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How Far Up the River? Assessing the Health Consequences of Criminal Justice Contact

Abstract

The rapid and steady increase of incarceration has had substantial consequences on health outcomes due to exposure and transmission of disease. Research has shown that physical and mental health outcomes for imprisoned populations are affected by residence in a carceral institution. The exposure to individuals with communicable diseases facilitates the transmission of disease while the stress of incarceration and lack of adequate medical facilities assist in exacerbating existing conditions. Given that the jail population grew in line with prison incarceration during this period, the health effects of less severe forms of criminal justice contact should be investigated. Using the NLSY97, this project explores both the transmission and exacerbation of previous medical illnesses as a result of arrests, convictions and short jail stays. In addition, I ascertain the effect on mental health as a result of criminal justice contact, controlling for treatment availability inside and outside of the institution.

Introduction

Since the early 1980s, the incarceration rate has climbed from 221 to 492 per 100,000 people (Carson & Sabol, 2012). One in 34 Americans are under criminal justice surveillance, counting those who are incarcerated, on parole or probation (BJS, 2012). According to the Bureau of Justice Statistics (BJS), the jail population rose steadily throughout the last twenty years, but growth has slowed since 2009. In the 12 month period ending in June 2010, almost 13 million people were admitted to local jails, with 9 million unique admissions (Beck, 2006). The rising incarceration rate captured a significant proportion of economically and socially disadvantaged individuals who often lack access to basic health services. Over one-third of male jail inmates and more than half of female inmates report an existing medical condition at admission (BJS, 2011). The rapid increase in population resulted in overcrowded conditions in the nation's prison, jails and detention centers. These conditions provide prime opportunities for the transmission of disease, the worsening of existing medical illnesses and the increased susceptibility to

negative mental health outcomes as a result of heightened stress levels in the carceral environment. This project seeks to explore the possible effects of other forms of criminal justice contact such as arrests – both with and without conviction – and short term incarceration in a jail setting on physical and mental health outcomes through the mechanisms of exposure, lack of medical care and stress.

The aim of this project is to assess the extent to which exposure to the carceral environment is similar or different from more protracted contact, especially in the form of imprisonment. Research has shown that both physical and mental health outcomes for imprisoned populations are affected by residence in a carceral institution. The exposure to individuals with communicable diseases in a crowded and contained environment facilitates the transmission of disease while the stress of incarceration and lack of adequate medical facilities assist in exacerbating existing conditions. Using the NLSY97, I explore the effect of low-level criminal justice contact on the transmission and exacerbation of medical conditions as well as the effect on mental health outcomes.

Theoretical framework & existing evidence

Exposure to disease

The mechanisms at play for health outcomes can be explained by the exposure to and transmission of disease in the carceral environment. An arrest, conviction or jail stay represents a separation from society, removing the individual from their daily life and exposing them to conditions that may heighten risk of injury or disease. Exposure to individuals with communicable diseases in a crowded environment facilitates the transmission of disease while the stress of incarceration and lack of adequate medical facilities assist in exacerbating existing conditions. These medical complications, combined with the psychological stressors that are associated with exposure to the carceral environment, can hinder reintegration and increase disadvantage. This project will draw on theories of incapacitation, disease exposure and stress to investigate the ways in which low-level forms of criminal justice contact affect the transmission of disease.

In terms of transmission, the existing literature documents the relative ease of chronic disease transmission given the existing conditions of the population, the lack of health care in the communities

that inmates generally originate from and the close quarters, which facilitate both the transference of new diseases and exacerbate existing conditions (Massoglia, 2008; Hoyert et al., 2006). Schnittker, Massoglia and Uggen (2011) report that the levels of communicable diseases such as tuberculosis and Hepatitis C are elevated for imprisoned populations. Furthermore, increased stays, whether due to the inability to pay bail or a lengthy sentence, exacerbate existing conditions due to overcrowding and lack of quality health care services available. In an attempt to evaluate the effect of imprisonment on health, Massoglia (2008) uses the NLSY79 to parse out factors that contribute to racial differences in health disparities. He contends that the introduction of incarceration attenuates racial differences in health by almost 70% and renders racial differences non-significant, with incarceration contributing to persistent racial differences in midlife health functioning. Massoglia suggests that the lack of control over life processes and the barriers to full participation in society serve as the mechanisms between incarceration and mental and physical health outcomes, with imprisonment serving as a fundamental system of stratification (297). The presence of similar elements in the jail environment suggests that comparable effects and mechanisms might influence the health outcomes for a low-level offender population.

