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The effect of maternal incarceration on adult offspring involvement in the criminal justice system

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Abstract

Researchers have estimated that 63 percent of incarcerated women have one or more minor children and most reported living with their children prior to incarceration (Mumola, 2000). Unfortunately, children of incarcerated parents have been a relatively invisible population in the research on the collateral consequences of incarceration. The goal of the current study was to examine the long-term effect of maternal incarceration on adult offspring involvement in the criminal justice system using data from the mother child sample of the National Longitudinal Survey of Youth 1979. Based on existing research, it was hypothesized that the adult offspring of incarcerated mothers would be more likely to have been convicted of a crime or to be sentenced to probation. The effect of maternal incarceration on correlates of criminal behavior in adolescence and early adulthood (e.g., negative peer influences, positive home environment) was also modeled to assess possible indirect effects. The results highlighted the direct effect of incarceration on adult offspring involvement in the criminal justice system, but parental incarceration had little association with correlates of criminal behavior.

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Introduction

Family context has been identified as a central domain in the study of crime and delinquency. Specifically, disruption of the parent-child relationship and parental antisocial behavior have been linked to delinquency and official contact with the criminal justice system (Farrington, 2002; Henry, Avshalom, Moffitt, & Silva, 1996; Juby & Farrington, 2001; Sampson & Laub, 1993). Although the relationship between parenting and child outcomes has been well documented, researchers know little about the long-term effect of maternal incarceration on adult offspring involvement in the criminal justice system.

The absence in the literature is surprising given current incarceration trends. In 1980, women accounted for 3.9 percent of the prison population; by 2003, women represented more than 7 percent of prison inmates (Harrison & Beck, 2004). The children of incarcerated parents have been affected by the rise in incarceration. Currently, more than 1.5 million children have an incarcerated parent; 2 percent of all minor children and 7 percent of African American children have a parent in federal or state prison (Mumola, 2000). Most of the children are very young, and the majority of parents lived with their children prior to incarceration. In fact, 44 percent of fathers and 64 percent of mothers in state prisons and 55 percent of fathers and 84 percent of mothers in federal prisons reported living with their children prior to incarceration (Mumola, 2000).

The primary goal of the current research was to explore the effect of maternal incarceration on adult

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offspring involvement in the criminal justice system. Using data from the mother child supplement of the National Longitudinal Survey of Youth 1979 (NLSY79), this study improved on previous research that had focused solely on the direct effect of maternal incarceration on child outcomes by including correlates of criminal behavior (e.g., parental supervision, peer pressure). This analytic strategy was designed to consider the independent effect of incarceration on adult offspring contact with the criminal justice system separate from that of preexisting social and maternal characteristics. The current research sought to address not only *if* maternal incarceration affects adult offspring involvement in the criminal justice system, but *how* incarceration influences children and families.

Theoretical framework

Researchers have amassed considerable evidence on the importance of parenting on offspring delinquency and involvement in the criminal justice system (Cernkovich & Giordano, 1987; Farrington, 1989; Gorman-Smith, Tolan, Loeber, & Henry, 1998; Hay, 2001; Lipsey & Derzon, 1999; Loeber & Stouthamer-Loeber, 1986; McCord, 1991; Rebellion, 2002; Sampson & Laub, 1993; Wright & Cullen, 2001; Wright, Cullen, & Miller, 2001); however, researchers know little about how parenting affects offspring outcomes into adulthood, specifically as it relates to parental incarceration. As such, the established literature on parenting provided the basis for the current study. In specific, three theoretical perspectives including strain, control, and stigmatization were adapted to explain the mechanisms by which parental incarceration may affect adult offspring involvement in the criminal justice system (see also Hagan & Dinovitzer, 1999).

Strain perspective

Imprisonment strains economic opportunities and social relationships. Parental incarceration alters family composition and the disruption appears to be especially likely in cases of maternal incarceration. When fathers go to prison, the children's mothers typically care for the children. In contrast, when mothers are incarcerated, their children most often are cared for by relatives or are placed in foster care (S. H. Fishman, 1982; Johnson & Waldfogel, 2000; Koban, 1983; Mumola, 2000; Sharp, Marcus-Mendoza, Bentley, Simpson, & Love, 1999). Caretakers often do not have the financial resources necessary to meet the expenses of these children (Bloom & Steinhart, 1993; Hariston, 2002; Hungerford, 1993;

Johnson & Waldfogel, 2000). Children also suffer financially due to the loss of legal and illegal income, formal or informal child-support payments, and/or access to public assistance previously provided by the incarcerated parent (Hariston, 2002; Sharp et al., 1999).

Not only are the financial circumstances of families strained by parental absence, parental incarceration can also change the structure of the relationship between parents and their offspring (McLanahan & Bumpass, 1988). Correctional facilities are typically located far from family, thus inhibiting visiting opportunities, especially for persons with lower economic means. In addition, correctional policies strictly regulate visitation hours, phone usage, and telephone fees; this makes it difficult and expensive to maintain contact with family (Kaplan & Sasser, 1996; Young & Smith, 2000). Incarcerated parents have little opportunity to participate in family life, so children often adopt different role responsibilities to compensate for parental absence. For example, children of incarcerated parents often rely heavily on peer networks for support (Young & Smith, 2000). Role adaptations of this sort have been linked to delinquency and precocious role transitions (e.g., adolescent pregnancy) (Hagan & Wheaton, 1993).

