AMERICAN SOCIOLOGICAL ASSOCIATION

Journal of Health and Social Behavior
XX(X) 1–17

DOI: 10.1177/0022146512462400
http://jhsb.sagepub.com
SAGE

As Fathers and Felons: Explaining the Effects of Current and Recent Incarceration on Major Depression

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Abstract

Dramatic increases in the American imprisonment rate since the mid-1970s have important implications for the life chances of minority men with low educational attainment, including for their health. Although a large literature has considered the collateral consequences of incarceration for a variety of outcomes, studies concerned with health have several limitations: Most focus exclusively on physical health; those concerned with mental health only consider current incarceration or previous incarceration, but never both; some are cross-sectional; many fail to consider mechanisms; and virtually all neglect the role of family processes, thereby overlooking the social roles current and former prisoners inhabit. In this article, we use stress process theory to extend this research by first considering the association between incarceration and major depression and then considering potential mechanisms that explain this association. Results from the Fragile Families and Child Wellbeing Study (N = 3,107) show current and recent incarceration are substantially associated with the risk of major depression, suggesting both immediate and short-term implications. In addition, consistent with stress proliferation theory, the results show the well-known consequences of incarceration for socioeconomic status and family functioning partly explain these associations, suggesting the link between incarceration and depression depends heavily on the consequences of incarceration on economic and social reintegration, not only the direct psychological consequences of confinement.

Keywords

depression, fathers, Fragile Families and Child Wellbeing Study, incarceration, mental health

The American imprisonment rate has soared from approximately 100 per 100,000 individuals in the mid-1970s to approximately 500 per 100,000 individuals by the mid-2000s (Wakefield and Uggen 2010). Incarceration has broad implications for men's subsequent life chances. A burgeoning literature considers the consequences of incarceration for the employment, family life, and civic engagement of formerly imprisoned men, almost always documenting negative consequences (Wakefield and Uggen 2010). Specifically, incarceration compromises labor market prospects (Pager 2003; Western 2006), destabilizes and diminishes the

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quality of romantic relationships (Braman 2004; Nurse 2002; Western 2006), and undermines participation in the political process (Uggen, Manza, and Thompson 2006). Recently, research has turned to the health consequences of incarceration, demonstrating associations between earlier incarceration and hypertension (Wang et al. 2009), functional limitations (Schnittker and John 2007), infectious and stress-related diseases (Massoglia 2008a), and poor self-rated health (Massoglia 2008b).

Recent research has explored the effects of incarceration on psychiatric disorders. This research finds that the onset of most psychiatric disorders is prior to incarceration, but also that incarceration has an enduring impact on mood disorders, including major depression (Schnittker, Massoglia, and Uggen 2012). Although this research identifies the particular psychiatric disorders for which incarceration matters most, it leaves a number of issues unaddressed, including differences in the effects of current incarceration versus prior incarceration and what potential mechanisms might explain the association between incarceration and depression. Disentangling these issues is important for advancing research on the topic.

For one, it is possible the short- and long-term effects of incarceration on depression diverge. In the case of physical illness, there is some evidence incarceration improves health while in prison, owing to some combination of better health care and a safer environment, but diminishes health following release (Curtis 2011; Schnittker and John 2007; Spaulding et al. 2011). The same may be true of major depression, but the conditions of confinement may be much worse for mental health than physical health. Similarly, much research on incarceration considers the experience of living in a total institution, following the early lead set by Goffman (1961) and Sykes ([1958] 2007). For this reason, it is common to conceptualize the negative psychological effects of incarceration entirely in terms of the negative effects of confinement, regimentation, and predation. But it is perhaps equally important to consider the long-term effects of incarceration—that is, the processes that emerge only after release—especially insofar as they may reflect a process of stress proliferation and thus can speak to larger branches of the sociology of mental health literature (Pearlin 1989; Pearlin, Aneshensel, and Leblanc 1997). The negative effects of incarceration on depression may reflect how prior incarceration increases social stress while simultaneously undermining the capacity of former inmates to cope.

In this article, we begin where Schnittker et al. (2012) left off by (1) simultaneously considering the consequences of current and recent incarceration for depression, (2) testing the indirect mechanisms through which incarceration compromises mental health, and (3) using longitudinal data, which lend support to estimating both the effects of incarceration and the role of mediating mechanisms. We use the Fragile Families and Child Wellbeing Study, which contains repeated measures of incarceration and depression, repeated measures of potential mechanisms linking incarceration and depression, and a large sample of men experiencing incarceration.

BACKGROUND

For a variety of reasons, major depression is an important addition to research on the consequences of incarceration and not merely another entry into research on its health consequences. Major depression is among the most common and severe psychiatric disorders in the United States (Kessler et al. 2003). Furthermore, major depression is chronic. Although its symptoms cycle over time and occasionally disappear completely, the initial onset of depression increases the risk of future episodes, setting a course for long-term disadvantages (Kendler, Thornton, and Gardner 2000). Depression is fundamentally psychological and somatic, but it has strong behavioral consequences. Indeed, major depression is a leading cause of disability, and its influence on role impairment often exceeds that of common physical illnesses (Merikangas et al. 2007). Virtually all those suffering from major depression experience some resulting impairment (Kessler et al. 2003).

Recent research suggests that incarceration is associated with mood disorders, including major depression, and links depression to some of the disability former inmates experience after release (Schnittker et al. 2012; also see Steadman et al. 2009). But it is not clear if current and recent incarceration have differential associations with depression and, if so, what might explain these associations, leaving some important gaps. Understanding the potentially differential consequences of current and recent incarceration is relevant to understanding what exactly is stressful about incarceration. Whereas stud-

ies on current incarceration often consider the prison experience and the resulting psychological dysfunction, studies on former incarceration often consider the diminished socioeconomic opportunities resulting from discrimination and the stigma of a prison record. Both processes are likely relevant for major depression among current and former inmates, but considering both processes simultaneously is important for advancing theory. For this task, stress process theory is particularly useful, and studying the situation of current and former inmates can help inform stress process theory.

Stress Process Theory

Stress process theory suggests stressors emerge from the distinctive social contexts characterizing the lives of disadvantaged groups and that differential exposure to these stressors contributes to health inequalities (Pearlin 1989). Incarceration may be an important source of stress in this regard, given its concentration among minority, poorly educated men living in disadvantaged neighborhoods (Wakefield and Uggen 2010).

Moreover, incarceration may be an important source of *stress proliferation*, defined as "the expansion or emergence of stressors within and beyond a situation whose stressfulness was initially more circumscribed" (Pearlin et al. 1997:223). Stress proliferation distinguishes primary and secondary stressors while linking the two through a social process. According to this theory, a primary stressor (e.g., job loss) triggers the emergence of a series of secondary stressors (e.g., home foreclosure or divorce resulting from job loss) (Pearlin 1989). Perhaps the best example of stress proliferation in the current literature is job loss, although incarceration likely has even stronger consequences than job loss because of the number of secondary stressors involved. For one, incarceration can be stigmatizing for individuals even long after release (Braman 2004; Goffman 1961). Furthermore, incarceration affects a variety of social roles at once, including men's roles as employees, romantic partners, and fathers, and it does so both during incarceration and after release. Among other things, this idea suggests the pains of imprisonment may stem from the social consequences of incarceration—that is, from secondary stressors—as well as from the conditions of confinement itself. Even after release, stress proliferation is likely to occur and may perhaps grow. This point is often overlooked in research that considers only the primary stressors of incarceration, though these primary stressors are powerful.

