

# Parental Incarceration and Multiple Risk Experiences: Effects on Family Dynamics and Children's Delinquency

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**Abstract** Children of incarcerated parents are exposed to factors that place them at risk for delinquency. Few studies have examined the effects of having an incarcerated parent after controlling for other experiences such as contextual risk factors and family processes. Past studies have also not examined effects of recent, but not current, parental incarceration on children. The present study examines an archival dataset, in which children aged 10–14 years and their parents/guardians reported children's risk experiences (e.g., exposure to poverty, parental substance use), family processes (e.g., level of family victimization, family conflict), and children's delinquent behaviors at two time points. Parents also reported their recent and past incarceration history. Hierarchical linear regression analyses show that a history of parental incarceration predicted family victimization, delinquent behaviors of children's older siblings, and delinquent behaviors of the child participants, over and above children's demographic characteristics and other risk experiences. Recent parental incarceration predicted family conflict, family victimization, and parent-reports of children's delinquency after also controlling for previous parental incarceration. The role of family processes in research and intervention directions involving children of incarcerated parents is discussed.

**Keywords** Delinquency · Family processes · Parental incarceration · Cumulative risk experience

Exposure to parental incarceration is associated with higher rates of maladjustment in children. Children of incarcerated parents are more likely than their peers to drop out of school (Trice and Brewster 2004) and to be arrested (Murray and Farrington 2005). In fact, Murray and Farrington (2005) found that boys whose parents had been incarcerated were almost five times as likely to be incarcerated themselves when compared to boys separated from their parents for other reasons. In another study, having a convicted parent was one of the strongest childhood predictors of adult incarceration (Farrington 2000). Though the literature concerning children of incarcerated parents and their social and academic adjustment has grown recently, much of the available empirical research is based on small, nonrepresentative samples, uses only reports from currently-incarcerated parents, and does not take into account high-risk environments that children of incarceration parents often encounter. Often, important aspects of the family lives of children of incarcerated parents are not examined, even though poor family dynamics, such as conflict at home and experience of crime by the family, affect children's functioning. The present study attempts to add to the literature by further examining experiences of children and families who have experienced a past as well as a recent parental incarceration and how parental incarceration may predict children's delinquency beyond the effects of other factors.

## Risk Factors Experienced by Children of Incarcerated Parents

When parents are incarcerated, they leave behind children and families who must cope with not only the separation from the parent, but also social stigma and loss of financial

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support associated with the incarceration of a parent (see Arditti 2005). These children are more likely than those without an incarcerated parent to be a member of an ethnic minority group (Glaze and Maruschak 2008), to be exposed to parents' illegal drug use (Mumola 2000), and live in extreme poverty (Phillips et al. 2002). These risk factors are associated with children's maladjustment, including depressive symptoms (Wight et al. 2005) and poor academic functioning (Egeland and Abery 1991). Studies examining the effects of parental incarceration on children without also accounting for the effects of other such experiences may actually be observing the effects of multiple risk factors, one of which is parental incarceration.

Interactions within the family unit may also place children at risk for poor social and academic functioning. These interactions are especially relevant when considering the stress the incarceration of a parent is likely to place on a family. With a parent removed, the family must reorganize and restructure their dynamics, and children may be unsupervised more often as the remaining parent may work two jobs or longer hours. Parents remaining in the home exhibit more stress after the incarceration of their spouse (Nesmith and Ruhland 2008), and report higher levels of financial problems and poorer health (Arditti et al. 2003). When an incarcerated parent returns home, dynamics must shift once again, and stress levels at home may continue to be elevated for some period of time. Children whose families are characterized by high levels of conflict and control and low levels of cohesion are more likely than their peers to be diagnosed with externalizing disorders (Haddad et al. 1991), to show depressive symptoms (Garber and Horowitz 2002), and to exhibit higher levels of delinquency (Matherne and Thomas 2001). Though Phillips et al. (2006) found that children of incarcerated mothers experienced more familial risk factors, such as parental drug use, and harsher parental punishment than their peers, it is also necessary to examine how these and other familial experiences may influence children's adjustment. This includes examining the influence of other family processes (e.g., conflict, structure) on children, and how family members besides parents, such as siblings, may influence children's functioning.