A number of public health studies have investigated the link between short-term imprisonment and a range of health effects, but with a concentrated focus on chronic diseases, sexually-transmitted infections and injuries (Binswanger et al., 2009; Potter et al., 2011; Conklin et al., 2000; Van Hoeven et al., 1990; Minshall et al., 1993; Kahn et al., 2004; Solomon et al., 2004; MacGowan et al., 2009; Javanbakht et al., 2009; Hammett et al., 2002). Compared to the general non-incarcerated and prison populations, the death rate from heart disease for jailed populations is lower at 32 per 100,000 inmates compared to 233 and 69, respectively. Chronic diseases such as cancer, HIV/AIDS and liver disease make up 11% of deaths overall. The remainder of natural deaths (19%) occurs from a varied host of communicable and chronic diseases, ranging from influenza and hepatitis to diabetes and cerebrovascular diseases (e.g. strokes). The majority of deaths from heart disease (32%) occur within the first seven days after admission. The first seven days of incarceration appears to be critical to the health and wellbeing of inmates, suggesting that even the short term exposure to the jail environment can be detrimental.

Furthermore, the jail inmate populations differ from the prison population not only in terms of age, education level, marital and employment status but also in their rapid cycling back into the larger community.

Potter et al. (2011) provide an accounting of the medical health studies to date that have focused on jail inmates, finding that substantial empirical work has been conducted across a range of infectious and chronic diseases as well as serious injury. In the review section of the paper, the authors register concern that most studies do not obtain information about the average length of stay for the surveyed or interviewed inmates, thereby introducing a fair amount of selection bias into the ultimate findings. Also, the existing literature depends largely on felony offenders, who are not representative of the jail population as a whole, and the measure of health issues focuses predominately on diseases present at time of admission, inhibiting the assessment of health impacts while incarcerated. Potter and colleagues suggest that the current body of research does not reflect the true nature of jail inmate health given the sampling design of both offenders and jail sites. The authors caution against making generalizations from the existing empirical conclusions, especially in terms of the influence of jail imprisonment on both the health of the former inmate as well as detrimental health effects to the broader community. They suggest that jail, similar to the lack of quality health care and the high price of prescriptions, may serve as yet another factor that endangers the health of disadvantaged populations.

This evidence suggests that exposure, whether short-term or long-term, can have detrimental consequences for the individual. In line with the existing evidence, the project's research hypothesis argues that exposure to individuals with communicable diseases in a crowded carceral environment facilitates the transmission of disease. While much of the existing empirical evidence centers on prisons as the venue of interest, it stands to reason that similar conditions that facilitate transmission would be present in jails, resulting in similar exposure effects to longer term incarceration. Exploring exposure effects beyond prison walls can assist in informing the scope of the consequences of criminal justice contact, especially the forms of contact that capture the greatest number of individuals. The implications

of detrimental outcomes from low-level forms of contact can be widespread, especially for the populations most often caught in the net of the criminal justice system.

Access to medical services

The populations that are disproportionately represented in jails and prisons are also those who have limited access to medical health services and treatments in their communities (Smedley et al., 2003). Public health research has shown a wide disparity in health outcomes, especially among low-income African American males. Such outcomes result from lower rates of health insurance in these communities and decreased access to low-cost medical clinics. The increase in incarceration among these populations can potentially improve pre-existing conditions due to the mandated access to basic medical screenings and treatment. Any access to health care may assist in ameliorating the medical disadvantage that exists in their outside communities. However, this effect is largely conditional on the time spent incarcerated and the availability and quality of the medical services available in the jail institution. This project will determine how access to medical services, both inside and outside of the carceral institution, affects general health outcomes for arrests, convictions and jail stays.

The current state of research on public health related outcomes of incarceration show mixed results. On the one hand, incarceration can lead to the transmission of communicable disease and the potential for problematic injuries (Pogrebin et al., 2001; Binswanger et al., 2009). However, empirical work has suggested that time in the carceral institution can provide medical screenings and treatment for a segment of the population that is not generally privy to these services (Hammett et al., 2002; Schnittker & John, 2007). In the first case, exposure to communicable and infectious diseases in the jail facilities can lead to the establishment or exacerbation of medical and mental health complications due to lack of quality healthcare and/or access to medication while incarcerated and the exposure to communicable diseases (Bell et al., 2004; Binswanger et al., 2009; Wilper et al., 2009). Schnittker, Massoglia and Uggen (2011) report elevated levels of communicable diseases such as tuberculosis and Hepatitis C are elevated imprisoned populations, but also find improved outcomes for African American inmates given the availability of medical services in the carceral environment. Bell et al. (2004) and Binswanger et al.