Incarceration and Major Depression: Primary Stressors

The starting point of any discussion about the association between incarceration and depression is the experience of incarceration. A long line of research explores the psychological consequences of the incarceration experience, often under the more general concept of *prisonization* (Clemmer 1940; Goffman 1961; Sykes [1958] 2007). Prisonization refers to how current inmates *cope* with their environments and highlights how most inmates do not develop psychiatric disorders (see Bonta and Gendreau [1990] for a skeptical view of the pains of imprisonment), but there are adverse consequences to even the most effective coping strategies (Sykes [1958] 2007). Some argue the stress of incarceration emerges from the loss of liberty or from the isolation, confinement, and danger of the prison environment (Sykes [1958] 2007). Under these circumstances, the most effective strategies for adjusting in the short term may be counterproductive in the long term, especially insofar as they undermine ordinary social interaction (Haney 2006). For example, many inmates adopt a "prison mask," which involves suppressing weakness and emotional vulnerability in favor of an impassive, strong appearance (Toch and Adams 2002). Similarly, many inmates view others with distrust and suspicion, remaining vigilant to potential safety threats. These orientations allow inmates to adjust to the unique demands of prison life, where vulnerability is exploited and predation is common. But outside prison, where social reintegration is essential, they may be related to depression.

Incarceration and Major Depression: Secondary Stressors

Although the primary stressors of imprisonment are important, secondary stressors may play an even more important role in the link between incarceration and depression. Indeed, the stress of imprisonment reflects the loss of social roles as much as the conditions of confinement, so current and former inmates suffer in much the same way as those who simultaneously lose a job, a relationship, and a valuable role for other reasons. Indeed, recent research reveals the multidimensional stress associated with incarceration. For one, a prison record harms labor market prospects. Men with a criminal record are less likely to receive job

callbacks compared to their counterparts (Pager 2003) and earn less when employed (Western 2006). For former inmates, then, the consequences of incarceration on depression likely reflect at least two simultaneous influences: discrimination and job loss. Although partially attributable to former prisoners' poor labor market prospects, incarceration is also independently associated with homelessness (Geller and Curtis 2011). Given that job loss (Burgard, Brand, and House 2007), discrimination (Kessler, Mickelson, and Williams 1999), and homelessness (Lee, Tyler, and Wright 2010) are all linked to depression, socioeconomic status likely plays an important role in the relationship between incarceration and depression.

Yet these economic factors are likely not the only secondary stressors. Former inmates have other social roles and obligations, and the impact of both current and recent incarceration on their capacity to be good romantic partners and fathers may be as strong as the impact on their likelihood of being well-paid employees. Most inmates are fathers and are involved in romantic relationships at the time of their incarceration (Mumola 2000). It is well established that incarceration substantially increases the risk of divorce and separation (Western 2006), which is linked to poor mental health (Williams 2003). But the spillover effects of incarceration may be even deeper than those implied by mere separation. Even when the relationship remains intact, ethnographic research suggests incarceration often diminishes relationship quality (Braman 2004; Nurse 2002; but see Comfort 2008), a well-known correlate of depression (Zlotnick et al. 2000).

The consequences of incarceration on romantic relationships are also vital for psychological well-being because they influence interactions with their children. Although some former inmates may be ineffective parents, evidence also suggests inmates express concern about their children and attempt to provide support. During their prison sentence, for example, many incarcerated fathers see a reunion with their children as something to look forward to, and upon release, many reflect on their prison sentence as an opportunity to become better fathers (Nurse 2002). But on average, the strength of their good intentions is overwhelmed by the reality of the barriers they face. Even under the most generous visitation policies, incarcerated men have little opportunity to interact with their children (Braman 2004; Nurse 2002). And after release, fathers are less likely to spend time with children than never incarcerated fathers (Swisher and Waller 2008), and the quality of father-child interaction diminishes (Nurse 2002), which may be associated with depression (Davis et al. 2009).

Selection versus Causation

Before considering the mechanisms linking incarceration and depression, we first must acknowledge the relationship may be driven by selection into incarceration rather than incarceration itself. For one, many psychiatric disorders predate incarceration (Schnittker et al. 2012), and thus, many inmates and former inmates would experience depression regardless of whether they were incarcerated or not. Additionally, incarcerated men, compared to their nonincarcerated counterparts, experience economic and social difficulties *prior* to incarceration. Before testing the various mechanisms linking current and recent incarceration and depression—the key contribution of this article—we must ensure the starting relationship is robust by adjusting for both observed and unobserved differences between the men who eventually experience incarceration and those who do not. After establishing a baseline relationship, it is then possible to evaluate mechanisms.

DATA AND METHODS

We use data from the Fragile Families and Child Wellbeing Study, a longitudinal survey of 4,898 mostly unmarried parents of children born in urban areas between 1998 and 2000 (Reichman et al. 2001). The sampling frame included hospitals in 20 U.S. cities with populations greater than 200,000. Initial interviews were conducted with mothers in hospitals shortly after their child's birth and with fathers at the same time or as soon as possible thereafter. Parents were then interviewed by telephone approximately one, three, and five years after the birth. Nearly four-fifths (78 percent) of fathers participated in the baseline interview, and of these, 69 percent, 67 percent, and 64 percent completed the one-, three-, and five-year surveys,

respectively (Bendheim-Thoman Center for Research on Child Wellbeing 2008).

The Fragile Families data provide a unique opportunity. First, they include a large number of ever-incarcerated men. Because the sample overrepresents unmarried parents, many men in the sample are minorities, do not have education beyond high school, and reside in areas of concentrated disadvantage (McLanahan 2009), all of which are correlated with incarceration (Wakefield and Uggen 2010). Additionally, the data allow us to examine immediate and short-term consequences of incarceration on depression. Finally, the data include a wealth of information about fathers, making it possible to adjust for preexisting differences between fathers who have and have not experienced incarceration and to examine mechanisms through which incarceration may lead to depression.

Our analytic sample comprises 3,107 fathers. We made efforts to preserve as many respondents as possible. We first dropped the 1,738 observations in which the father did not participate in the five-year survey. We dropped an additional 13 observations missing information on depression at the five-year survey and 39 observations missing data on incarceration. Few observations were missing data on the other covariates, and we used multiple imputation to preserve these observations, producing 20 data sets (Royston 2007). There are some differences between fathers in the baseline survey and fathers in the analytic sample, but these differences are small: Fathers in the analytic sample are less likely to be racial minorities (81 percent, compared to 78 percent), more likely to have education beyond high school (35 percent, compared to 32 percent), and more likely to be married to the focal child's mother (29 percent, compared to 24 percent).

