral problems (Wolff & Shi, 2012), including violence (Duke et al., 2010). However, recent research suggests that the relationship between ACE and antisocial behavior may be non-causal (Connolly, 2018).

A major consequence of the behavioral effects linked to the negative health conditions noted above is racial disparity in the risk of incarceration, especially for African Americans. Race differences in exposure to lead, poor prenatal health, TBI and ACE are likely to produce group differences in the prevalence of negative behaviors, which subsequently yield racial disparities in criminal justice system exposure. Because of systemic racism, racial residential segregation has concentrated many African Americans in residential spaces with greater exposure to toxic environments. Indeed, research indicates communities with higher African American population shares have higher levels of exposure to lead (Sampson & Winter, 2016; Stretesky, 2003), concentrated poverty (DeNavas-Walt, Proctor, & Smith, 2014; Logan, 2014) and racial discrimination which are likely to negatively impact prenatal and early childhood health through increased exposure to stress, ACE or other traumatic events (Bruner, 2017; Nagahawatte & Goldenberg, 2008). Not surprisingly, Eitle and Turner (2003) found that African Americans had higher rates of lifetime stress, leading to race differences in offending (Eitle & Turner, 2003).

Incarceration Effects on Health

Extant research indicates that risks of chronic physical disease are disproportionately elevated among correctional populations relative to the general population (Binswanger, Krueger, & Steiner, 2009; Cloud, 2014; National Commission on Correctional Health Care, 2002). Some of this disproportion may be the result of selection effects in which people with poor health are more likely to commit crime and face incarceration, but there is also reason to believe that incarceration negatively impacts health outcomes (Schnittker & John, 2007). Because incarceration rates are substantially greater for African Americans than Whites, it follows that racial disparities in health may be, in part, influenced by race differences in incarceration.

The impact of incarceration on health can play out in several ways. First, incarceration may increase exposure to infectious diseases (Cloud, 2014; Massoglia, 2008a, 2008b; National Commission on Correctional Health Care, 2002). Second, incarceration is a major life event and chronic stressor, both of which negatively impact health functioning (Massoglia, 2008a). Third, incarceration negatively impacts employment opportunities and disrupts family connections, which are associated with health (Massoglia, 2008b; Ross & Mirowsky, 1995; Ross, Mirowsky, & Goldsteen, 1990). Fourth, incarceration may negatively impact mental health conditions, such as mood disorders (Schnittker, Massoglia, & Uggen, 2012). Finally, incarceration effects on health may extend to the families and broader communities of incarcerated individuals. Several studies indicate that incarceration is associated with higher rates of infectious disease (Johnson & Raphael, 2009; Stuckler et al., 2008; Thomas & Torrone, 2008). Others show that parental incarceration is associated with elevated risks of behavioral problems and mental health issues among children (Turney, 2014; Wakefield & Wildeman, 2011). With over 2.7 million children experiencing the incarceration of a parent (Pew Charitable Trusts, 2010), it is a serious health concern.

The burden of incarceration is most heavily experienced by people of color (Massoglia, 2008b; Petit & Western, 2004). Moreover, evidence suggests that the health status of blacks has worsened relative to whites during the period of rising incarceration rates (Massoglia, 2008b). Consequently, race differences in exposure to incarceration may partly explain the persistent and growing health disparities between Blacks and Whites. Direct research evidence on this issue remains limited, but findings are suggestive. Massoglia (2008b) examines the effects of incarceration on race disparities in general health functioning. He reports that incarceration is associated with poorer general health functioning and that a substantial proportion of the racial disparity in general health functioning is explained by race differences in incarceration exposure. Additional evidence in Johnson and Raphael (2009) shows that higher black male incarceration rates explain much of the racial disparity in AIDS infection among women.