Social stigma

Incarceration imparts a social stigma on families and children, often eliciting strong feelings of shame and anger in the family and associates of inmates. Substitute caregivers, particularly grandparents raising their grandchildren, often indicate resentment, guilt, and disappointment as a result of the parenting arrangements (Sharp et al., 1999). In addition, many parents report carefully guarding information on their spouse's incarceration status, very often keeping the secret even from close family members in order to protect their children from stigmatization (Braman, 2002). These secrets can further isolate families from support structures, weaken family bonds, and increase family stress. In contrast, revealing the secret often exposes children to ostracism and discrimination (L. T. Fishman, 1990). In the same light, family incarceration status may condition how children are processed in the court as adolescents (see Leiber & Mack, 2003). The stigma of parental incarceration coupled with an early deviant label may marginalize the child, increasing the chances of future contact with the criminal justice system.

Control theories

Control theory rests on the assumption that effective parenting, through direct and indirect control, can induce

conformity and insulate offspring from deviant behavior (Hirschi, 1969; Sampson & Laub, 1993). Parental incarceration affects parental control and support in a variety of ways. Parental deviance has been shown to negatively affect discipline and supervision abilities, thus increasing the risk of delinquency for children (Patterson, 1982; Sampson & Laub, 1993). Even more, parental incarceration removes most opportunities for effective parent and child interaction, making positive social control and parental attachment difficult. Finally, children of incarcerated parents are typically raised in single-parent families, further increasing the chances of delinquency (Demuth & Brown, 2004; Rebellion, 2002; Wells & Rankin, 1991) and association with delinquent peers (McLanahan & Bumpass, 1988; Sampson & Laub, 1993).

Current research on parental incarceration

Parental incarceration has been linked to a wide range of negative emotional and behavioral outcomes. Emotional problems such as depression, anxiety, and low self-esteem have been reported among children of incarcerated parents (Boswell & Wedge, 2002; Braman, 2002; Dalley, 2002; L. T. Fishman, 1990; Fritsch & Burkhead, 1981; Lowenstein, 1986; Sack, 1977; Sack, Seidler, & Thomas, 1976; Sharp & Marcus-Mendoza, 2001; Sharp et al., 1999; Stanton, 1980). In addition, school-related difficulties and other maladaptive behaviors, such as running away, substance abuse, and aggressive/antisocial behavior, have been linked to parental incarceration (Bloom & Steinhart, 1993; Boswell & Wedge, 2002; Fritsch & Burkhead, 1981; Jose-Kampfner, 1995; Lowenstein, 1986; Sack, 1977; Sharp et al., 1999).

Although multiple scholars have theorized that children of incarcerated parents are a particularly high-risk group for the intergenerational pattern of criminal offending (Dalley, 2002; Eddy & Reid, 2002; Hagan & Dinovitzer, 1999; Johnston, 1995; Travis, Cincotta, & Solomon, 2003), very little empirical research has explored the relationship and most of the work has been conducted with youth. The research that has been done does suggest that children of incarcerated parents are more likely to self-report involvement in delinquency (Gabel & Shindlecker, 1993; Hungerford, 1993; Lowenstein, 1986) and to indicate that they had been arrested as juveniles (Johnston, 1995; Myers, Smarsh, Amlund-Hagen, & Kennon, 1999; Sharp & Marcus-Mendoza, 2001). Most recently, Murray and Farrington (2005), in their analyses of a sample of boys from London, linked parental imprisonment to a ten-fold increase in the chances for child antisocial personality

disorders at age thirty-two, and parental incarceration also significantly increased the chances for juvenile conviction and adult incarceration. Incarceration had a significantly stronger effect on child outcomes than other types of parental separation and net of parental criminal behavior; the results further reinforce that parental incarceration is a unique risk mechanism for children and that the effects can endure well into adulthood.

Unfortunately, previous research had been limited by several factors. The majority of research had relied on samples that were small, nonrandom, drawn from limited geographic areas, and/or clinically based. Moreover, many studies had inferred child outcomes from the potentially biased assessments of the child's inmate parent or remaining parent or caretaker rather than collecting data directly from the child. In addition, temporal order has not been established, as researchers have seldom been able to assess the children prior to their parent's incarceration. As such, it is difficult to say whether the problems reported in these children already existed, existed but were exacerbated by parental incarceration, or arose as a direct result of parental incarceration. Finally, researchers have not introduced controls for a host of other factors that may lead to a spurious relationship between parental incarceration and negative child outcomes, particularly those relating to the home environment and family functioning before and during incarceration, as well as socio-demographic variables.

Data

The current study used data from women and their children surveyed through the National Longitudinal Survey of Youth 1979 (NLSY79). The data set was part of a larger research initiative funded by the Bureau of Labor Statistics to examine labor market activities and other significant life events among men and women. Data on mothers were obtained from the original study sample which was designed to be nationally representative of young men and women who were between the ages of fourteen and twenty-two in 1978 (Center for Human Resource Research, 2001). Respondents were selected using a multistage stratified area probability sample of dwelling units in the United States. The original sampling framework was designed to over sample civilian Hispanic, Black, and economically disadvantaged non-Black/non-Hispanic youth living in the United States during 1979. Data were collected through in-person interviews yearly from 1979 to 1994 and biannually from 1996 to 2000.

In 1986, the NLSY79 data collection protocol was expanded to include children born to mothers who were

part of the NLSY79 sample and provided nationally representative data for children born to U.S. women aged fourteen to twenty-one in 1979 (Center for Human Resource Research, 2001). In total, data had been collected biannually on 4,407 mothers and 8,323 children. The current analysis focused on 1,697 adult offspring who were between age eighteen and twenty-four in 2000 and their mothers ($N = 1,258$).¹ In total, twenty-six (2.1 percent) mothers had been incarcerated at some point between 1979 and 2000, and thirty-one (1.8 percent) children had mothers who had been incarcerated. The sample was selected so that the effect of maternal incarceration on adult offspring involvement in the criminal justice system could be examined while controlling for children's adolescent and early childhood experiences.