Measures

Depression. Our main dependent variable, major depression at the five-year survey, comes from fathers' responses to the Composite International Diagnostic Interview Short Form (CIDI-SF) Version 1.0 (Kessler et al. 1998). Fathers were asked if, at some time during the past year, they had feelings of depression or were unable to enjoy normally pleasurable things. Those who reported at least one of these conditions most of the day, every day, for a two-week period were asked additional questions about the same period (about losing interest in things, feeling tired, experiencing a weight change of at least 10 pounds, having trouble sleeping, having trouble concentrating, feeling worthless, or thinking about death), and those who answered affirmatively to three or more of these additional questions are considered depressed. Although the CIDI-SF provides a reliable indicator of major depression for use in general surveys, it is limited by its dichotomous nature, which may render it less sensitive than a dimensional measure (Markon, Chmielewski, and Miller 2011).

Incarceration. Our two measures of primary stressors include current incarceration and recent incarceration. Fathers experienced *current incarceration* if they were in prison or jail at the five-year interview.[1] Fathers experienced *recent incarceration* if they were incarcerated at the three-year survey or between the three- and five-year surveys. In addition to these explanatory variables, we control for *prior incarceration*, an indicator the father was ever incarcerated before the three-year survey (including prior to the birth of the focal child), to adjust for selection into incarceration.[2] We rely only on fathers' reports of current incarceration, as time differences between the mothers' and fathers' interviews could result in conflicting yet accurate reports (i.e., the father was incarcerated when the mother was interviewed but not when he was interviewed). For recent and prior incarceration, we rely on both mothers' and fathers' reports of fathers' incarceration and assume the father was incarcerated if at least one report is affirmative. Importantly, these three measures of incarceration are distinct but not mutually exclusive and are consistent with recent research using these data (Geller et al. 2012; Wildeman, Schnittker, and Turney 2012). Indeed, of the fathers who experienced prior incarceration, 10 percent were currently incarcerated and 29 percent were recently incarcerated.

Despite their advantages, our incarceration measures are somewhat imprecise with respect to the timing, duration, and type of incarceration. With respect to *timing*, we can precisely measure the timing of current incarceration, as only fathers interviewed in prison or jail are considered

currently incarcerated. The timing of recent incarceration is somewhat less precise, as we know only that fathers have been incarcerated during the past two years. Given all instances of recent incarceration occurred prior to the measurement of our dependent variable, it is unlikely the measurement of recent incarceration introduces much imprecision into our estimation strategy. The timing of prior incarceration is less precise, as we only know that the father had ever been incarcerated before the three-year interview. Given this imprecision, prior incarceration is considered a control variable and not an explanatory variable.

Additionally, our incarceration measures are limited because we cannot distinguish between the *duration* and *type* of incarceration. It is likely the effects of incarceration lasting one night differ from the effects of incarceration lasting five years, and it is possible the effects of being in prison differ from the effects of being in jail. Although our data do not allow us to address either limitation, we find it most plausible that our measure of incarceration is driven by short but not incredibly short jail stays. In these data, incarcerated men have been convicted for a range of crimes (Wildeman 2010:291), and few men are incarcerated at both the three- and five-year surveys. Thus, we are unlikely picking up a large number of prison sentences. Likewise, we are unlikely picking up many short jail stays—those less than a week or two—because survey researchers would have difficulty obtaining new contact information so quickly. Because jail time is far more common than prison time, our results apply to a broader group than would data mostly capturing prison incarceration.

Controls. The multivariate analyses control for characteristics associated with both incarceration and depression. The following paternal characteristics are measured at baseline: race (white, black, Hispanic, and other race), immigrant status, age, education (less than high school diploma, high school diploma or GED, some college, and college), number of children in the household, and self-rated health (1 = *poor* to 5 = *excellent*). We also control for familial history of major depression (assessed using a dummy variable indicating one of the father's biological parents experienced a two-week period of feeling depressed, down in the dumps, or blue).

We control extensively for socioeconomic status and family functioning (measured at the three-year survey): employment, income-to-poverty ratio, homelessness, relationship status and quality, shared responsibility in parenting, and perceptions of self as a father. A dummy variable indicates the father worked in the prior week. Income-to-poverty ratio is the ratio of total household income to the official poverty threshold established by the U.S. Census Bureau. Fathers are considered homeless if one of the following conditions are met: They reported living in temporary housing, a group shelter, or on the street at the interview; they reported staying somewhere not intended for regular housing for at least one night in the past year; or they reported living with friends or family without paying rent at the time of the interview. Relationship status with the child's mother is as follows: married, cohabiting, in a nonresidential romantic relationship, and not romantically involved. Relationship quality is based on reports of his relationship with the mother (1 = *poor* to 5 = *excellent*). A dummy variable indicates the father is in a relationship with a new partner. Shared responsibility in parenting comprises the average of mothers' responses about how often the father assisted with things such as looking after the child and running errands (1 = *never* to 4 = *often*). Finally, fathers were asked to rate how they feel about themselves as a father (1 = *not a very good father* to 4 = *an excellent father*).

In addition, we control for three paternal characteristics that may account for selection into incarceration: impulsivity, domestic violence, and drug or alcohol abuse. Impulsivity is measured with an abbreviated version of Dickman's (1990) impulsivity scale ($\alpha = .84$). Domestic violence is measured by mothers' reports, at the one- or three-year survey, that the father hit, slapped, or kicked her. Drug or alcohol abuse is measured by mothers' and/or fathers' reports, at the one- or three-year survey, that drugs or alcohol interfered with his work or made it difficult to get a job or get along with friends or family.

Mechanisms. We examine two sets of secondary stressors, which we regard as potential mechanisms linking incarceration and depression: socioeconomic status and family functioning. Socioeconomic status is represented by changes in

employment, income-to-poverty ratio, and homelessness between the three- and five-year surveys. Family functioning is measured with a dummy variable indicating the father separated from the child's mother between the three- and five-year surveys, as well as by changes in relationship quality with the child's mother, shared responsibility in parenting, and perceptions of self as a father between the three- and five-year surveys. Although many of these mechanisms are correlated with each other, as one would expect if stress proliferation were operating, they are far from perfectly correlated, and multicollinearity tests found no evidence the coefficients were estimated imprecisely when included simultaneously.

Sample Description

Table 1 presents descriptive statistics of all variables. Both depression and incarceration are common among fathers. About 17 percent of fathers at the three-year survey and 12 percent of fathers at the five-year survey reported depression. The prevalence of depression among fathers in this sample is greater than the prevalence among men in the general population (7.7 percent) (Kessler et al. 1993). These discrepancies may be because the sample overrepresents nonmarital births and therefore economically disadvantaged parents (Kessler et al. 2003). Fully 41 percent of fathers were ever incarcerated, with 6 percent of fathers experiencing current incarceration, 13 percent experiencing recent incarceration, and 38 percent experiencing prior incarceration. In terms of demographic characteristics, nearly half (49 percent) of fathers are black and more than one-fourth (26 percent) are Hispanic. About 16 percent of fathers were born outside the United States. Fathers were, on average, 28 years old when their children were born. At baseline, nearly one-third (31 percent) had less than a high school education.

