Mass Incarceration and Subsequent Preventive Health Care: Mechanisms and Racial/Ethnic Disparities

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Objectives. To examine the associations and mechanisms between 2 indicators of mass incarceration and preventive health care use and whether these associations are moderated by race/ethnicity.

Methods. We used 1997 to 2015–2016 data from the US National Longitudinal Survey of Youth 1997 (n = 7740) to examine the associations between arrest and incarceration at ages 18 to 27 years and cholesterol, blood sugar, and blood pressure screenings at age 29 years. Explanatory mechanisms included blocked access (health care coverage and medical checkup) and economic (education, employment, and income) factors. We used logistic regression to model main effects.

Results. Arrest was associated with lower odds of getting blood cholesterol, blood sugar, and blood pressure tests; incarceration was associated with lower odds of getting cholesterol and blood sugar tests; blocked access and economic factors mediated 42% to 125% of these associations. These associations were mostly consistent across race/ethnicity.

Conclusions. Mass incarceration contributes to decreases in preventive health care use, which are explained in part by blocked access and economic factors.

Public Health Implications. The decreased use of preventive health care following mass incarceration may increase the prevalence of disease and the associated costs of treatment. (*Am J Public Health*. 2020;110:S145–S151. doi:10.2105/AJPH.2019.305448)

Mass incarceration—which encapsulates multiple forms of contact with the criminal justice system (e.g., police contact, arrest, incarceration, parole)—is embodied by statistics showing the scope and expansion of the criminal justice system in recent years.[1] For example, between 1978 and 2017, the incarceration rate in the United States more than tripled,[2] and, as of 2017, about 2.2 million individuals were incarcerated, and more than 600 000 individuals were released back into their community from carceral institutions each year.[2,3] During the same time, the number of individuals with an arrest record has increased, with an estimated 25% of the adult population in the United States having some form of criminal justice contact.[4]

Mass incarceration has wide-ranging, negative consequences for justice-involved individuals. One line of research, in particular, has recognized mass incarceration as an important social determinant of health,[5,6] particularly among Black and Hispanic men, who have disproportionately higher rates of multiple forms of criminal justice contact.[1,2,7] For example, formerly incarcerated and arrested individuals have higher rates of disease and infection,[8] mental health problems,[9] and premature mortality[10] compared with their counterparts. Although a robust literature has pointed to the negative impacts of mass incarceration on health, less is known about its influence on use of preventive health care services.

Scholars of health care policy suggest that use of health care services is an important

indicator of access, with preventive health care as 1 particular type of health care that individuals might use.[11] Preventive health care refers to "efforts to stop illness before it begins"[11(p214)] and differs from illness-related or custodial care that are responses to detected illness. In the United States, chronic diseases—such as heart disease, cancer, and diabetes—are responsible for about 70% of deaths each year, yet these diseases are considered largely preventable through periodic medical screenings, such as cholesterol, blood pressure, and blood sugar tests, among others.[12] However, not all people use preventive health care equally.[13,14] Given the barriers that formerly arrested and incarcerated individuals face in accessing health care to treat their chronic illnesses,[15,16] the processes surrounding mass incarceration may similarly be a meaningful social determinant of access to preventive health care.

There are multiple mechanisms that might explain the link between mass incarceration and decreased access to preventive health care. One mechanism suggests that criminal justice contact blocks access to health insurance coverage.[17–19] Because of the increased use of criminal background checks by employers,[20] formerly incarcerated and arrested individuals may find it difficult to obtain (and keep) jobs, especially jobs that provide health insurance benefits. Given that health care coverage often pays the cost of preventive health care, this may be 1 way that those with criminal records are less likely to access preventive care. A second mechanism suggests that criminal justice contact presents economic barriers to preventive care.