(2009) focus on the public health effects of exposure to both jail and prison institutions, both finding detrimental consequences due to increased stress in the carceral environment and the uneven distribution of medical and mental health care and treatment. Wilper et al. (2009) explore the prevalence of chronic illnesses in both the jail and prison environment, finding that a sizable proportion of inmates report conditions such as diabetes, asthma, hypertension and HIV/AIDS upon admission. Their results also suggest divergent levels access to medical care depending on the type of carceral facility; 13.9% of federal inmates and 20.1% of state prison inmates did not receive a medical screening after incarceration. However, 68.4% those held in local jails did not receive a medical examination. Such results are in line with the Department of Justice investigation (2007) into conditions at King County jails. They confirmed the allegations of former inmates, uncovering substantial evidence that staff regularly delayed or refused medical treatment. The investigation found that the assessment procedures for identifying and treating acute and chronic conditions were inadequate and attempts at emergency care and medication management were deficient (DOJ, 2007). Treatment for acute and chronic conditions was delayed or refused by jail personnel, resulting often in a worsening of conditions or death in at least one instance.

Empirical findings have also shown that inmates' conditions can be markedly improved in the carceral setting. Bell et al. (2009) find that pregnancy outcomes for women in jail range depending on the level of resources available and the institutional access provided. Schnittker, Massoglia and Uggen (2011) review the existing literature on the link between incarceration and health for African Americans. They report moderate positive outcomes from incarceration for African American men due to access to medical assessments and treatment that may have been neglected when in the community: "... at least 70% of prisoners with a medical problem report seeing a medical professional while incarcerated, and slightly more report receiving a medical exam or blood test since admission" (Schnittker et al., 2011: 3). Health clinic services and the availability of medical insurance are largely lacking in predominately low-income African American communities (Smedley et al., 2003). Therefore, the sustained exposure to even inconsistent health care services in the prison environment may be a vast improvement over the health resources that are generally accessible for this population. The quality and certainty of medical attention

and treatment, however, is often predicated on the geographical location of the jail and is not consistent across all populations. Schnittker and colleagues, however, find that existing research shows consistent negative effects from incarceration that far outweigh the positive outcomes, especially after release. They document evidence of intra-prison transmission for chronic diseases and the exacerbation of existing conditions because of insufficient treatment options and the increase in stress in the prison environment. The race effects for health are mixed; the sheer racial disproportionality of incarceration pointing to a potential contributor to health disparities while other research shows weaker racial links. This research is focused solely on prison incarceration; the effects for shorter jail stays might reveal similar complexities, if only on a limited scale.

This project will seek to uncover the effect of an arrest or jail stay on the development or worsening of an illness while controlling for the access to health care both inside and outside of the jail. In line with the split in the literature, the hypothesis for this project argues that the availability of medical care and treatment in jail can either improve or worsen health, conditional on the length of time incarcerated and the access to health care services for the individual outside of jail. The availability of services and the efficacy of treatment range dramatically across carceral institutions. Therefore, there is not a standardization of medical care nor are there static outcomes, as can be seen in the divergent the findings of various empirical studies. However, it seems that there is a consensus which suggests that the mandating of health care in carceral institutions provides services and treatment that inmates would not be able to procure otherwise on the outside. Since lower-levels of criminal justice contact capture a greater proportion of the public than prison incarceration, the investigation of these outcomes and mechanisms for arrests, convictions and jail stays may be significant in understanding the role that these institutions play in offering health care services to disadvantaged populations.