These descriptive statistics also demonstrate substantial differences among ever- and never-incarcerated fathers. Importantly, ever-incarcerated fathers report more depression at the five-year survey (16 percent, compared to 8 percent). Ever-incarcerated fathers are more likely to be black and less likely to be white, Hispanic, or foreign-born. They are younger and have lower educational attainment. At the three-year survey, ever-incarcerated fathers have lower economic well-being, are less likely to be married to the child's mother, have lower quality relationships with the child's mother, and have lower shared responsibility in parenting.

Analytic Strategy

Logistic regression models. The multivariate analyses proceed in two stages. In the first stage, presented in Table 3, we use logistic regression models to estimate depression as a function of our primary stressor, incarceration.[3] All models include the key explanatory variables, current and recent incarceration. In the first and all subsequent models, we control for prior incarceration. The second model adjusts for variables that precede current and recent incarceration: race, immigrant status, age, education, number of children in the household, self-rated health, depression in a parent, impulsivity, domestic violence, drug or alcohol abuse, and depression measured at the three-year survey. Model 3 adds the following additional variables measured at the three-year survey: employment, income-to-poverty ratio, homelessness, relationship status with child's mother, relationship quality with child's mother, new partner, shared responsibility in parenting, and perceptions of self as a father.

We then take two steps to diminish unobserved heterogeneity. First, in Model 4, we consider the full logistic regression model for a subsample of fathers at risk of incarceration, those who have experienced prior incarceration. Although this reduces the threat of unobserved heterogeneity, there are trade-offs to limiting the sample entirely to previously incarcerated men. Estimation within this sample may eliminate some unobserved heterogeneity and thus produce smaller coefficients than estimation within the full sample, but to the extent that some coping or adaptation occurs during second or higher order incarcerations, it may also produce artificially small estimates. In effect, by limiting the sample to previously incarcerated men, we are estimating the association between an *additional incarceration* and depression, which may be sharply diminished in effect from the initial incarceration. Because few studies examine the relationship between incarceration and depression,

Table 1. Means and Standard Deviations of Variables Used in Analyses

	Full Sample		Ever Incarcerated		Never Incarcerated		
	Mean	*SD*	Mean	*SD*	Mean	*SD*	
Major depression (y3, percentage)	16.8		22.5		12.9		***
Major depression (y5, percentage)	11.5		16.3		8.1		***
Current incarceration (y5, percentage)[a]	5.7		13.8		.0		
Recent incarceration (y3, y5, percentage)[a]	13.3		32.2		.0		
Prior incarceration (b, y1, y3, percentage)	38.0		92.1		.0		
Race (b)							
White (percentage)	20.8		11.2		27.5		***
Black (percentage)	48.6		61.4		39.6		***
Hispanic (percentage)	26.4		24.0		28.1		*
Other race (percentage)	4.2		3.4		4.8		
Foreign-born (b, percentage)	15.8		7.2		21.9		***
Age (b)	28.12	(7.28)	26.38	(6.82)	29.34	(7.34)	***
Education (b)							
Less than high school (percentage)	30.9		41.2		23.5		***
High school diploma or GED (percentage)	34.7		41.0		30.4		***
Postsecondary education (percentage)	34.4		17.8		46.1		***
Number of children in household (b)	1.00	(1.20)	1.06	(1.26)	.96	(1.15)	**
Self-rated health (b)	3.98	(.93)	3.92	(.97)	4.03	(.90)	**
Parent experienced depression (y3, percentage)	31.6		35.4		28.9		***
Impulsivity (y1)	2.06	(.94)	2.20	(.99)	1.97	(.89)	***
Domestic violence (y1, y3, percentage)	7.9		14.3		3.4		***
Drug or alcohol abuse (y1, y3, percentage)	16.4		28.1		8.2		***
Employed (y3, percentage)	79.4		67.5		87.7		***
Income-to-poverty ratio (y3)	2.75	(3.37)	2.03	(3.07)	3.24	(3.47)	***
Homeless (y3, percentage)	4.8		7.5		3.0		***
Relationship status with child's mother (y3)							
Married (percentage)	37.2		17.2		51.4		***
Cohabiting (percentage)	21.9		23.0		21.1		
Nonresidential relationship (percentage)	6.1		8.1		4.6		***
Not in a relationship (percentage)	34.8		51.7		22.9		***
In a relationship with another partner (y3, percentage)	14.8		22.2		9.6		***
Relationship quality with child's mother (y3)	3.56	(1.30)	3.18	(1.35)	3.82	(1.19)	***
Shared responsibility in parenting (y3)	2.85	(1.08)	2.48	(1.16)	3.11	(.93)	***
Perception of self as a father (y3)	3.15	(.85)	2.99	(.89)	3.26	(.79)	***
Change in employment (y5–y3)	.00	(.45)	.00	(.54)	.00	(.37)	
Change in income-to-poverty ratio (y5–y3)	.11	(2.82)	.01	(2.80)	.18	(2.84)	*
Change in homelessness (y5–y3)	–.01	(.27)	–.01	(.34)	–.01	(.22)	
New separation from child's mother (y3, y5, percentage)	10.8		13.8		8.6		***
Change in relationship quality with child's mother (y5–y3)	–.06	(1.22)	–.09	(1.36)	–.04	(1.10)	
Change in shared responsibility in parenting (y5–y3)	–.13	(.86)	–.20	(.99)	–.07	(.75)	***
Change in perception of self as father (y5–y3)	–.05	(.80)	–.07	(.88)	–.05	(.74)	
N	3,107		1,284		1,823		

Note: Asterisks are for two-sided significance tests comparing ever-incarcerated fathers to never-incarcerated fathers. b = baseline survey; y1 = one-year survey; y3 = three-year survey; y5 = five-year survey.

[a]Current incarceration includes fathers in prison or jail at the five-year survey. Recent incarceration includes fathers in prison or jail at the three-year survey or between the three- and five-year surveys. Prior incarceration includes fathers in prison or jail at any point before the three-year survey (including prior to the birth of their child).

^$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 2. Means of Key Variables, by Current and Recent Incarceration

	Current Incarceration		Recent Incarceration	
	Yes	No	Yes	No
Depression (y5, percentage)	25.4	10.6***	21.3	9.9***
Change in employment (y5–y3)	–.21	.01***	.05	–.01**
Change in income-to-poverty ratio (y5–y3)	–.20	.13^	–.06	.14
Change in homelessness (y5–y3)	–.04	–.01	–.01	–.01
New separation from child's mother (y3, y5, percentage)	17.5	10.4**	21.6	9.1***
Change in relationship quality with child's mother (y5–y3)	–.20	–.05**	–.23	–.03***
Change in shared responsibility in parenting (y5–y3)	–.33	–.11**	–.30	–.10***
Change in perception of self as father (y5–y3)	–.13	–.05	–.06	–.05
N	177	2,930	413	2,694

Note: Asterisks are for two-sided significance tests that compare currently incarcerated fathers to not currently incarcerated fathers and recently incarcerated fathers to not recently incarcerated fathers. y3 = three-year survey; y5 = five-year survey.
^p < .10. *p < .05. **p < .01. *** p < .001.

it is difficult to adjudicate the relative magnitude of these influences, but readers should recognize this model is not necessarily a better approximation of the average association between incarceration and depression, and indeed, there are reasons to expect it is a lower bound. Second, in Model 5, we estimate a fixed-effects model considering the association between changes in incarceration and depression between the three- and five-year surveys. This model provides substantial leverage with respect to unobserved heterogeneity. Taken together, these assorted strategies provide a comprehensive portrait of the incarceration-depression relationship.