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Research suggests that criminal justice contact is associated with lower educational attainment, employment, and income.[21–23] This, in turn, may limit individuals' ability to afford out-of-pocket preventive services whether they are insured or uninsured. However, to our knowledge, the relationship between mass incarceration and access to preventive health care and the mechanisms that may underlie this relationship have not been examined.

Moreover, to our knowledge, no study has examined whether mass incarceration affects preventive care similarly by race/ethnicity. Given that mass incarceration is a phenomenon affecting racial/ethnic minorities[1,2,7] and the existing racial/ethnic disparities in access to health insurance[24] and income,[25] the association between mass incarceration and preventive health care use may be more pronounced for racial/ethnic minorities. Therefore, we investigated this possibility.

Given the calls to address the direct and indirect effects of mass incarceration on health as well as potential racial disparities,[26] this study contributes to this literature in 3 ways. First, it examines the link between 2 indicators of mass incarceration measured at the individual level that capture criminal justice contact (i.e., arrest and incarceration) and 3 indicators of access to preventive health care (i.e., cholesterol, blood sugar, and blood pressure tests). Second, it examines 5 potential mechanisms between criminal justice contact and preventive health care, including blocked access (i.e., health care coverage and medical checkup) and economic (i.e., education, employment, and income) factors. Third, it examines Black–White–Hispanic differences in the association between criminal justice contact and preventive care. Together, these contributions extend the growing body of research on mass incarceration and health.

METHODS

We used 1997 to 2015–2016 data from the National Longitudinal Survey of Youth 1997 (NLSY97).[27] The NLSY97 is a nationally representative sample of 8984 youths living in the United States in 1997 who were born between 1980 and 1984. The study contains 2 probability-based household samples: a nationally representative sample of 6748 youths

and an additional oversample of 2236 Black and Hispanic youths. Respondents were interviewed annually from 1997 to 2011 and biennially starting in 2013. Respondents were between the ages of 12 and 18 years at the first interview (1997) and between the ages of 30 and 36 years as of the most recent interview (2015–2016). The retention rate in the NLSY97 was 79% in 2015–2016.

From the full sample, we retained respondents who had complete data on all 3 of our dependent variables, which measure respondents' access to preventive health care at age 29 years (n = 7740). To address missing data on the remaining variables, we implemented multiple imputation using chained equations with the *mim* suite available in Stata version 15 (StataCorp LP, College Station, TX). In doing so, we created 20 imputed data sets. We calculated standard errors by using Rubin's[28] rules (see Table A, available as a supplement to the online version of this article at http://www.ajph.org, for more information about the missing data and the variables).

Measures

Dependent variables. The dependent variables were 3 measures of respondents' use of preventive health care. These measures came from what is known as the Youth Health 29 (YHEA29) module, which asked respondents when they were aged approximately 29 years whether they had received a cholesterol blood test, a blood sugar test, and a blood pressure check in the past 24 months. Each measure was scored dichotomously (0 = not received; 1 = received). Respondents participated in the YHEA29 module at the 2009 through 2015–2016 interviews, depending on whether they were aged 29 years at that interview.

Focal independent variables. The focal independent variables were 2 indicators of mass incarceration measured at the individual level that capture criminal justice contact. The first was a dichotomous indicator of whether respondents were arrested as an adult but before their YHEA29 interview (0 = no; 1 = yes). At each interview, respondents were asked whether they had been arrested by law enforcement for an illegal offense (excluding minor traffic violations) since the last interview. Those who reported being arrested were then asked for the number of times

arrested and then the dates (month/year) of each arrest. We used the dates of arrest combined with respondents' date of birth to determine whether respondents were arrested between the ages of 18 and 27 years.

The second measure was a dichotomous indicator of whether respondents were incarcerated as an adult but before their YHEA29 interview (0 = no; 1 = yes). At each interview, respondents reported whether they had been sentenced to a jail, an adult corrections institution, or a juvenile corrections institution. Respondents who were sentenced to any of the 3 correctional institutions were then asked to provide the date (month/year) they began their sentence and the date they were released. We used the dates combined with respondents' date of birth to determine whether respondents were incarcerated between the ages of 18 and 27 years.