Effect of stressful environment

The psychological stress from the loss of freedom, conditions of incarceration and impending legal proceedings detrimentally affects both the physical and mental health of the inmate. While the length of exposure is extended for those in prison compared to jail, the health outcomes suggest that brief

jail stays can have detrimental and debilitating health and wellbeing effects for inmates. Scholars (Wilper et al., 2009; Massoglia, 2006; Schnittker & John, 2007) have identified the source and consequences of stressors in the prison environment. Since conditions between jail and prison are operationally similar, it would follow that mental health outcomes may be similarly affected for those incarcerated for a relatively shorter time period. In a 2006 Bureau of Justice Statistics report, 64% of jail inmates reported either a recent history or symptoms of a mental illness (James & Glaze, 2006). According to the report, the incidences of depression and psychotic disorders in jail are greater than those in state prisons. Yet, only 17.5% of jail inmates who receive a mental health diagnoses after admission are treated (James & Glaze, 2006). The stigma that accompanies incarceration and other forms of criminal justice contact can heighten stress effects, allowing them to persist after contact or imprisonment has ended. In their investigation of stigma-related effects of prison incarceration on health, Schnittker and John (2007) find that it is not the length of contact with the prison institution but any contact at all that results in pervasive stigma effects. The potential for similar effects for low-level contact has long-ranging mental health implications for even fleeting encounters with the criminal justice system.

The incidences of mental illness in the carceral environment are increased by the conditions present in the institution, the stress and strain of impending court proceedings and the separation from family and responsibilities as well as the lack of consistent mental health services. According to the Bureau of Justice Statistics (2007), nearly a quarter of deaths in jail custody occurred within 2 days of admission, and more than a third (approximately 38% between 2000 and 2007) happened in the first seven days. The majority of deaths (56%) occur within the first thirty days after admission. The majority of deaths (53%) were due to illness, with heart disease constituting the bulk of those deaths (22%). The ineffective implementation of protective procedures for medically and psychologically fragile inmates, especially at the time of admission, fails to safeguard the jail atmosphere for the inmate population. Suicide is the leading cause of unnatural death for inmates, with 29% of deaths attributable to self-inflicted harm. Sixty-four percent of suicides occurred within the first thirty days of confinement, with 47% of such incidents occurring within 7 days of admission (BJS, 2007). In comparison to prison inmates

from 2001-2007, the rate of suicides in jail was nearly three times that of prison inmates. From 2001 to 2007, the rate of suicide deaths in prison was 16 per 100,000 prisoners while the rate for jail inmates was 42 (BJS, 2007). The lack of access to mental health services in smaller institutions appears to be a significant contributing factor to the vast differences between jail facilities. The quick turnover in these smaller jail institutions may affect the timing and access to such services, especially in the critical period in the first seven days of confinement. Wilper and colleagues (2009) report that approximately 25% of prison inmates have a psychiatric diagnosis; if the rates are similar for jailed populations, there is a clear need for more immediate and intensive attention to psychological issues. Given these stark numbers, it seems imperative to investigate the role of all forms of criminal justice contact on mental and physical health outcomes in order to realize the full impact of incarceration, whether temporary in the form of an arrest or protracted in terms of a jail sentence, on the individual.

Detrimental mental health outcomes are largely predicated on the availability of mental health services in a given institution. If such services are not provided or are denied, the potential consequences for mental health outcomes following a stint in jail may be dire. The Bureau of Justice Statistics finds that the rate of suicide for jail inmates far outstrips the rate for prison inmates. The report cites the lack of proper staff intervention practices as a key factor in driving the suicide rate in jail. As an illustration, the Department of Justice report on King County jails details the failures of correctional staff to adequately monitor and protect inmates from suicide attempts. Only a small fraction of King County administrative staff were given cursory training in suicide prevention techniques, and the procedures for supervising inmates who had attempted suicide fell well below acceptable corrections standards. The standardization of jail procedures across jurisdictions is inconsistent; as the King County jail facilities case illustrates, while corrections procedures often mandate a standard level of treatment and assessment, actual conditions and practices are often far from ideal.

The available evidence suggests that criminal justice contact can have a profound effect on stress levels for the individual and can pattern outcomes such as depression, mental illness and in the extreme, suicide. This project will attempt to determine how criminal justice contact in the form of an arrest,

conviction or jail stay affects mental health outcomes, arguing that the stress of incarceration worsens existing conditions and detrimentally affects mental health outcomes. Stress in these situations can result from the separation from family and community as well as the weight of impending court appearances and legal wranglings. When incarcerated in jail, the environment can provide heightened stress levels without mental health services to mitigate the emotional effects. Given that a significant portion of the jailed population report an existing mental illness or emotional disturbance such as pervasive depression, the potential for negative outcomes when exposed to such institutions could be substantial.