The NLSY79 was an appropriate data set to examine the relationship between maternal incarceration and adult offspring official contact with the criminal justice system because it contained a large sample of mothers and their children. The data set also included measures of family processes (e.g., supervision), peer influences, and maternal and child resources (e.g., education, poverty). That said, the data set was not without limitations. First, the study sample included a disproportionate number of young, economically disadvantaged, minority mothers. Nearly half (48 percent) of the children in the study sample were born when their mothers were under eighteen, and an additional 40 percent of mothers were between age nineteen and twenty-one when they gave birth to their first child. Researchers have noted that children of adolescent parents may be at greater risk for delinquency (Morash & Rucker, 1989; Nagin, Farrington, & Pogarsky, 1997); therefore, controls for characteristics overrepresented in the sample (e.g., race, mother's age at child's birth, and poverty status) were included in the model to reduce possible bias. In addition, the child sample did not include offspring of male sample members; therefore, the effect of paternal incarceration on child outcomes could not be considered.

Second, the number of incarcerated women who participated in the NLSY79 was small, reducing the flexibility of the analysis. In addition, incarceration data were collected annually; hence, the NLSY79 underestimated the extent of maternal incarceration if the experience was of short duration or fell between survey years.² Although the incarceration measure had been utilized in prior research of this type (see Western, 2002), it was important to view this variable as a conservative indicator of the prevalence of imprisonment. Despite these limitations, the NLSY79 was the only existing nationally representative data set that exam-

ined the relationships between mothers and their offspring over time.

Measures

Dependent variables

Conviction and probation served as dependent variables and were measured at the child level. The *adult conviction* variable was a dichotomous variable (1 = adult offspring had a conviction in adult court between 1994 and 2000; 0 = no adult convictions).³ For the purposes of the current analyses, individuals were considered adults at the age of eighteen. The *adult probation* measure was dichotomized into adult offspring who indicated that they had served time on probation between 1994 and 2000 and those who had not been on probation (1 = adult probation; 0 = no adult probation). Although the probation and conviction measures did not reflect the range of possible criminal sanctions, the measures were selected based on available data to provide a general indicator of formal contact with the criminal justice system. A description of variables included in the analyses can be found in Appendix A.

Independent variables

Adult offspring characteristics

Adolescent *delinquency* was included in the model as a control for past delinquent behavior and to explore the relationship between maternal incarceration and adolescent delinquency. This construct was measured in 1992, when respondents were between age ten and sixteen, using fourteen self-reported measures of delinquency involvement in the past three months, including cigarette smoking, alcohol use, drug use, curfew violation, assault, lying, theft, destruction of property, and truancy. The additive scale had an alpha coefficient of 0.82.

Maternal absence, particularly as it relates to family structure, has been cited in recent research as a central correlate of delinquency (Demuth & Brown, 2004; Murray & Farrington, 2005; Rebellion, 2002; Wells & Rankin, 1991). In addition to the theoretical significance, including maternal absence in the model allowed for the estimation of the effect of parental incarceration separate from general parental absence. Maternal absence was a dichotomous (1 = child lived in a residence other than that of their biological mother, for reasons other than incarceration, for one or more interview points; 0 = child resided in the home of biological mother from 1980 to 1992). Maternal absence was not mutually exclusive to parental incarceration as some mothers were absent from

the home for reasons of incarceration *and* for other grounds (e.g., hospitalization). If a mother was absent from the home only for incarceration, then the maternal absence variable was coded as 0. The correlation between the two measures was significant ($p < .05$), but weak at $r = 0.09$.

Four child demographic characteristics, including age, race, ethnicity, and gender, were also included in the models as controls. Child's age was represented in years. Although there was a vast body of literature that linked age with delinquency and official involvement with the criminal justice system (Hirschi & Gottfredson, 1983), the effect of age in the current model might be small because of the restricted age range of the sample. Gender was included as a dichotomous measure (1 = male; 0 = female). Finally, measures of race and ethnicity, including *Black* (1 = Black; 0 = White or other race) and *Hispanic* (1 = Hispanic; 0 = White or other race) were also included in the models.

Maternal characteristics

A binary measure of maternal, *adult incarceration* was used in the analyses. Maternal incarceration was dichotomized into women who were incarcerated at any point between 1980 and 2000 and those who did not experience incarceration during this period (1 = incarceration; 0 = no incarceration).

The representativeness of the NLSY79 sample of incarcerated mothers to the general population of incarcerated women was assessed by comparing demographic characteristics of the current incarcerated sample with figures from the 1991 survey of state prison inmates (Beck et al., 1993).⁴ The results are displayed in Table 1. The NLSY79 sample of incarcerated women was quite similar to the Bureau of Justice Statistics (BJS) representative sample of incarcerated women. Most incarcerated women were in their early thirties, had never been married, were unemployed prior to imprisonment, and had a history of drug and alcohol use. Some differences did emerge. Specifically, the NLSY79 mothers were more racially heterogeneous. This was expected because the original research design included over sampling members of minority groups. In addition, the BJS female prison inmates reported higher levels of education prior to incarceration. Controls for education, race, and ethnicity were introduced in the statistical models to reduce possible bias due to sample selection.