Mediators. We included 5 variables that might explain why previously arrested and incarcerated individuals are less likely to use preventive health care. Those mediators included both economic and blocked access variables measured at respondents' interview at age 29 years. Economic variables included respondents' highest grade level completed (in years), weeks worked since the date of last interview (logged), and household income in the past year (logged). Blocked access variables included whether respondents had access to health care coverage (health insurance, health maintenance organization, or Medicaid; 0 = no; 1 = yes) and had a routine checkup with a medical doctor in the past 12 months (0 = no; 1 = yes).

Covariates. A wide range of covariates were measured in 1997 to account for potential sources of spuriousness. Covariates included demographic, socioeconomic, health, and behavioral characteristics that research has linked to both criminal justice contact[21] and health care access.[13,14] Demographic and socioeconomic characteristics included respondents' gender (female, male), race/ethnicity (non-Hispanic White [reference], non-Hispanic Black, Hispanic, other race), birth year, urban location (rural [reference], central city, and suburbs), adolescent family structure (0 = did not live with 2 parents; 1 = lived with 2 parents), parental education (in years), and mother's age at respondent's birth (in years). Health characteristics included respondents' self-reported health

(1 = poor to 5 = excellent) and health coverage as an adolescent (0 = did not have health insurance; 1 = had health insurance). Behavioral characteristics included respondents' scores on the Armed Services Vocational Aptitude Battery (a validated measure of intelligence), a 3-item victimization index, a 5-item mean index indicating exposure to antisocial peers, gangs in neighborhood (0 = no; 1 = yes), perceived risk of arrest for stealing a car (ranges from 0%–100% chance of arrest), gang member (0 = no; 1 = yes), and self-reported delinquency (includes property, violent, and drug sales offending), cigarette use (0 = no; 1 = yes), marijuana use (0 = no; 1 = yes), and binge drinking (defined as ≥ 5 drinks on the same occasion; 0 = no; 1 = yes).

Statistical Analyses

The analyses followed Baron and Kenny's[29] 4-step method for assessing mediation. The first step assessed the association between criminal justice contact and each dependent variable. The second step assessed the association between criminal justice contact and each mediator. The third step assessed the association between each mediator and each dependent variable. The fourth step assessed whether the association between criminal justice contact and each dependent variable was attenuated after the introduction of the mediators; for the fourth step, we reported the proportion of the total effect that was mediated by calculating the percent change in the criminal justice odds ratio (OR) after introduction of the mediators ([ln{$OR_{unmediated}$}– ln{$OR_{mediated}$}] / ln{$OR_{unmediated}$})[29,30] and conducted the Karlson–Holm–Breen (KHB)[30] test for nonlinear mediation to determine whether the attenuation was statistically significant. Because past research has already documented the associations in step 2, we mainly focused on the associations in steps 1, 3, and 4. For step 2, we tested multivariate associations between criminal justice contact and each mediator and found them to be significant (Table B, available as a supplement to the online version of this article at http://www.ajph.org).

We conducted all analyses in Stata/MP 15.1 and incorporated sampling weights to account for the NLSY97 survey design, the results of which are considered nationally representative of individuals who were born

between 1980 and 1984 and living in the United States in 1997. We modeled dichotomous outcomes by using logistic regression.

RESULTS

Table 1 presents survey-weighted descriptive statistics. About 25.5% and 7.4% of respondents were arrested and incarcerated between the ages of 18 and 27 years, respectively. At age 29 years, the average respondent had completed 13.74 grade levels, worked 3.44 logged weeks (unlogged 59.29 weeks), and earned a logged household income of 10.55 (unlogged $67 196); and about 71.5% and 53.2% reported having health coverage and receiving a medical checkup, respectively. In addition, the sample was about 65.4% non–Hispanic White, 16.4% non-Hispanic Black, 13.2% Hispanic, and 5.0% other race. At age 29 years, about 30.1%, 33.1%, and 77.0% of respondents received a blood cholesterol, blood sugar, and blood pressure screening in the past 24 months, respectively (Figure 1).