Data

Using the National Longitudinal Study of Youth (1997) survey, I will evaluate the effect of arrests, convictions and short terms jail stays on mental and physical health outcomes. The data set offers the ability to track respondents over time and assess their level of contact, if any, with the criminal justice system. Sample respondents were born between 1980 and 1984 and were 12-18 years of age at the first interview. The survey records arrests, convictions, jail and prison stays and selected outcomes from this type of contact. Specifically, the survey asks respondents to self-report any difficulty in obtaining housing or employment, any experiences of losing housing or employment or problems associated with child support and public benefits. Also, respondents report the availability of amenities available during their jail or prison stay, including medical and mental health services. There are only a limited number of data sets, especially those with a nationally representative sample, that capture both the incidence and effect of other forms of criminal justice contact. Therefore, the NLSY97 provides a substantial amount of data on a question (about short-term jail incarceration) most often left out of traditional nationwide surveys.

While the NLSY97 is the best possible data set to explore the employment, housing and health outcomes of criminal justice contact, it is not without its limitations. It is possible that respondents may omit incidents of criminal justice contact. Also, the number of people in the original population that have had contact is small, which is a challenge given the nature of the research questions being posed for this project. Therefore, the NLSY97 provides a unique opportunity to gauge the effect of incarceration and

less severe forms of criminal justice contact and evaluate the mechanisms that undergird these outcomes. Given the limited sample for these outcomes, racial and gender effects will not be analyzed, thereby limiting the scope of the analysis. The current project will only be able to focus on male respondents, which truncates the range of effects as well as the ability to fully ascertain the scope of effects on employment, housing and health effects. However, there are a limited number of data sets that ask questions about contact beyond prison stays and none that are currently available that tap into questions about outcomes.

Measures

Models will be constructed to investigate the relationships between different forms of criminal justice contact and potential outcomes using the appropriate measures of physical and mental health. For physical health, the measure is a self-reported assessment of general health: “In general, how is your health?” It is coded 1 for poor, 2 for fair, 3 for good, 4 for very good and 5 for excellent. The NLSY97 also includes measures of smoking behavior, asking respondents how many cigarettes they smoked in the last thirty days. In addition, there is a measure of the number of doctor visits in the last thirty days. For those incarcerated, there is a measure of medical health treatment accessed during incarceration. For mental health, the measure is a count variable that asks about the number of times in the last month the respondent has been depressed.

Methods

To explore the relationship between physical and mental health and low-level criminal justice contact, I performed a series of preliminary ordinal logistic models in Stata. All models control for basic demographic variables such as race, age, marital status, presence of children in the household, income and education level in 2010, unless otherwise noted. In addition, crime and delinquency-centered controls were added, assessing the severity of contact and the respondent’s history of arrest and incarceration. Each outcome (general health and depression for physical and mental health, respectively) will be analyzed through three separate models that investigate at the role of arrest, conviction and jail stay independently. Table 1 contains descriptives of the relevant variables used in the models.

Table 1: Descriptives

	<i>Mean</i>	<i>Standard deviation</i>	<i>Minimum</i>	<i>Maximum</i>
Health variables				
General health	3.69	0.983	1	5
Depressed	3.67	0.577	1	4
Doctor visits (12 months)	1.51	1.509	1	5
# of cigarettes	9.35	8.86	0	60
Criminal justice contact variables				
Arrests (n=4130)	3.28%			
Total arrests	1.55	1.74	1	19
Convicted (n=2772)	2.20%			
Jail (n=868)	0.69			
Prison (n=714)	0.57%			
In jail (n=490)	0.39%			
In prison (n=42)	0.03%			
Demographics				
Age	27.89	1.43	25	31
Gender (male)	51.19%	-	-	-
Income (dollars)	31785.2	23232.87	0	130254
Income (logged)	10.04	0.994	1.39	11.77
Education (years)	12.73	1.50	6.79	21.79
Marital status	6.26	5.89	1	37
Children	0.211	0.408	0	1
Immigrant	2.85%	-	-	-
White	58.24%	-	-	-
African American	26.58%	-	-	-
Asian	1.78%	-	-	-
Latino	21.14%	-	-	-
Native American	0.68%	-	-	-
Other	11.83%	-	-	-
Mixed	0.92%	-	-	-
N = 8975 (2010)				