Logistic regression models, with mechanisms. The second analytic stage is presented in Table 4. We use logistic regression models to examine how secondary stressors, changes in socioeconomic status and family functioning, explain the association between incarceration and depression. In these analyses, we extend Model 3 from Table 3. Model 1 includes changes in socioeconomic status, Model 2 includes changes in family functioning, and Model 3 includes both sets of models. In Model 4, we again restrict the sample to fathers who experienced prior incarceration. Because observations were drawn from 20 cities, we use clustered standard errors and include city fixed-effects in all logistic regression models. We present coefficients and standard errors in Tables 3 and 4, but to better understand the magnitude of effects, discuss results in terms of coefficients and odds ratios.

RESULTS

Depression and Secondary Stressors, by Incarceration

In Table 2, we present selected descriptive statistics for depression and our potential secondary stressors, by incarceration. About 25 percent of currently incarcerated fathers report depression at the five-year survey, compared to 11 percent of fathers not currently incarcerated. Similarly, 21 percent of recently incarcerated fathers and 10 percent of not recently incarcerated fathers report depression. Not surprisingly, currently and recently incarcerated fathers are more likely than their counterparts to report a change in

Table 3. Logistic Regression Models Estimating Depression as a Function of Incarceration

	Logistic Regression Models								Fixed-Effect Logistic Regression Model	
	M1		M2		M3		M4		M5	
Current incarceration (y5)	.70	(.15)***	.60	(.22)**	.56	(.21)**	.49	(.24)*	.77	(.32)*
Recent incarceration (y3, y5)	.61	(.14)***	.44	(.16)**	.49	(.18)**	.27	(.22)	.35	(.20)^
Prior incarceration (y1, y3)	.32	(.11)**	.03	(.14)	−.05	(.14)				
Race (b)										
White (reference)										
Black			−.14	(.20)	−.29	(.21)	−.31	(.34)		
Hispanic			.01	(.19)	−.11	(.21)	−.16	(.32)		
Other race			−.06	(.31)	−.24	(.30)	−.02	(.51)		
Foreign-born (b)			−.37	(.17)*	−.26	(.01)	−.75	(.02)		
Age (b)			−.01	(.01)	.00	(.18)	−.02	(.54)	−.32	(.05)***
Education (b)										
Less than high school (reference)										
High school diploma or GED			.06	(.13)	.03	(.13)	.05	(.24)	−.31	(.95)
Postsecondary education			−.11	(.14)	−.09	(.14)	−.21	(.24)	−.91	(.78)
Number of children in household (b)			.03	(.05)	.05	(.05)	.12	(.08)	−.18	(.07)*
Self-rated health (b)			−.16	(.08)*	−.13	(.07)^	−.06	(.09)	−.38	(.09)***
Parent experienced depression (y3)			.72	(.15)***	.71	(.15)***	.86	(.22)***		
Impulsivity (y1)			.13	(.08)	.11	(.08)	.16	(.11)		
Domestic violence (y1, y3)			.30	(.18)	.06	(.20)	.22	(.22)		
Drug or alcohol abuse (y1, y3)			.31	(.21)	.23	(.21)	.12	(.25)		
Depression (y3)			1.05	(.16)***	.97	(.15)***	.58	(.19)**		
Employed (y3)					−.11	(.16)	−.04	(.22)		
Income-to-poverty ratio (y3)					.06	(.02)	.02	(.03)		
Homeless (y3)					.23	(.22)**	.63	(.31)*		
Relationship status with child's mother (y3)										
Married (reference)										
Cohabiting					.08	(.17)	.29	(.38)		

(continued)

Table 3 (continued)

	Logistic Regression Models						Fixed-Effect Logistic Regression Model	
	M1		M2		M3		M4	M5
Nonresidential relationship				–.38	(.31)	.27	(.49)	
Not in a relationship				.10	(.20)	.45	(.47)	
In a relationship with another partner (y3)				.00	(.18)	–.08	(.30)	
Relationship quality with child's mother (y3)				–.22	(.06)***	–.13	(.07)^	
Shared responsibility in parenting (y3)				.03	(.08)	.05	(.10)	
Perception of self as a father (y3)				–.07	(.08)	–.06	(.11)	
Constant	–2.70		–2.50	–1.72		–2.24		
Pseudo *R*-squared	.05		.13	.15		.14		
N	3,107		3,107	3,107		1,181		620

Note: All models include city fixed-effects and use robust standard errors. b = baseline survey; y1 = one-year survey; y3 = three-year survey; y5 = five-year survey.
^$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 4. Logistic Regression Models Estimating Depression as a Function of Incarceration, with Mechanisms

	M1		M2		M3		M4	
Current incarceration (y5)	.39	(.21)	.47	(.20)*	.32	(.22)	.41	(.23)
Recent incarceration (y3, y5)	.44	(.19)*	.35	(.19)	.33	(.19)	.19	(.27)
Change in employment (y5–y3)	–.55	(.16)**			–.50	(.17)**	–.13	(.20)
Change in income-to-poverty ratio (y5–y3)	–.04	(.03)			–.04	(.03)	–.13	(.06)*
Change in homelessness (y5–y3)	.74	(.26)**			.67	(.25)**	1.31	(.38)**
New separation from child's mother (y3, y5)			.29	(.20)	.32	(.22)	.37	(.39)
Change in relationship quality with child's mother (y5–y3)			–.35	(.08)***	–.34	(.08)***	–.21	(.11)*
Change in shared responsibility in parenting (y5–y3)			–.03	(.08)	–.02	(.08)	.07	(.13)
Change in perception of self as father (y5–y3)			–.14	(.09)	–.13	(.09)	–.18	(.12)
Constant	–1.48		–1.17		–.97		–1.98	
Pseudo *R*-squared	.16		.17		.18		.18	
N	3,107		3,107		3,107		1,181	

Note: All models include all covariates from Model 3 of Table 3. All models include city fixed-effects and use robust standard errors. y3 = three-year survey; y5 = five-year survey.
*$p < .05$. **$p < .01$. ***$p < .001$.

employment status. Similarly, currently and recently incarcerated fathers, compared to their counterparts, are more likely to report a new separation from the child's mother and a change in relationship quality.

Estimating the Association between Incarceration and Depression

Logistic regression models. We turn first to logistic regression models estimating depression as a function of our primary stressor, incarceration. According to Model 1 of Table 3, fathers experiencing current or recent incarceration, controlling only for prior incarceration, are more likely to report depression than those not currently or recently incarcerated. Currently incarcerated fathers have about twice the odds ($e^{0.70} = 2.01$) of reporting depression than their non-incarcerated counterparts, adjusting for prior incarceration ($p < .001$), a magnitude similar to the general association between stressful life events and major depression (Kessler et al. 1999). Recently incarcerated fathers have 1.84 times the odds ($e^{0.61}$) of reporting depression ($p < .001$). Fathers who experienced prior incarceration are also more likely to report depression, although the magnitude and statistical significance of the coefficient is smaller than that of current or recent incarceration ($b = .32$, odds ratio [OR] = 1.38, $p < .01$).