Beyond empirical evidence, there are logical reasons to expect that incarceration plays a role in racial disparities in health. Incarceration is selective; it disproportionately affects high-poverty, high minority communities (Burch, 2014). Moreover, incarceration destabilizes communities by escalating strains, reducing employment prospects and damaging the prosocial family relationships that are critical for economic viability and social organization (Clear, 2007; Rose & Clear, 1998). For example, high incarceration rates reduce the number of men, destabilizing marriage markets (Wolfers, Leonhardt, & Quealy, 2015) and depressing the prevalence of a key community-level protective factor. In addition, communities destabilized by incarceration likely result in feelings of stress and despair, particularly for juveniles. Consistent with this argument, research indicates that African American teenagers are less likely to believe their lives will extend to the age of 35 and beyond (Warner & Swisher, 2015). In sum, there are strong empirical and logical reasons behind the view that dramatic racial disparities in incarceration in the United States contribute to racial differences in disease prevalence and overall health.

Conclusions and Future Directions

The link between incarceration and health has long been neglected. Thus, it is a positive development to see that an emerging body of social science research is now engaging questions related to the important intersection of these phenomena. In broad portrait, this literature highlights an essential fact, that health and incarceration are inequitably distributed by race and ethnicity with African Americans and other non-white groups bearing greater burdens. What explains these distributions of health and incarceration by race? Common cause theories provide one major perspective to account for racial and ethnic disparities in illnesses, crime and incarceration. They attribute the similar patterns of racial disparity in health and criminal justice outcomes to structural forces such as socioeconomic disadvantage and systemic racism, and possibly to individual traits that emerge from such structural forces (e.g., low self-control). Yet, in addition to common cause theories, social scientists have increasingly proffered arguments suggesting that health and criminal justice system contact are causally linked, perhaps reciprocally. These causal linkages sustain and exacerbate the racial disparities in health and criminal justice that emerge from common structural conditions. Racial differences in the prevalence of prenatal health factors, traumatic brain injuries, and exposure to environmental toxins and adverse childhood experiences are considered to be part of the reason why we so commonly find racial group differences in the prevalence of antisocial or aggressive behaviors and ultimately, incarceration. In subsequent turn, the resulting race differences in exposure to incarceration influence race differences in health conditions because they increase the likelihood of contracting infectious and stress-related illnesses during the period of incarceration or post-release. Moreover, the health impact of incarceration may radiate outward to extended families and communities through various mechanisms including infection transmission and the depletion of economic and social support mechanisms.

What can be done to address these connected problems of health and criminal justice exposure? We suggest that urgent efforts to ameliorate these problems are needed. Preventative and corrective programs should eschew the traditional idea that health and incarceration should be addressed separately, either through medical or criminal justice responses. In our minds, a superior strategy starts by viewing racial inequities in health and incarceration as two related indicators of unhealthy conditions in the socio-spatial environments inhabited by people of color in American society. In that sense, solutions should be directed at identifying and eradicating unhealthy conditions and fostering better physical, mental and behavioral health. Addressing prenatal health concerns and limiting exposures to stressors, toxins and traumatic injuries are essential and will likely pay large dividends in terms of not only fewer diseases and medical costs, but also in terms of less maladaptive behavior, crime, and incarceration. Likewise, we believe that reducing the overreliance on incarceration may impart significant benefits to vulnerable communities by stemming one key source of poor health. Perhaps the best way to reduce racial disparities in the negative health and criminal justice outcomes and improve overall population health is to tackle the common causes of poor health, crime and incarceration. Policies that better ensure that all citizens, regardless of race or ethnicity or income, have an economic safety net, access to affordable high-quality medical and mental health care, access to safe housing, and protection from environmental stressors and toxins will likely yield a cascade of long-term benefits for our society. These include overall improvements in physical and mental health, and reductions in accidents, injuries, antisocial behaviors and crimes. This strategy is a sustained commitment that likely involves a radical reshuffling of budgeting and cultural priorities. But if successful, it would substantially alter one of America's most prominent, but dubious, features, our high levels of racial and ethnic inequality across so many social institutions, health and criminal justice included.

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