Table 2 presents logistic regression models predicting preventive health care outcomes from criminal justice contact. The "Arrest" part of Table 2 shows the multivariate associations between arrest and preventive health care before (unmediated) and after (mediated) the introduction of mediators. For the unmediated associations, compared with individuals who were not arrested between the ages of 18 and 27 years, those who were arrested had 35% (OR = 0.65; 95% confidence interval [CI] = 0.56, 0.75) lower odds of getting a cholesterol blood test, 25% (OR = 0.75; 95% CI = 0.66, 0.86) lower odds of getting a blood sugar test, and 18% (OR = 0.82; 95% CI = 0.71, 0.94) lower odds of getting a blood pressure check at age 29 years.

The unmediated associations in the "Incarceration" part of Table 2 show that incarceration predicted 37% lower odds of getting a cholesterol blood test (OR = 0.63; 95% CI = 0.50, 0.81) and 22% lower odds of getting a blood sugar test (OR = 0.78; 95% CI = 0.62, 0.98). However, the association between incarceration and getting a blood pressure check (OR = 0.93; 95% CI = 0.75, 1.15) was nonsignificant. One possible explanation for this nonsignificant finding is that individuals may receive blood pressure checks as part of their health care while incarcerated.

TABLE 1—Descriptive Statistics for Variables Used in Analyses: National Longitudinal Survey of Youth 1997, United States, 1997 to 2015–2016

	% or Mean (SE)
Focal independent variables	
Arrested, age 18–27 y	25.5
Incarcerated, age 18–27 y	7.4
Mediators	
Highest grade level completed	13.74 (0.04)
Weeks worked (logged)	3.44 (0.02)
Household income (logged)	10.55 (0.02)
Health coverage	71.5
Medical checkup	53.2
Covariates	
Male	51.0
Non-Hispanic Black	16.4
Hispanic	13.2
Other race/ethnicity	5.0
1981 cohort	19.9
1982 cohort	20.2
1983 cohort	19.8
1984 cohort	19.9
Central city	27.0
Suburbs	53.0
2-parent household	66.6
Parental education	13.53 (0.04)
Mother's age at respondent's birth	25.62 (0.08)
Health	4.08 (0.01)
Adolescent health coverage	88.0
ASVAB score	48.66 (0.41)
Victimization index	0.44 (0.01)
Antisocial peers	2.20 (0.01)
Gangs in neighborhood	42.7
Perceived risk of arrest	60.65 (0.50)
Gang member	5.0
Delinquency	1.06 (0.02)
Ever smoked cigarettes	42.5
Ever used marijuana	21.5
Binge drank[a] in past 30 d	10.5

Note. ASVAB = Armed Services Vocational Aptitude Battery. Sample size n = 7740. Arrested (n = 2011)/nonarrested (n = 5729); incarcerated (n = 611)/nonincarcerated (n = 7129); numbers are unweighted.
[a]Defined as ≥ 5 drinks on the same occasion.