Results

Table 2 provides results for the first three models, which show the effect of being arrested on general health outcomes. Model 1 is a baseline, without controls for access to medical care or health behaviors. The results show that being arrested has a negative effect on health, consistent with the literature on this type of low-level contact. Similarly, being African American also has a negative effect, which is in line with the literature on populations disadvantaged by the lack of access to health care services and treatments. Income and marriage both appear to have ameliorative effects on health,

independent of the arrest. Model 2 shows the addition of doctor visits to the effect on general health, and the results are consistent with the baseline findings, with arrests still exhibiting a negative effect on health outcomes. The measure for doctor visits in the last 30 days, however, also has a negative relationship with general health. This may suggest that those who frequent doctor's offices are those who have lower general health measures at the outset, therefore, their health may be lower to begin with. Model 3 adds number of cigarettes smoked in the last thirty days as a measure of risky health behavior. The model results are consistent with models 1 and 2, with cigarettes showing an expected decrease in health outcomes. Interestingly, the effect of being male fell out of the model, suggesting that any positive effect of gender may be dissolved when taking into account unhealthy behaviors such as smoking.

Table 2: Ordinal logistic regression results for the effect of arrests on general health outcomes

	Model 1	Model 2	Model 3
<i>Arrests</i>	-0.258*** (0.041)	-0.255*** (0.043)	-0.204** (0.055)
<i>Doctor visits (2009)</i>		-0.215*** (0.007)	-0.184*** (0.013)
<i>Married</i>	0.189*** (0.015)	0.199*** (0.015)	0.258*** (0.028)
<i>Children</i>	-0.118*** (0.016)	-0.126*** (0.016)	-0.231*** (0.029)
<i>Cigarettes smoked in last 30 days</i>			-0.015*** (0.002)
<i>Age</i>	-0.058*** (0.005)	-0.057*** (0.005)	-0.069*** (0.009)
<i>Male (1997)</i>	0.153*** (0.014)	0.093*** (0.014)	0.046 (0.027)
<i>African American</i>	-0.051** (0.017)	-0.091*** (0.017)	-0.105** (0.033)
<i>Education</i>	0.097*** (0.003)	0.102*** (0.003)	0.060*** (0.005)
<i>Income (logged)</i>	0.132*** (0.008)	0.139*** (0.008)	0.107*** (0.013)
<i>Log likelihood</i>	-93915.5	-90439.8	-28243.9

All values are from 2010 unless otherwise noted

p < 0.05 * p < 0.01 ** p < 0.001 ***

Table 3 provides results for the second round of models, which show the effect of being convicted on general health. Model 1 shows a negative effect of conviction on health, suggesting that contact without an arrest can detrimentally impact health outcomes. Similar with the results for arrest,

income, marriage and education have ameliorative effects on health even with the presence of low-level criminal justice contact. With the addition of doctor visits in Model 2, the results are consistent with previous models, with convictions and doctor visits showing a negative relationship with general health outcomes. With the addition of cigarette use in Model 3, the effect of being convicted drops a bit in terms of significance and gender drops out of the model. Overall, the results for arrests and convictions look strikingly similar, suggesting that these two forms of contact may operate in a similar fashion, especially when taking health outcomes into account. The negative relationship on health with both arrests and convictions suggests that any beneficial effect of criminal justice contact on health may not be available to those who are engaged in the lowest forms of contact. It may be that an individual must be imprisoned in order to see any benefit from contact.

Table 3: Ordinal logistic regression results for the effect of being convicted on general health outcomes

	Model 1	Model 2	Model 3
<i>Convicted</i>	-0.349*** (0.049)	-0.281*** (0.052)	-0.386** (0.066)
<i>Doctor visits (2009)</i>		-0.214*** (0.007)	-0.183*** (0.013)
<i>Married</i>	0.189*** (0.015)	0.200*** (0.015)	0.257*** (0.028)
<i>Children</i>	-0.119*** (0.016)	-0.126*** (0.016)	-0.234*** (0.029)
<i>Cigarettes smoked in last 30 days</i>			-0.015*** (0.002)
<i>Age</i>	-0.057*** (.005)	-0.057*** (0.005)	-0.069*** (0.009)
<i>Male (1997)</i>	0.153*** (0.014)	0.092*** (0.017)	0.052 (0.027)
<i>African American</i>	-0.050** (0.016)	-0.090*** (0.017)	-0.108** (0.033)
<i>Education</i>	0.097*** (0.003)	0.102*** (0.003)	0.061*** (0.005)
<i>Income (logged)</i>	0.132*** (0.008)	0.139*** (0.008)	0.106*** (0.013)
<i>Log likelihood</i>	-93910.23	-90443.1	-28233.6