Both current and recent incarceration remain associated with depression after adjusting for observed individual-level characteristics. Adjusting for paternal demographic characteristics, family history of depression, and additional characteristics related to social selection diminishes the coefficients for current and recent incarceration (Model 2). These coefficients are further diminished after adjusting for socioeconomic status and family functioning (Model 3). This final model shows currently incarcerated fathers have 1.76 times the odds ($e^{0.56}$) of reporting depression ($p < .01$) and recently incarcerated fathers have 1.63 times the odds ($e^{0.49}$) of reporting depression ($p < .01$) than their counterparts. The current incarceration and recent incarceration coefficients are not statistically different from one another.[4]

In Model 4, we limit the sample to fathers who experienced prior incarceration. The current incarceration coefficient in this model is similar to the coefficient estimated using the full sample. Net of a wide array of individual-level characteristics, currently incarcerated fathers have 1.64 times the odds ($e^{0.49}$) of reporting depression as their counterparts ($p < .05$). Recently incarcerated fathers are not more likely to report depression, providing some evidence that first-time incarceration has an especially strong relationship with depression. Finally, in Model 5, using fixed-effects, the coefficient remains statistically significant, despite the relatively few individuals who report changes in both incarceration and depression between the three- and five-year surveys. According to this model, changes in current incarceration ($b = .77$, OR = 2.16, $p < .05$) and recent incarceration ($b = .35$, OR = 1.42, $p < .10$) are associated with changes in depression.

Explaining the Association between Incarceration and Depression

The aforementioned models establish that current and recent incarceration are associated with depression among fathers. These analyses, however, have not considered the secondary stressors that may explain the relationship between incarceration and depression, which we consider in Table 4. In Model 1, we adjust for changes in socioeconomic status between the three- and five-year surveys. We include all three indicators of socioeconomic status simultaneously in the model, as a chi-square test revealed joint significance ($F = 16.82$, $p < .001$). Taking into account socioeconomic status reduces the magnitude (by 31 percent from Model 3 in Table 3) and statistical significance of current incarceration, suggesting economic hardship may be a secondary stressor. Among the socioeconomic variables, change in employment status, not income-to-poverty ratio or homelessness, most strongly diminishes the current incarceration coefficient. In many ways, these results reflect the realities of incarceration, as these fathers often lose their job but not their residence. Though economic factors explain a moderate proportion of the current incarceration coefficient, these factors explain only 11 percent of the recent incarceration coefficient, suggesting other factors may matter.

In Model 2, we adjust for four indicators of family functioning. As in the prior model, we test

the joint significance of these variables ($F = 51.68$, $p < .001$). The current incarceration coefficient is reduced by 17 percent, and the recent incarceration coefficient is reduced by 28 percent and to statistical insignificance. Experiencing a recent separation from the child's mother independently explains 23 percent of the recent incarceration coefficient, though relationship quality and shared responsibility in parenting also explain a moderate portion of this coefficient (18 percent and 21 percent, respectively).[5]

Model 3 considers the joint contributions of socioeconomic status and family functioning and shows the current and recent incarceration coefficients are reduced by 44 percent and 32 percent, respectively, both to statistical insignificance. Thus, after adjusting for changes in socioeconomic status and family functioning, currently and recently incarcerated fathers are not significantly more likely than their counterparts to report depression. Similar to Table 3, we also present results for fathers who experienced prior incarceration (Model 4), which provides results consistent with those for the full sample.

DISCUSSION

In this article, we use data from the Fragile Families and Child Wellbeing Study to explore the association between incarceration and depression. We find incarceration has both immediate and enduring consequences for major depression among fathers. These associations persist in fixed-effect logistic regression models. Fixed-effect models are advantageous in that they account for unobserved, stable characteristics of individuals (e.g., propensity for violence), suggesting a relationship sufficiently robust to merit an investigation of the mechanisms that may be driving it and thus quell some concerns that pre-incarceration differences drive these findings. Unlike research on physical health, which often suggests inmates experience health benefits (Spaulding et al. 2011), we find no mental health benefit of current incarceration and instead find both current and recent incarceration render fathers vulnerable to depression.

We further find evidence indicating these results reflect stress proliferation. Incarceration represents a fundamental shift in the life course, leading to economic insecurity and labor market detachment (Pager 2003; Western 2006), disruptions and tensions in romantic relationships (Western 2006), and strained relationships with children (Swisher and Waller 2008), both when behind bars and after release. We find that no one mechanism is capable of explaining the entire association, but together they account for a great deal. Furthermore, we find that secondary stressors may ultimately be nearly as important as primary stressors in the sense that what happens as a result of incarceration is equally important as the incarceration experience. It is useful to think about factors underlying both primary and secondary stressors, and to this end, stigma likely serves as an important bridge. Stigma underlies the discrimination former inmates experience in the labor market, of course, but the effects of stigma on depression are probably not limited to those domains where other people are being explicitly prejudicial. As in the case of those with psychiatric disorders, for example, former inmates might behave in ways that increase depression even if those same behaviors forestall discrimination, as when they isolate themselves from others, associate only with other former inmates, or try to hide their status (Link et al. 1989). In this way, the *expectation* of rejection—of which former inmates are well aware—can be as consequential as actual rejection.

Our results also highlight distinctions among the secondary stressors and the importance of considering a variety of different types of secondary stressors. For instance, socioeconomic factors explain a large fraction of the association between current incarceration and depression, which is consistent with research highlighting the centrality of incarceration's effects on economic well-being (Western 2006). At least with respect to depression, the role impairments associated with incarceration may be nearly as relevant as the stress of imprisonment itself. Socioeconomic status, however, does little to explain the effects of recent incarceration, which is explained better by romantic relationships and parenting. In both cases, our results highlight the importance of understanding secondary stressors, especially as they relate to family life. Inmates and former inmates are embedded in social relationships with their current

romantic partners, mothers of their children, and their children, and future research should continue to consider stress process theory when understanding the effects of incarceration. Incarceration is strongly associated with major depression, but this association stems in part from role-related stressors that can affect anyone. In this way, incarceration can speak to the stress process more generally, even if it is unusual.

Limitations

Several limitations exist. First, the Fragile Families sample is limited to fathers with young children, which increases the number of current and former inmates but may limit generalizability. The consequences of incarceration for depression may differ for men without young children. Given that many prisoners have young children (Mumola 2000), understanding the collateral consequences of incarceration for inmates with children should closely approximate those found for the average inmate, but future research should consider if incarceration differentially affects the mental health of men with and without children. The association between incarceration and depression among childless men may be smaller insofar as the scope of their obligations is narrower. Additionally, attrition among fathers means our sample is selective of more advantaged fathers, and it is possible that our estimates are biased as a result of such attrition. Insofar as advantaged fathers can dampen the influence of incarceration, our results are conservative.