In addition to incarceration, a maternal *delinquency scale* was included in the model. Maternal delinquency has been associated with increases in offspring criminality (Lipsey & Derzon, 1999; Wright & Cullen, 2001); therefore, it is important to isolate the effect of general

maternal delinquency in late adolescence and early adulthood from that of adult maternal incarceration. In 1980, when mothers were between the ages of fourteen and twenty-one, the NLSY79 included a special crime module. Mothers were asked to report if they had been involved in a range of criminal and delinquent activities during the past year, including destruction of property, physical fights, theft, robbery, assault, drug use, drug sales, deception, auto theft, burglary, fraud, and gambling. The seventeen-item additive scale had an alpha coefficient of 0.72.⁵

Controls for maternal age and education were included in the model to account for study design and to control for possible sample selection bias. The *adolescent mother* construct was dichotomous (1 = mother was under age eighteen at time of first birth; 0 = mother was eighteen or older). *Maternal education* was an important control because failure to complete high school had been associated with increased chances of incarceration (Arum & Beattie, 1999), and higher education levels had been linked to improved parenting skills (see Gecas, 1989). Maternal education represented the number of years of school completed by 1992.

Finally, a measure of maternal *smoking during pregnancy* was included in the model as a measure of maternal attentiveness during early childhood.⁶ Developmental theorists have stressed the importance of considering early childhood environments when studying child delinquency and adult offspring outcomes (e.g., Moffitt, 1993). In addition, maternal smoking has been associated with formal contact with the criminal justice system (Gibson, Piquero, & Tibbetts, 2000). Smoking during pregnancy was a dichotomous measure in which mothers were asked to report if they had smoked cigarettes during one or more of their pregnancies (1 = yes; 0 = no).

Correlates of criminal behavior

Three child-level factors, including parental supervision, emotional home environment, and peer pressure, which may affect the relationship between maternal incarceration and adult offspring contact with the criminal justice system, were considered. All constructs were measured in 1992, when offspring were between ages ten and sixteen, and were designed to capture adolescent experiences.

Parental supervision was measured using a two-item additive scale ($\alpha = 0.47$). Mothers were asked to report for each child (1) the proportion of the child's close friends she recognized by sight and name (1 = child had no close friends, 6 = all of them), and (2) how often she knew who her child was with when her child was not at home (1 = rarely, 4 = all the time).

Table 1
Demographic characteristics of NLSY79 mothers in 1991 compared with female prison inmates surveyed by the Bureau of Justice Statistics in 1991

	BJS female prison inmates - 1991	NLSY mothers ever incarcerated	NLSY mothers never incarcerated
<i>Race</i>			
White	36.2%	15.4%	39.1%
Black	46.0%	50.0%	36.2%
Hispanic	14.2%	30.8%	21.1%
Age (median)	31 years	30 years	31 years
<i>Marital status</i>			
Married	17.3%	16.0%	54.1%
Widowed	5.9%	4.0%	1.0%
Divorced	19.1%	12.0%	15.8%
Separated	12.5%	24.0%	9.9%
Never married	45.1%	44.0%	19.3%
<i>Education</i>			
Eighth grade or less	16.0%	16.0%	11.6%
Some high school	45.8%	68.0%	65.7%
High school graduate	22.7%	8.0%	10.0%
Some college or more	15.5%	8.0%	12.7%
<i>Pre-arrest employment</i>			
Unemployed	53.3%	48.0%	25.5%
Part time	11.0%	44.0%	41.6%
Full time	35.7%	8.0%	32.9%
<i>Drug use</i>			
Ever used any drug	79.5%	73.1%	52.2%
Marijuana last thirty days	20.5%	3.8%	4.7%
Cocaine/crack last thirty days	36.5%	3.8%	0.9%
<i>Alcohol use</i>			
Drank daily last thirty days	19.0%	11.5%	21.6%

Note: Data for the BJS prison inmates was obtained from the 1991 survey of state prison inmates (Beck et al., 1993).

The emotional *home environment* construct is an adaptation of Bradley and Caldwell's HOME scales (Bradley & Caldwell, 1979; Bradley et al., 2000). This measure had been validated in numerous studies, and had been associated with a number of social and delinquent outcomes (Parcel & Menaghan, 1993). The emotional home environment scale included maternal and interviewer assessments of the emotional support provided to each child. The scale included sixteen measures ($\alpha = 0.64$) and incorporated maternal assessments of the nature of responsibilities given to the child, time spent with family, and frequency and use of spanking. Interviewers also noted the nature of the interaction between mother and child. Scores were summed and then standardized and ranged from zero (poor emotional home environment) to one hundred (exceptional home environment).

The *peer pressure* construct was measured using a five-item additive scale ($\alpha = 0.75$) that queried respondents if their friends had pressured them to try cigarettes, try marijuana or other drugs, drink alcohol, skip school, commit crime or violence. Peer pressure is an

important domain of delinquency and researchers have linked parental antisocial behaviors with increased deviant peer association (Sampson & Laub, 1993; Warr, 2002).

Results

Sample characteristics

Table 2 displays descriptive statistics for the total sample and by maternal incarceration status. The proportion of NLSY79 adult offspring who reported formal contact with the criminal justice system was small, but they were significantly more likely to have been convicted of a crime and to have served time on probation than the adult children of mothers who were not incarcerated. In fact, one-quarter of incarcerated mothers had a child who had been involved with the criminal justice system as an adult.