Supplemental analyses that removed respondents who were ever incarcerated during the preventive health care reference period (age 28–29 years) showed that the association between incarceration and blood pressure check was still nonsignificant, suggesting that this explanation did not hold. To illustrate the
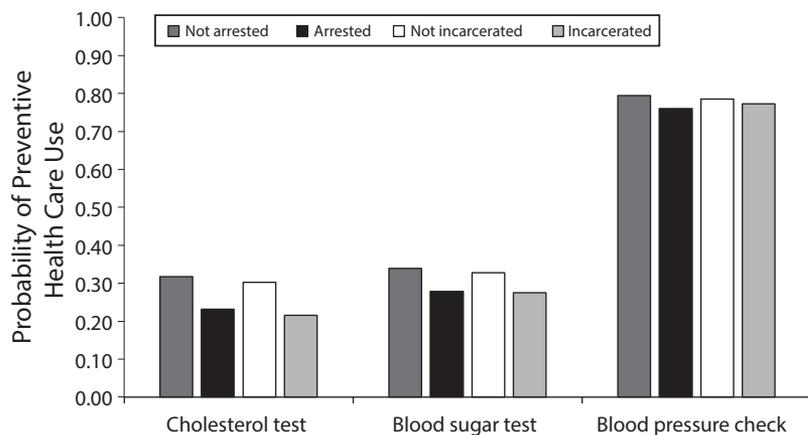
	Percentage of Sample Reporting	Arrest			Incarceration		
		Probability Not Arrested	Probability Arrested	t-Test for Arrest Difference	Probability Not Incarcerated	Probability Incarcerated	t-Test for Incarcerated Difference
Cholesterol test	30.1	0.318	0.232	−5.89*	0.302	0.215	−3.65*
Blood sugar test	33.1	0.339	0.278	−4.05*	0.327	0.275	−2.16*
Blood pressure check	77.0	0.794	0.760	−2.76*	0.786	0.773	−0.66

Note. Sample size n = 7740. Unmediated estimates and statistical tests were derived from 6 separate logistic regression models predicting preventive health care use from arrest and incarceration, as well as covariates for gender, race/ethnicity, birth year, urban location, family structure, parental education, mother's age at respondent's birth, self-reported health, adolescent health coverage, Armed Services Vocational Aptitude Battery score, victimization, antisocial peers, gangs in neighborhood, perceived risk of arrest, gang member, delinquency, cigarette use, marijuana use, and binge drinking. All covariates were held constant at their means.

*P < .05 (2-tailed).

FIGURE 1—Predicted Probability of Preventive Health Care Use at Age 29 Years by Criminal Justice System Contact at Ages 18 to 27 Years: National Longitudinal Survey of Youth 1997, United States, 1997 to 2015–2016

magnitude of the unmediated associations, Figure 1 shows the predicted probability of preventive care use for those with and without criminal justice contact.

Next, we introduced mediating variables that may explain why individuals with criminal justice contact have lower preventive health care. Across the models in the "Arrest" part of Table 2, the association between arrest and the odds of preventive care were attenuated by 42% for blood cholesterol test (OR = 0.78; 95% CI = 0.67, 0.92), 55% for blood sugar test (OR = 0.88; 95% CI = 0.76, 1.02), and 125% for blood pressure check (OR = 1.05; 95% CI = 0.89, 1.23), showing evidence of mediation. Except for the blood cholesterol model, arrest was no longer statistically associated with preventive care in the mediated models. KHB tests suggested that these were all significant reductions in the direct effects (P < .001). In addition, Table 2 shows that education (except in the blood sugar model), health care coverage, and

medical checkup were positive and significantly related to preventive health care; weeks worked was not significantly related to preventive health care (expect in the blood sugar model, in which it was negative and significant, which is the opposite of the direction expected); income was not significant. Supplemental analyses (not shown) that entered each mediator separately indicated that each mediator (except weeks worked) had a significant mediating effect, including income. Further supplemental analyses revealed that education attenuated the mediating effect of income. Together, these findings indicate that between 42% and 125% of the association between arrest and preventive care was explained by blocked access and economic variables.