All values are from 2010 unless otherwise noted

p < 0.05 * p < 0.01 ** p < 0.001 ***

Table 4 provides insight into the potential for beneficial effects from criminal justice contact. The models here show the effect of being in jail on general health outcomes. Model 1 shows a positive and statistically significant effect of being in jail on health outcomes. Consistent with Schnittker, Massoglia and Uggen's (2011) work, among others, this result suggests that incarceration in a jail setting may have beneficial effects on health. As previously discussed, such positive effects may be the result of protective measures taken in jail, where individuals are shielded from the possible violence in their neighborhoods. Also, jails increase access to medical screenings and treatment for individuals who do not enjoy the availability of these services in their communities. With the addition of doctor visits in Model 2, we can gain insight into the potential mechanisms behind this initial baseline finding. Model 2 still shows a positive effect of being in jail, with an increase in the significance level to the 0.001 level. However, the number of doctor visits shows a negative effect. While this is consistent with previous models, it does not seem to fit with the hypothesis that incarceration offers greater access to health care and thereby has a positive effect on health outcomes. The issue may be that the doctor visit measure is from the previous year; the NLSY97 did not provide a measure for doctor visits from 2010. The measure also does not specify if doctor visits were conducted inside or outside of the carceral institution. It is possible that this general measure for health care services does not tap into the incarceration-specific care that may have been offered to ameliorate any existing medical conditions. In Model 3, the coefficient for being in jail turns negative but the result is no longer statistically significant. This result suggests when controlling for risky health behaviors such as smoking, the effect of criminal justice contact is no longer relevant for health outcomes. Since incarceration, even in terms of a short-term jail stay, generally limits or inhibits unhealthy habits, it is possible that adding in smoking behavior erases any of the ameliorative effects that the medical services in the carceral institution may have on the individual's health. More investigation needs to be done on this particular relationship, to ascertain the true nature of the association between health and admission into jail.

Table 4: Ordinal logistic regression results for the effect of being in jail on general health outcomes

	Model 1	Model 2	Model 3
<i>In jail</i>	0.308** (0.120)	0.618*** (0.131)	-0.629 (0.301)
<i>Doctor visits (2009)</i>		-0.215*** (0.007)	-0.185*** (0.013)
<i>Married</i>	0.196*** (0.015)	0.206*** (0.015)	0.262*** (0.028)
<i>Children</i>	-0.119*** (0.016)	-0.126*** (0.016)	-0.232*** (0.029)
<i>Cigarettes smoked in last 30 days</i>			-0.015*** (0.002)
<i>Age</i>	-0.058*** (0.005)	-0.057*** (0.005)	-0.069*** (0.009)
<i>Male (1997)</i>	0.145*** (0.014)	0.085*** (0.014)	0.037 (0.027)
<i>African American</i>	-0.048** (0.017)	-0.088*** (0.017)	-0.105** (0.033)
<i>Education</i>	0.098*** (0.003)	0.104*** (0.003)	0.061*** (0.005)
<i>Income (logged)</i>	0.136*** (0.008)	0.143*** (0.008)	0.111*** (0.013)
<i>Log likelihood</i>	-93931.9	-90446.4	-28250.8

All values are from 2010 unless otherwise noted

p < 0.05 * p < 0.01 ** p < 0.001 ***

While these are only preliminary results, they do suggest that there are consistent relationships between low-level forms of criminal justice contact and general health outcomes. The findings hint at potential beneficial effects for being incarcerated in jail, provided that certain behaviors are curtailed. The negative results for being arrested and convicted may reflect the disadvantage in terms of health care services and treatment that generally plagues those most likely to be arrested and convicted. These relationships, even in their preliminary forms, can provide insight into how even less severe forms of contact can register influence on health outcomes and can heap more disadvantage onto those individuals who face economic, occupational, educational and social barriers. The effect of low-level contact may further isolate these individuals and communities by restricting potential job and educational opportunities due to their criminal record and poor health. In future models, I will add in more controls, looking at the effect of immigrant status as well as a measure of time spent in the carceral institution to ascertain whether it is contact alone or time spent in jail that has an effect on health.

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