The initial results also highlighted preexisting differences between the two groups. For example, adult offspring of incarcerated mothers were significantly older and

Table 2
Descriptive statistics by sample group

Variable	Total sample (N = 1,258 mothers, 1,697 children)		Incarcerated mothers (N = 26 mothers, 31 children)		Non- incarcerated mothers (N = 1,232 mothers, 1,666 children)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
<i>Dependent measures</i>						
Adult conviction	.10	.30	.26**	.44	.10	.30
Adult probation	.08	.27	.26*	.45	.07	.26
<i>Characteristics of adult offspring</i>						
Male	.50	.50	.42	.50	.50	.50
Age (2000)	20.42	1.87	21.42**	1.75	20.41	1.86
White	.39	.49	.15**	.37	.39	.49
Black	.36	.48	.50	.51	.36	.48
Hispanic	.21	.41	.31	.47	.21	.41
Education (years)	11.61	1.58	11.38	1.45	11.62	1.58
Maternal absence	.22	.42	.39***	.50	.21	.41
Delinquency	2.54	2.39	3.03	3.13	2.53	2.37
<i>Maternal characteristics</i>						
White	.39	.49	.15**	.37	.39	.49
Black	.36	.48	.50	.51	.36	.48
Hispanic	.21	.41	.31	.47	.21	.41
Delinquency scale	1.65	1.98	2.92*	2.54	1.62	1.96
Adult incarceration	.02	.14	–	–	–	–
Adolescent mother	.48	.50	.19**	.40	.49	.50
Years of education	11.84	1.98	11.42	1.65	11.85	1.99
Smoking during pregnancy	.34	.48	.54*	.51	.34	.47
<i>Correlates of criminal behavior</i>						
Home environment	48.14	28.27	44.53	16.73	48.21	28.44
Parental supervision	8.57	1.34	8.23	1.36	8.58	1.34
Peer pressure	.37	.96	.19	.54	.38	.97

Note: Incarcerated and non-incarcerated groups are significantly different at *** $p < .001$, ** $p < .01$, and * $p < .05$.

more likely to have resided with someone other than their biological mother during one interview point than offspring of mothers who had not been incarcerated. In addition, adult offspring of incarcerated parents were significantly less likely to be White than mothers who had not been incarcerated. Children of incarcerated mothers also reported higher levels of involvement in delinquency as adolescents, but the differences between groups did not achieve statistical significance. The groups' gender and educational status did not vary significantly.

Incarcerated mothers differed from their non-incarcerated counterparts in several ways. For example, the incarcerated mothers were less likely to have been adolescents when they had their children than the non-incarcerated mothers. Incarcerated mothers were also significantly

more likely to have smoked while pregnant and to have reported prior criminality.

Surprisingly, the two groups did not differ significantly in relationship to correlates of criminal behavior. Recent research had suggested that parental deviance might impair parenting capabilities (Gottfredson & Hirschi, 1990; Sampson & Laub, 1993), but these findings suggested that, on average, the supervision levels and emotional home environments were not statistically different for the two groups. Nevertheless, there were potential differences between the groups that did deserve note. The peer pressure contrast did approach statistical significance, with children of incarcerated mothers more likely to report delinquent peer pressure. Children with mothers who had not been incarcerated were also more likely to report positive emotional home environments and high levels of parental supervision, though these differences were not statistically significant.

Maternal incarceration and adult offspring official contact with the criminal justice system

Table 3 presents the results of a series of logistic regression models which estimated the likelihood of adult offspring conviction and probation.⁷ Model I served as a baseline and included measures of child characteristics. Consistent with past research, maternal absence increased the chances of probation and conviction by a minimum of 75 percent, even when maternal characteristics and correlates of criminal behavior were included in the model. Gender was also a significant predictor with males at least three and one-half times as likely to have been convicted of a crime or served time on probation. The gender disparity in criminal justice processing was not surprising given current national statistics. In 2000, approximately 17 percent of persons convicted of a felony in state courts were female (Durose, Levin, & Langan, 2001), and, at the end of 2003, women made up about 23 percent of the nation's probationers (Glaze & Palla, 2004). Contrary to expectations, child delinquency was not associated with later involvement in the criminal justice system.

Measures of race and age were not significant for the conviction or probation outcomes. This outcome was contrary to existing research that had linked race and age to greater chances of involvement in the criminal justice system (see Spohn & Holleran, 2000). Conversely, Hispanic children were significantly less likely to be convicted of a crime, although the effect was small. No relationship was observed between Hispanic ethnicity and adult probation. The mixed research findings

Table 3

Logistic regression of characteristics of adult offspring, maternal characteristics, and correlates of criminal behavior on offspring involvement with the criminal justice system

	Adult probation				Adult conviction			
	Model I		Model II		Model I		Model II	
	Coeff.	Exp(B)	Coeff.	Exp(B)	Coeff.	Exp(B)	Coeff.	Exp(B)
Intercept	-5.16 (1.27)		-2.46 (1.62)		-5.24 (1.11)		-2.52 (1.42)	
<i>Characteristics of adult offspring</i>								
Age	.05 (.05)		-.00 (.05)		.07 (.05)		.02 (.05)	
Male	1.22*** (.21)	3.40	1.31*** (.22)	3.72	1.23*** (.18)	3.44	1.29*** (.19)	3.63
Black	-.05 (.21)		.10 (.26)		-.10 (.19)		-.18 (.20)	
Hispanic	-.26 (.26)		-.11 (.29)		-.43† (.23)	.65	-.53* (.25)	.59
Education	.07 (.06)		.09 (.06)		.08 (.05)		.09 (.06)	
Delinquency	-.01 (.04)		-.03 (.04)		-.00 (.34)		-.02 (.04)	
Maternal absence	.57** (.21)	1.77	.61** (.22)	1.84	.58** (.18)	1.78	.60** (.19)	1.82
<i>Maternal characteristics</i>								
Adult incarceration			1.39*** (.40)	4.00			1.09** (.39)	2.97
Delinquency scale			.09* (.05)	1.10			.07† (.04)	1.07
Education			-.11** (.05)	.89			-.13** (.04)	.88
Smoking during pregnancy			.36† (.20)	1.43			.13 (.18)	
Adolescent mother			-.24 (.22)				-.23 (.19)	
<i>Correlates of criminal behavior</i>								
Parental supervision			-.13 (.08)				-.08 (.07)	
Home environment			.00 (.00)				.00 (.00)	
Peer pressure			.20** (.08)	1.23			.19** (.07)	1.21
Model fit								
-2 log likelihood	849.11		821.11		1060.97		1025.72	
Nagelkerke R ²	.07		.13		.09		.12	

* $p < .05$.