The "Incarceration" part of Table 2 shows that the association between incarceration and preventive care was attenuated by 54% for cholesterol blood test (OR = 0.81; 95% CI = 0.62, 1.07) and 71% for blood sugar test (OR = 0.93; 95% CI = 0.73, 1.20); in both

cases, the incarceration OR was no longer statistically significant, and KHB tests indicated that these were significant reductions in the direct effect (P < .001). In addition, Table 2 shows that education (except in the blood sugar model), health care coverage, and medical checkup were positive and significantly related to preventive health care; weeks worked was negative and significantly associated with blood sugar test but not cholesterol test; and income was not associated with either outcome. Supplemental analyses (not shown) that entered each mediator separately indicated that each mediator (except weeks worked) had a significant mediating effect, including income. Further supplemental analyses revealed that education attenuated the mediating effect of income. Because the direct effect of incarceration on blood pressure check was not significant, we do not present corresponding mediated models. Together, these findings indicate that 54% of the association between incarceration and cholesterol blood test and 71% of the association between incarceration and blood sugar test was explained by the mediators.

We also examined the extent to which the association between criminal justice contact and preventive care differed by race/ethnicity. To do so, we created a polytomous variable representing each combination of race/ethnicity and criminal justice contact and used this variable to predict preventive health care by using logistic regression (Table 3). Those analyses revealed that, relative to the reference category (non-Hispanic Whites, without criminal justice contact), arrested Whites had lower odds of all 3 forms of preventive care, and arrested Blacks and incarcerated Whites had lower odds of getting a cholesterol test. We also ran post hoc tests that specifically examined whether the ORs for non-Hispanic Whites with criminal justice contact were significantly different from the ORs for other racial/ethnic groups with criminal justice contact. The post hoc analyses revealed that most of the ORs were not significantly different from one another. There were a few exceptions. Arrested Hispanics had higher odds of getting both a cholesterol blood test and a blood sugar test relative to arrested Whites. Non-Hispanic Black participants who were arrested had higher odds of getting a blood pressure check relative to arrested Whites. Incarcerated

TABLE 2—Associations Between Criminal Justice System Contact at Ages 18 to 27 Years and Preventive Health Care at Age 29 Years: National Longitudinal Survey of Youth 1997, United States, 1997 to 2015–2016

	Cholesterol Test, OR (95% CI)	Blood Sugar Test, OR (95% CI)	Blood Pressure Test, OR (95% CI)
Arrest			
Unmediated: arrested, ages 18–27 y	0.65 (0.56, 0.75)	0.75 (0.66, 0.86)	0.82 (0.71, 0.94)
Mediated			
Arrested, ages 18–27 y	0.78 (0.67, 0.92)	0.88 (0.76, 1.02)	1.05 (0.89, 1.23)
Highest grade level completed	1.04 (1.01, 1.07)	1.02 (0.99, 1.04)	1.04 (1.00, 1.07)
Weeks worked	0.96 (0.92, 1.00)	0.94 (0.91, 0.98)	0.96 (0.91, 1.01)
Household income	1.02 (0.98, 1.06)	1.02 (0.98, 1.06)	1.03 (0.99, 1.07)
Health coverage	2.34 (2.00, 2.74)	1.81 (1.56, 2.09)	1.90 (1.64, 2.20)
Medical checkup	5.08 (4.40, 5.85)	4.18 (3.66, 4.76)	8.59 (7.33, 10.06)
Incarceration			
Unmediated: incarcerated, ages 18–27 y	0.63 (0.50, 0.81)	0.78 (0.62, 0.98)	0.93 (0.75, 1.15)
Mediated			
Incarcerated, ages 18–27 y	0.81 (0.62, 1.07)	0.93 (0.73, 1.20)	. . .
Highest grade level completed	1.05 (1.02, 1.08)	1.02 (0.99, 1.05)	. . .
Weeks worked	0.96 (0.92, 1.00)	0.95 (0.91, 0.98)	. . .
Household income	1.02 (0.98, 1.06)	1.02 (0.98, 1.06)	. . .
Health coverage	2.37 (2.02, 2.78)	1.82 (1.57, 2.11)	. . .
Medical checkup	5.08 (4.40, 5.85)	4.18 (3.66, 4.76)	. . .