Although we distinguish between current and recent incarceration, incarceration experiences are sufficiently complex that we cannot disentangle them all. We do not, for example, have reliable measures of incarceration duration, though stress proliferation theory suggests the effects of a primary stressor become more pronounced as length of exposure increases (Pearlin 1989). Similarly, we cannot distinguish between prisons and jails, although presumably the stress associated with these environments differs. If the stress of jails is less than the stress of prisons, our results understate the impact of incarceration insofar as the two groups are both considered incarcerated. This does not render the distinction irrelevant, but does suggest that understanding the consequences of incarceration requires a better understanding of the conditions surrounding jail and prison incarceration, and we see considering these differences to be one of the key tasks for future research in this area. Other related conditions presumably matter as well. We do not have information regarding, for example, experiences surrounding the arrest, other interactions with the criminal justice system, interactions with other inmates, and the frequency of visitation from family members. Using indicators of current and recent incarceration, we have established a positive relationship between incarceration and depression, but in order to address these effects completely, it is necessary to discern the best targets for intervention or policy, regarding, for example, prosecution, prison administration, or reintegration services. Considering how the conditions of confinement interact with individual-level and familial-level characteristics is another crucial goal for future research. On a related note, depression is only one measure of psychological distress, and it is possible incarceration exerts a different influence on other measures of distress such as physical violence (Umberson, Williams, and Anderson 2002). Exploring outcomes of this sort is important and introduces additional complexities, especially given the relationship between these outcomes and criminal behavior.

CONCLUSION

It has become increasingly clear that incarceration has broad collateral consequences for former inmates. Our study highlights strong connections between these collateral consequences and depression and shows the mechanisms that produce them. Incarceration experiences per se appear not to be the sole drivers of these effects. Indeed, we find the primary stress of incarceration is partially a reflection of how incarceration undermines employment and family life—that is, it reflects the social life of current and former inmates. For those interested in the well-being of inmates, this finding reminds us that it is important to think of inmates not only as felons, but as fathers. By the same token, it is important not only to think about how inmates adjust to prison life, but how these adjustments relate to their lives outside of prison. The effects of

incarceration depend heavily on the challenges awaiting inmates upon release.

FUNDING

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Funding for this research was provided by a postdoctoral fellowship from the Robert Wood Johnson Foundation Health & Society Scholars Program to Turney and a Robert Wood Johnson Foundation Investigator Award in Health Policy Research to Schnittker. Funding for the Fragile Families and Child Wellbeing Study was provided by NICHD through grants R01HD36916, R01HD39135, and R01HD40421, as well as a consortium of private foundations (see http://www.fragilefamilies.princeton.edu/funders.asp for the complete list).

NOTES

1. Given that incarceration is underreported (e.g., Geller et al. 2012), we believe relying on mothers' and fathers' reports of fathers' recent incarceration provides the most accurate representation. More than 85 percent of mothers and fathers agreed on fathers' recent incarceration. Robustness checks that consider only mothers' reports of recent incarceration or only fathers' reports of recent incarceration provide substantively similar results.
2. We cannot easily examine the long-term effects of incarceration, as these data have limited information about the timing of incarceration prior to baseline.
3. Because it is inadvisable to compare coefficients across nested logistic regression models (Winship and Mare 1984), we also used linear probability models, which produced results nearly identical to the logistic regression models.
4. There are reasons to believe the association between incarceration and depression may vary by race-ethnicity or relationship status and quality. However, we find the association between current or recent incarceration and depression does not vary by race-ethnicity, by father's coresidence with the focal child's mother, or father's relationship quality with the focal child's mother.
5. These results about the relative importance of socioeconomic status and family functioning as mechanisms underlying the association between incarceration and depression are corroborated by results from a more formal decomposition of direction and indirect effects for logistic regression models (Buis 2010). These results (not presented) show that the indirect effect of socioeconomic status is 21 percent of the total current incarceration effect and 5 percent of the recent incarceration effect. The indirect effect of family functioning is 26 percent of the current incarceration effect and 32 percent of the recent incarceration effect.

REFERENCES

Bendheim-Thoman Center for Research on Child Wellbeing. 2008. *Introduction to the Fragile Families Public-Use Data: Baseline, One-Year, Three-Year, and Five-Year Telephone Data*. Princeton, NJ: Office of Population Research, Princeton University.

Bonta, James and Paul Gendreau. 1990. "Reexamining the Cruel and Unusual Punishment of Prison Life." *Law and Human Behavior* 14:347–72.

Braman, Donald. 2004. *Doing Time on the Outside: Incarceration and Family Life in Urban America*. Ann Arbor, MI: University of Michigan.

Buis, Maarten L. 2010. "Direct and Indirect Effects in a Logit Model." *The Stata Journal* 10:11–29.

Burgard, Sarah A., Jennie E. Brand, and James S. House. 2007. "Toward a Better Estimation of the Effect of Job Loss on Health." *Journal of Health and Social Behavior* 48:369–84.

Clemmer, Donald. 1940. *The Prison Community*. New York: Holt, Rinehart, and Winston.

Comfort, Megan. 2008. *Doing Time Together: Love and Family in the Shadow of the Prison*. Chicago, IL: University of Chicago.

Curtis, Marah A. 2011. "The Effect of Incarceration on Urban Fathers' Health." *American Journal of Men's Health* 5:341–50.

Davis, R. Neal, Cleopatra H. Caldwell, Sarah J. Clark, and Matthew M. Davis. 2009. "Depressive Symptoms in Nonresident African American Fathers and Involvement with Their Sons." *Pediatrics* 124:1611–18.

Dickman, Scott J. 1990. "Functional and Dysfunctional Impulsivity: Personality and Cognitive Correlates." *Journal of Personality and Social Psychology* 58:95–102.

Geller, Amanda, Carey E. Cooper, Irwin Garfinkel, Ofira Schwartz-Soicher, and Ronald B. Mincy. 2012. "Beyond Absenteeism: Father Incarceration and Its Effects on Children's Development." *Demography* 49:49–76.

Geller, Amanda and Marah Curtis. 2011. "A Sort of Homecoming: Incarceration and the Housing Security of Urban Men." *Social Science Research* 40:1196–213.

Goffman, Erving. 1961. *Asylums: Essays on the Social Situation of Mental Patients and Other Inmates*. Garden City, NY: Anchor Books.

Haney, Craig. 2006. *Reforming Punishment: Psychological Limits to the Pains of Imprisonment*. Washington, DC: American Psychological Association.

Kendler, Kenneth S., Laura M. Thornton, and Charles O. Gardner. 2000. "Stressful Life Events and Previous Episodes in the Etiology of Major Depression in Women: An Evaluation of the 'Kindling' Hypothesis." *American Journal of Psychiatry* 157:1243–51.

Kessler, Ronald C., Gavin Andrews, Daniel Mroczek, Bedirhan Ustun, and Hans-Ulrich Wittchen. 1998. "The World Health Organization Composite International Diagnostic Interview Short Form (CIDI-SF)." *International Journal of Methods in Psychiatric Research* 7:171–85.