** $p < .01$.

*** $p < .001$.

† $< .10$ (two-tailed tests).

warrant further study, particularly because the majority of incarcerated parents are of minority race.

Next, maternal characteristics and correlates of criminal behavior were added to Model II. Model II revealed a significant, negative relationship between maternal incarceration and adult offspring involvement in the criminal justice system. The effect of maternal incarceration was particularly strong with adult offspring of incarcerated mothers nearly four times as likely to have served time on probation and nearly three times as likely to have been convicted of a crime. Similarly, maternal delinquency was also associated with child outcomes, but the effect was small. The prenatal smoking measure also approached significance in the probation model. Conversely, maternal education reduced the chances of probation and conviction by approximately 10 percent, but maternal age did not affect child outcomes.

Finally, children who reported peer pressure as adolescents were more likely to be convicted and to have

served time on probation as adults. Measures of home environment and supervision did not achieve statistical significance, and introducing maternal characteristics and correlates of criminal behavior into the model did not diminish the relationships observed in the initial models. In addition, the explanatory power of the models was quite small, as evidenced by the Nagelkerke R^2_L of 0.13 for the final adult probation model and 0.12 for the conviction model.

Maternal incarceration and correlates of criminal behavior

Table 4 presents the results of a series of ordinary least squares regression models estimated to examine the relationship between maternal incarceration and correlates of criminal behavior measured at the child level.⁸ As noted, the goal of this analysis was to explore the selection effects that may influence the relationship between maternal incarceration and adult offspring

Table 4
Regression of adult offspring and maternal characteristics on correlates of criminal behavior as measured in 1992

	Delinquency		Parental supervision		Home environment		Peer pressure	
	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.	Coeff.	S.E.
Intercept	4.02	1.01	8.89	.43	-30.72	10.20	-.39	.41
<i>Characteristics of adult offspring</i>								
Age	.04	.03	-.04***	.02	.37	.34	.04***	.01
Male	.28**	.12	.03	.06	-.68	1.17	.06	.05
Black	.06	.14	-.05	.07	-12.09***	1.14	.12**	.06
Hispanic	-.05	.16	.01	.08	-9.64***	1.61	-.01	.07
Education	-.07†	.04	.01	.02	3.15***	.07	.02	.02
Delinquency	-	-	-.02†	.02	-.02	.25	.00	.01
Maternal absence	.17	.15	-.12†	.07	-.47	1.48	-.11	.06
<i>Maternal characteristics</i>								
Adult incarceration	.38	.35	-.40*	.17	1.40	3.50	-.08	.14
Delinquency	-.05	.03	.00	.02	-.07	.32	-.01	.01
Smoking during pregnancy	-.07	.13	.09	.06	-.78	1.28	.14**	.05
Adolescent mother	-.22†	.13	-.01	.06	.14	1.30	-.08	.05
Education	-.06†	.03	-.01	.06	-.43	-.31	.01	.01
<i>Correlates of criminal behavior</i>								
Parental supervision	-0.09†	.05	-	-	5.32***	.50	-.03	.02
Home environment	0.00	.00	.01***	.00	-	-	-.00	.00
Peer pressure	0.01	.06	-.04	.03	-.59	.61	-	-
Model summary								
Model R ²	.02		.09		.16		.03	

* p.05.

** p < .01.

*** p < .001.

† (two-tailed tests).

contact with the criminal justice system. The analyses revealed a significant, negative relationship between maternal incarceration and supervision, but a significant relationship was not observed between incarceration and emotional home environment, delinquency, or peer pressure. In addition, maternal absence was associated with deficits in supervision but was unrelated to the other correlates.

Maternal characteristics also affected peer pressure and delinquency, although the effects were small. For example, maternal smoking during pregnancy was also associated with an increased likelihood of negative peer association. Higher levels of maternal education reduced child delinquency, while children of adolescent mothers reported more delinquency.

Similar to the maternal characteristics, adult offspring characteristics were largely unrelated to correlates of criminal behavior. Age was negatively associated with supervision, but positively related to peer pressure. Race, ethnicity, and child education were significant in the home environment model; children of minority races and children with less education reported experiencing less positive home environments. Black males also reported

significantly more peer pressure. Finally, positive home environments were associated with greater parental supervision, while children who were involved with delinquency reported less parental supervision. Together, the variables explained a small amount of total model variation; the R^2 was 0.02 for the delinquency model, 0.03 for peer pressure, and 0.09 for parental supervision. The R^2 for the home environment model was moderate at 0.16.

Summary and discussion

The goal of the current analysis was to examine the relationship between maternal incarceration and adult offspring involvement in the criminal justice system. The results suggested that offspring of incarcerated mothers were significantly more likely to be involved in the criminal justice system as adults. This finding was consistent with past research, but the magnitude of the relationship further highlighted the importance of the research findings. Similarly, maternal absence appeared to be of great importance, but the effect of maternal absence was smaller than maternal incarceration. Consistent with research of this type, the research findings

highlighted the enduring, direct effect of maternal incarceration on offspring outcomes, even after accounting for maternal separation and net of maternal delinquency and other risk factors.