Note. CI = confidence interval; OR = odds ratio. Sample size n = 7740. Outcomes are modeled by using logistic regression. Each model is adjusted for the National Longitudinal Survey of Youth 1997 survey design and includes covariates for gender, race/ethnicity, birth year, urban location, family structure, parental education, mother's age at respondent's birth, self-reported health, adolescent health coverage, Armed Services Vocational Aptitude Battery score, victimization, antisocial peers, gangs in neighborhood, perceived risk of arrest, gang member, delinquency, cigarette use, marijuana use, and binge drinking.

Hispanics had higher odds of having a blood sugar test relative to incarcerated Whites. Together, the analyses suggest that the associations between criminal justice contact and preventive care were mostly consistent across race/ethnicity, but in a few instances, there were better outcomes associated with groups other than non-Hispanic White.

Lastly, we subjected our main findings to sensitivity checks by replicating the associations between criminal justice contact and preventive health care by using propensity score weighting[31] and entropy balancing[32]; these are methods that are thought to be more rigorous by reducing the potential impact of selection bias. In all cases, the results were substantively similar to the main findings (Table C, available as a supplement to the online version of this article at http://www.ajph.org).

DISCUSSION

Using nationally representative data from the NLSY97, our study represents the first examination, to our knowledge, of the associations between criminal justice contact and preventive health care use. The results suggest 3 main conclusions. First, compared with those who did not have criminal justice contact from ages 18 to 27 years, those who were arrested or incarcerated tended to have a lower likelihood of using preventive health care. Net of a wide range of covariates, previously arrested individuals reported a lower likelihood of getting blood cholesterol, blood sugar, and blood pressure screenings at age 29 years, and previously incarcerated individuals reported a lower likelihood of getting a blood cholesterol and blood sugar screening (but not a blood pressure check) at age 29 years. These findings extend previous research by suggesting that not only are previously arrested and incarcerated individuals more likely to experience a wide range of health problems[7–10] but they are also less likely to use preventive health care, which could potentially prevent or mitigate many health problems. Future research should consider examining whether criminal justice contact influences other forms of preventive care (e.g., immunizations and mental health screenings).

Second, our findings suggest that much of the difference in preventive health care use among those with and without criminal justice contact was explained by economic and blocked access variables. The 1 exception was employment, which was negatively correlated with blood sugar test; such a finding—although unexpected—has been documented in at least 1 other study that showed that high hours worked sometimes constrains time for accessing health care.[33] This indicates that mass incarceration negatively influences preventive care use—in part, by reducing formerly arrested and incarcerated individuals' access to health care coverage and medical services and their ability to afford those services. In this way, criminal justice contact functions both as a social determinant of health itself and as a predictor of other important social determinants of health.

Third, we found that the association between criminal justice contact and preventive care was mostly similar across race/ethnicity, although there were a few differences

TABLE 3—Associations Between Criminal Justice Contact at Ages 18 to 27 Years and Preventive Health Care at Age 29 Years Moderated by Race/Ethnicity: National Longitudinal Survey of Youth 1997, United States, 1997 to 2015–2016