Kessler, Ronald C., Patricia Berglund, Olga Demler, Robert Jin, Doreen Koretz, Kathleen R. Merikangas, A. John Rush, Ellen E. Walters, and Philip S. Wang. 2003. "The Epidemiology of Major Depressive Disorder: Results from the National Comorbidity Survey Replication (NCS-R)." *JAMA* 289:3095–105.

Kessler, Ronald C., Katherine A. McGonagle, Marvin Swartz, Dan G. Blazer, and Christopher B. Nelson. 1993. "Sex and Depression in the National Comorbidity Survey I: Lifetime Prevalence, Chronicity, and Recurrence." *Journal of Affective Disorders* 29:85–96.

Kessler, Ronald C., Kristin D. Mickelson, and David R. Williams. 1999. "The Prevalence, Distribution, and Mental Health Correlates of Perceived Discrimination in the United States." *Journal of Health and Social Behavior* 40:208–30.

Lee, Barrett A., Kimberly A. Tyler, and James D. Wright. 2010. "The New Homelessness Revisited." *Annual Review of Sociology* 36:501–21.

Link, Bruce G., Francis T. Cullen, Elmer Struening, Patrick E. Shrout, and Bruce P. Dohrenwend. 1989. "A Modified Labeling Theory Approach to Mental Disorders: An Empirical Assessment." *American Sociological Review* 54:400–23.

Markon, Kristian E., Michael Chmielewski, and Christopher J. Miller. 2011. "The Reliability and Validity of Discrete and Continuous Measures of Psychopathology: A Quantitative Review." *Psychological Bulletin* 137:856–79.

Massoglia, Michael. 2008a. "Incarceration as Exposure: The Prison, Infectious Disease, and Other Stress-Related Illnesses." *Journal of Health and Social Behavior* 49:56–71.

Massoglia, Michael. 2008b. "Incarceration, Health, and Racial Disparities in Health." *Law and Society Review* 42:275–306.

McLanahan, Sara. 2009. "Fragile Families and the Reproduction of Poverty." *The Annals of the American Academy of Political and Social Science* 621:111–31.

Merikangas, Kathleen R., Minnie Ames, Lihong Cui, Paul E. Stang, T. Bedirhan Ustun, Michael Von Korff, and Ronald C. Kessler. 2007. "The Impact of Comorbidity of Mental and Physical Conditions on Role Disability in the US Adult Household Population." *Archives of General Psychiatry* 64:1180–88.

Mumola, Christopher J. 2000. *Incarcerated Parents and Their Children*. Washington, DC: U.S. Department of Justice.

Nurse, Ann M. 2002. *Fatherhood Arrested: Parenting from within the Juvenile Justice System*. Nashville, TN: Vanderbilt University.

Pager, Devah. 2003. "The Mark of a Criminal Record." *American Journal of Sociology* 108:937–75.

Pearlin, Leonard I. 1989. "The Sociological Study of Stress." *Journal of Health and Social Behavior* 30:241–56.

Pearlin, Leonard I., Carol S. Aneshensel, and Allen J. Leblanc. 1997. "The Forms and Mechanisms of Stress Proliferation: The Case of AIDS Caregivers." *Journal of Health and Social Behavior* 38:223–36.

Reichman, Nancy, Julien Teitler, Irwin Garinfinkel, and Sara McLanahan. 2001. "Fragile Families: Sample and Design." *Children and Youth Services Review* 23:303–26.

Royston, Patrick. 2007. "Multiple Imputation of Missing Values: Further Update of ICE, with an Emphasis on Interval Censoring." *Stata Journal* 7:445–64.

Schnittker, Jason and Andrea John. 2007. "Enduring Stigma: The Long-Term Effects of Incarceration on Health." *Journal of Health and Social Behavior* 48:115–30.

Schnittker, Jason, Michael Massoglia, and Christopher Uggen. 2012. "Out and Down: Incarceration and Psychiatric Disorders." *Journal of Health and Social Behavior* 53: **XXX-XXX**.

Spaulding, Anne C., Ryan M. Seals, Victoria A. McCallum, Sebastian D. Perez, Amanda K. Brzozowski, and N. Kyle Steenland. 2011. "Prisoner Survival Inside and Outside of the Institution: Implications for

Health-Care Planning." *American Journal of Epidemiology* 173:479–87.

Steadman, Henry J., Fred C. Osher, Pamela Clark Robbins, Brian Case, and Steven Samuels. 2009. "Prevalence of Serious Mental Illness among Jail Inmates." *Psychiatric Services* 60:761–65.

Swisher, Raymond R. and Maureen R. Waller. 2008. "Confining Fatherhood: Incarceration and Paternal Involvement among Nonresident White, African American, and Latino Fathers." *Journal of Family Issues* 29:1067–88.

Sykes, Gresham M. [1958] 2007. *The Society of Captives: A Study of a Maximum Security Prison*. Princeton, NJ: Princeton University Press.

Toch, Hans and Kenneth Adams. 2002. *Acting Out: Maladaptive Behavior in Confinement*. Washington, DC: American Psychological Association.

Uggen, Christopher, Jeff Manza, and Melissa Thompson. 2006. "Citizenship, Democracy, and the Civic Reintegration of Criminal Offenders." *The Annals of the American Academy of Political and Social Science* 605:281–310.

Umberson, Debra, Kristi Williams, and Kristin Anderson. 2002. "Violent Behavior: A Measure of Emotional Upset?" *Journal of Health and Social Behavior* 43:189–206.

Wakefield, Sara and Christopher Uggen. 2010. "Incarceration and Stratification." *Annual Review of Sociology* 36:387–406.

Wang, Emily A., Mark Pletcher, Feng Lin, Eric Vittinghoff, Stefan G. Kertesz, Catarina I. Kiefe, and Kirsten Bibbins-Domingo. 2009. "Incarceration, Incident Hypertension, and Access to Health Care." *Archives of Internal Medicine* 169:687–93.

Western, Bruce. 2006. *Punishment and Inequality in America*. New York, NY: Russell Sage Press.

Wildeman, Christopher. 2010. "Paternal Incarceration and Children's Physically Aggressive Behaviors: Evidence from the Fragile Families and Child Wellbeing Study." *Social Forces* 89:285–309.

Wildeman, Christopher, Jason Schnittker, and Kristin Turney. 2012. "Despair by Association? The Mental Health of Mothers with Children by Recently Incarcerated Fathers." *American Sociological Review* 77:216–43.

Williams, Kristi. 2003. "Has the Future of Marriage Arrived? A Contemporary Examination of Gender, Marriage, and Psychological Well-Being." *Journal of Health and Social Behavior* 44:470–87.

Winship, Christopher and Robert D. Mare. 1984. "Regression Models with Ordinal Variables." *American Sociological Review* 49:512–25.

Zlotnick, Caron, Robert Kohn, Gabor Keitner, and Sheri A. Della Grotta. 2000. "The Relationship between Quality of Interpersonal Relationships and Major Depressive Disorder: Findings from the National Comorbidity Survey." *Journal of Affective Disorders* 59:205–15.

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