In contrast, maternal imprisonment did not appear to be a risk marker for poor home environments and other factors associated with risks of imprisonment. Although children of incarcerated mothers did report significantly lower levels of parental supervision, maternal incarceration was unrelated to delinquency, peer pressure, and home environment. Researchers have hypothesized a negative relationship between parental incarceration and parental efficacy, but little support for this hypothesis was found in the current analysis. The lack of a relationship may be the result of maternal heterogeneity. It is clear that some incarcerated mothers provide poor home environments and supervision for their children and that their presence in the home may be harmful to their children due to abuse or neglect, as is the case with some non-incarcerated mothers. On the other hand, some incarcerated mothers are effective parents whose presence in the home is beneficial to their children. This wide variability in the parenting quality of both incarcerated and non-incarcerated mothers cautions against simplistic generalizations of female offenders.

In addition, the present findings appear to support the social stigmatization or labeling perspective. Parental incarceration may not have a strong, direct effect on parenting and child behavior, particularly in adolescence. Instead, adult offspring of incarcerated parents may appear more threatening to the criminal justice system; therefore, they could be more likely to be sanctioned formally when compared with offspring of parents with no prior contact with the system. Although the current models as estimated cannot test the direct effect of labeling on offspring outcomes, the role of stigmatization in the study of parental incarceration warrants attention.

The research provided important insight into the nature of the relationship between maternal incarceration and adult offspring involvement with the criminal justice system, but a number of caveats require mention. First, the sample of incarcerated parents was small, limiting both the flexibility of the analysis and the generalizability of the findings. Although this shortcoming was common to research of this type, and the maternal sample appeared to be similar to incarcerated women as a whole, the small sample of offspring may have affected the research results. Future analyses that include larger samples of incarcerated mothers may reveal greater collateral effects of imprisonment. Increasing the relative sample size may also facilitate improved

tests of the interrelationships between parental incarceration, parental absence, and correlates of criminal behavior. In the same light, this study did not consider the effect that paternal incarceration may have on offspring. Instead, the goal of this study was to separate the unique effect of maternal incarceration on child outcome, as the majority of incarcerated women are the primary caregivers to their children before incarceration. Researchers should continue to explore the effects of paternal incarceration on children, in addition to separating the effect that incarceration of non-custodial parents has on offspring. This line of research is likely to net important policies.

Second, the incarceration measure failed to capture short incarceration stays or those that occurred between interview periods. Incarceration is a dynamic event and shorter incarceration periods may have differential effects on offspring outcomes when compared to longer or multiple stays.⁹ The study results should be interpreted in light of these limitations, and future data collection efforts should be designed to capture data on a larger sample of incarcerated parents and their children and to include more precise measures of incarceration. Finally, the current dependent measures only reflected exposure to legal sanctions, not offspring involvement in criminal behavior. Future research should include self-reported measures of criminality and additional indicators of involvement in the criminal justice system, including incarceration.

The current research also offers suggestions for policy, particularly as related to the use of community sanctions. Removing mothers from the home, because of incarceration or general maternal absence, can increase the likelihood of negative outcomes for offspring. Keeping parents in the community may reduce the collateral consequences of incarceration for children. Although scholars have been calling for an expansion of intermediate sanctions over the past two decades (see [Morris & Tonry, 1990](#)), few substantive policies have been developed. Scholars have argued that because women commit predominately drug and property crimes, community sanctions merit special consideration for this population ([Parke & Clarke-Stewart, 2003](#)). Clearly, community sanctions are not appropriate for all offenders, nor is incarceration necessarily detrimental to every family. That said, for parents who are appropriate candidates for intermediate sanctions, researchers have found that women who participate in community-based programs have lower rates of recidivism and report better child-parent relations ([Devine, 1997](#)). In addition to providing programming and services to the incarcerated parent, programs are warranted

for children of incarcerated parents to mitigate some of the isolation and stigmatization that they may experience. A few such programs have been developed (see Moses, 1995), but most are small in scope and have not been subject to rigorous evaluation.

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Appendix A. Description of variables

Variable	Description	Years collected
<i>Dependent measures</i>		
Adult conviction	A dichotomous variable with respondents who had an adult conviction at any time between 1994 and 2000 = 1, 0 = respondent did not have an adult conviction between 1994 and 2000.	2000
Adult probation	A dichotomous variable with respondents who were on probation at any time between 1994 and 2000 = 1, 0 = respondent was not on probation at any time between 1994 and 2000.	2000
<i>Maternal characteristics</i>		
Incarceration	A dichotomous variable with mothers who were incarcerated at any point from 1980 to 2000 = 1, 0 = mother was not incarcerated at any time from 1980 to 2000.	1980–2000
Delinquency scale	A seventeen-item additive score (Cronbach’s alpha = 0.72) including types of delinquent acts committed during the past year including (a) purposely damaged or destroyed property that did not belong to you, (b) got into a physical fight at school or work, (c) took something from a store without paying for it, (d) other than from a store, took something not belonging to you worth under \$50, (e) other than from a store, took something not belonging to you worth \$50 or more, (f) used force or strong arm methods to get money or things from a person, (g) hit or seriously threatened to hit someone, (h) attacked someone with the idea of seriously hurting or killing them, (i) smoked marijuana or hashish, (j) used any drugs or chemicals to get high or for	1980

Appendix A (continued)