	Cholesterol Blood Test, OR (95% CI)	Blood Sugar Test, OR (95% CI)	Blood Pressure Check, OR (95% CI)
Arrest			
Not arrested			
Non-Hispanic White (Ref)	1	1	1
Non-Hispanic Black	1.15 (0.97, 1.36)	1.35 (1.15, 1.59)	1.19 (0.97, 1.46)
Hispanic	1.15 (0.96, 1.36)	1.36 (1.15, 1.62)	1.03 (0.84, 1.26)
Other race/ethnicity	1.04 (0.76, 1.43)	1.21 (0.90, 1.62)	0.88 (0.60, 1.28)
Arrested			
Non-Hispanic White	0.60 (0.49, 0.73)	0.73 (0.61, 0.88)	0.76 (0.63, 0.92)
Non-Hispanic Black	0.73 (0.57, 0.94)	0.93 (0.73, 1.17)	1.06[a] (0.83, 1.35)
Hispanic	0.97[a] (0.73, 1.29)	1.24[a] (0.95, 1.63)	0.97 (0.74, 1.29)
Other race/ethnicity	0.89 (0.47, 1.68)	1.06 (0.59, 1.91)	0.88 (0.49, 1.55)
Incarceration			
Not incarcerated			
Non-Hispanic White (Ref)	1	1	1
Non-Hispanic Black	1.15 (0.98, 1.34)	1.35 (1.16, 1.57)	1.22 (1.02, 1.47)
Hispanic	1.22 (1.04, 1.44)	1.42 (1.21, 1.66)	1.11 (0.92, 1.34)
Other race/ethnicity	1.09 (0.81, 1.45)	1.27 (0.97, 1.66)	0.94 (0.67, 1.31)
Incarcerated			
Non-Hispanic White	0.56 (0.38, 0.81)	0.80 (0.57, 1.11)	0.90 (0.66, 1.23)
Non-Hispanic Black	0.76 (0.52, 1.12)	0.87 (0.61, 1.25)	1.26 (0.89, 1.78)
Hispanic	0.95 (0.57, 1.60)	1.46[b] (0.91, 2.36)	0.95 (0.61, 1.47)
Other race/ethnicity	1.16 (0.37, 3.70)	0.77 (0.23, 2.54)	0.94 (0.29, 2.97)

Note. CI = confidence interval; OR = odds ratio. Sample size n = 7740. Outcomes are modeled by using logistic regression. Each model is adjusted for the National Longitudinal Survey of Youth 1997 survey design and includes covariates for gender, birth year, urban location, family structure, parental education, mother's age at respondent's birth, self-reported health, adolescent health coverage, Armed Services Vocational Aptitude Battery score, victimization, antisocial peers, gangs in neighborhood, perceived risk of arrest, gang member, delinquency, cigarette use, marijuana use, and binge drinking.
[a]Post hoc *t* test shows this category is significantly different from non-Hispanic White, arrested, at *P* < .05 (2-tailed).
[b]Post hoc *t* test shows this category is significantly different from non-Hispanic White, incarcerated, at *P* < .05 (2-tailed).

indicating better outcomes for Hispanic and non–Hispanic Black participants relative to non–Hispanic White participants. This finding suggests that even though non–Hispanic Black and Hispanic individuals are more likely than non–Hispanic White individuals to experience mass incarceration,[1,2,7] there is less clarity in how racial/ethnic preventive care use follows criminal justice contact. Thus, although mass incarceration disproportionately affects racial/ethnic minorities, future research should continue to examine race/ethnicity differences in outcomes following criminal justice contact such as preventive care.

Limitations

Our study had limitations. First, our results pertain to preventive health care at age 29 years. Thus, it is unclear how mass incarceration would be associated with preventive care later in life, when such care could be more consequential. Second, all the measures in this study are self-reported. Thus, we were unable to independently verify that respondents were arrested, incarcerated, and used preventive care. Even so, past studies have shown that self-reported criminal justice contact is highly correlated with official records.[34] Third, although we implemented multiple imputation, we still deleted cases with missing data on the dependent variables, which could introduce bias into our analyses. Fourth, the statistical associations in this study came from observational data that prevent causal conclusions. Although we controlled for a robust set of covariates, it is possible that those who experienced criminal justice contact differ in unobserved ways from those who did not experience contact.

Public Health Implications

Preventive health care use is an important area of study. Not only is preventive care associated with lower rates of disease, pain, and suffering, it is also associated with reductions in health care costs.[12] Our finding that 2 different forms of criminal justice contact reduce the likelihood of preventive care use illustrates an additional way that mass incarceration acts as a social determinant of health, which has implications for both individuals who experience criminal justice contact and broader society via increased costs of health care. As a point of intervention, policymakers and practitioners might consider providing greater access to preventive health care during jail and prison stays. **AJPH**

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