Variable	Description	Years collected
<i>Maternal characteristics</i>		
Delinquency scale	kicks other than marijuana, (k) sold marijuana or hashish, (l) sold hard drugs such as heroin, cocaine, or LSD, (m) tried to get something by lying to a person about what you would do for him, that is, tried to con someone, (n) took a vehicle for a ride or drive without the owner’s permission, (o) broke into a building or vehicle to steal something or just to look around, (p) knowingly sold or held stolen goods, (q) helped in a gambling operation, like running numbers or policy or books.	
Adolescent mother	A dichotomous variable with mothers who gave birth to a child before the age of eighteen = 1, 0 = mother gave birth to children while under the age of eighteen.	2000
Education	Highest grade completed in 1992.	1992
Smoking during pregnancy	A dichotomous variable with mothers who smoked during at least one of their pregnancies = 1, 0 = mother did not smoke while pregnant.	2000
<i>Characteristics of adult offspring</i>		
Age	Age in years.	2000
Sex	A dichotomous variable with male = 1, 0 = female.	2000
Black	A dichotomous variable with Black = 1, 0 = White/other race.	2000
Hispanic	A dichotomous variable with Hispanic = 1, 0 = White/other race.	2000
Education	Number of years of school completed in 2000.	2000
Maternal absence	A dichotomous variable with children living in a residence other than that of their biological mother, for reasons other than for incarceration, at one or more interview points = 1, 0 = child resided with biological mother at all interview points.	1980–1992
Delinquency	A fourteen-item additive scale (Cronbach’s alpha = 0.82), measuring participation in delinquent acts during the past three months including (a) smoked a cigarette, (b) drank alcohol, (c) used marijuana, (d) used cocaine, or during the past year (e) stayed out later than parents said, (f) hurt someone badly enough to need a doctor, (g) lied to parents about something important, (h) took something without paying for it, (i) damaged school property on purpose, (j) got drunk, (k) parents had to come to school, (l) skipped school without permission, (m) stayed out one night without permission.	1992
<i>Correlates of criminal behavior</i>		
Home environment	A sixteen-item standardized score (Cronbach’s alpha = 0.64) including	1992

(continued on next page)

Appendix A (continued)

Variable	Description	Years collected
<i>Correlates of criminal behavior</i>		
Home environment	the emotional support provided to each child. Mothers were asked if the child was expected to (a) make his/her bed, (b) clean his/her own room, (c) pick up after himself/herself, (d) keep shared living areas clean and straight, (e) do routine chores, and (f) help manage his/her own time. In addition, mothers were asked if (g) whole family got together with relatives or friends, child (h) spent time with father, stepfather, or father-figure, (i) spent time with father, stepfather, or father-figure in outdoor activities, and (j) eat a meal with both mother and father. Finally, mothers were asked (k) if they had to spank their child more than once in the past week. Interviewers noted if the mother, (l) encouraged child to contribute to the conversation, (m) answered the child's questions or requests verbally, (n) conversed with the child excluding scolding or suspicious comments, (o) introduced interviewer to child by name, and (p) mother's voice conveyed positive feeling about child.	
Parental supervision	A two-item additive scale including (Cronbach's alpha = 0.47): proportion of child's close friends mother recognizes by sight and name? (1 = child has no close friends, 2 = one of them, 3 = only a few, 4 = almost half, 5 = most of them, 6 = all of them) and how often a mother knows who her child is with when the child is not at home? (1 = rarely, 2 = some of the time, 3 = most of the time, 4 = all of the time).	1992
Peer pressure	A five-item additive score (Cronbach's alpha = 0.75), measuring types of peer pressure including, pressure from friends to (a) try cigarettes, (b) try marijuana/other drugs, (c) drink alcohol, (d) skip school, and (e) commit crime/violence.	1992

Notes

1. The unweighted form of NLSY data were used for the current analyses. Although the Bureau of Labor Statistics has formulated weights for single years to account for the sampling framework, no single set of survey weights provides an accurate adjustment when using multiple years of data (Center for Human Resource Research, 2001). Separate analyses were also conducted using weighted data to further confirm the appropriateness of the unweighted data (results not shown). The results obtained from the analyses were not substantially different from those presented in this article.

2. Interview staff were given six months to field personal interviews from participants (Center for Human Resource Research, 2001). The staff went to great lengths to conduct interviews at the

home of the participant; therefore, it was unlikely that individuals who were incarcerated for less than three months were coded as incarcerated.

3. Some sample members were under the age of eighteen between 1994 and 1999. Only convictions and probation sentences that were imposed when the respondent was eighteen or older were included in this measure. Respondents had different times at risk because of the age structure of the sample. To account for time at risk, a measure of adult offspring age was included in the final models. In addition, offspring conviction and probation did not precede maternal incarceration in any of the cases analyzed.

4. Data from the 1991 survey of state prison inmates were selected as a comparison year because the average year of first incarceration for the NLSY79 incarcerated sample was 1991.

5. Confirmatory factor analyses were conducted for the additive scales. Statistics for each of the variables were as follows: maternal delinquency (eigenvalue 3.68, factor >0.43), adolescent delinquency (eigenvalue 4.05, factor >0.50), parental supervision (eigenvalue 1.32, factor >0.81), home environment (eigenvalue 3.55, factor >0.52), and peer pressure (eigenvalue 4.95, factor >0.99).

6. Several measures of parental quality during early childhood were considered including early prenatal care, maternal smoking and drug use, and use of regular medical 'well care' visits for the child during the first year of life. In preliminary analyses, only prenatal smoking was found to be significant; therefore, the remaining variables were removed to maintain parsimony in the model.

7. Tests for multicollinearity were conducted; no variance inflation factor (VIF) or tolerance scores were high enough to suggest the presence of multicollinearity.

8. The delinquent activity and peer pressure measures were positively skewed; therefore, Poisson models were used to estimate the peer pressure and child delinquency models in early phases of the research. The Poisson models compensated for the over dispersion present in the dependent measures (Gardner, Mulvey, & Shaw, 1995). The results from the Poisson models did not differ substantively from the regression models.

9. A dichotomous measure of maternal incarceration was selected for use in the current research for several reasons. First, most (46 percent) of the women in the sample were incarcerated during only one interview period. The remainder were incarcerated for two (27 percent), three (23 percent), or five (4 percent) interview periods. The lack of variation in the data made comparisons by incarceration length difficult. Additional research is warranted on the effect of multiple incarceration events on offspring outcomes.

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