Family conflict in particular is an important process to examine in relation to children's behavior. Children exposed to high levels of conflict at home may model interactions with peers and non-family members after the interactions of family members. In fact, families of children diagnosed with conduct disorder or oppositional defiant disorder experience higher levels of conflict in their families than peers (George et al. 2006). If coupled with exposure to an incarcerated parent, regular exposure to high levels of conflict in the family may influence children's delinquent behaviors.

Children are also influenced by their siblings' delinquency. Self-reported delinquent behavior levels are highly correlated between same-sex sibling dyads in adolescence (Slomkowski et al. 2001), and the negative effects of having a delinquent sibling continue over time (Farrington and West 1993). In 2007, a survey of inmates found that parents who were incarcerated had, on average, two minor children (Glaze and Maruschak 2008). The effects of parental incarceration are likely to be felt by all children in the home. Murray and Farrington (2005) found that adolescents exposed to parental incarceration are more likely to exhibit delinquent behaviors, and these delinquent adolescents may serve as role models for their younger siblings. These children may be more likely to exhibit delinquent behaviors, as they have both a delinquent parent and older sibling after whom to model their behavior.

### **Analysis of Cumulative Risk in Children with Incarcerated Parents**

Past studies examining the effect of parental incarceration on children have focused on the incarceration as the sole independent variable (e.g., Dannerbeck 2005), though these children have been called "a highly vulnerable group with multiple risk factors for adverse outcomes" (Murray and Farrington 2005, p. 1269). To better understand the experiences of these children, it is necessary to examine parental incarceration in light of other risk factors that may influence development. The manner in which to examine these risk factors, however, is debated.

In their study of social risk factors in African-American children, Burchinal et al. (2000) discussed issues with methods of risk analysis, and employed multiple data analytic methods to their sample to see which best predicted developmental outcomes, pathways, and patterns. By examining children's risk experiences via multiple regression analyses, one can examine how risk factors individually and jointly affect a dependent variable. In contrast, researchers have also examined multiple risk factors by using risk index scores as the predictor variable. Risk index scores are created by tallying the presence of risk factors, then summing them to generate a score indicating the total risk. Burchinal et al. (2000) compared these methods and found that multiple regressions of individual factors better predicted outcomes over time, but that this method could not predict children's adjustment within time periods as well as the risk index score. As we were interested in non-longitudinal predictors of children's delinquent behavior, a risk index score modeled after the one used by Sameroff et al. (1993) was chosen for the current study. While Sameroff and colleagues originally designed the risk index score to examine relations between exposure

to risk and children's cognitive outcomes, studies have adapted it to examine the effect of exposure to risk on children's externalizing (Burchinal et al. 2008; Flouri and Tzavidis 2008) and internalizing (Dallaire et al. 2008) behaviors. Thus, a risk score based on Sameroff and colleagues' work is appropriate for the current examination of externalizing behaviors of children of incarcerated parents.

## Hypotheses

Based on a review of the literature, the following hypotheses were developed. Children exposed to a past parental incarceration were expected to report exposure to more risk experiences than their peers whose parents have not been incarcerated (as suggested by Phillips et al. 2006). We expected that families with an incarcerated parent would experience more negative family processes (as suggested by Phillips et al. 2006, Nesmith and Ruhlman 2008), specifically more family victimization, older sibling delinquency, and family conflict, as well as less family organization and cohesion. We also expected that children who had experienced parental incarceration would exhibit more delinquency than their peers (as in Murray and Farrington 2005). These effects were expected to prevail beyond the effects of child and family characteristics and children's risk experience. Finally, family process variables were expected to impact children's delinquency beyond the effects of parental incarceration. At follow-up, we also expected children who have been exposed to recent parental incarceration would be exposed to more negative family processes and exhibit more delinquent behavior than children who had not experienced recent parental incarceration. We expected to see these influences over and above the effects of demographic characteristics, children's risk experience, and previous parental incarceration. Finally, it was expected that family processes would predict children's delinquency over and above recent parental incarceration.

## Method

### Participants

In five cities (Austin, TX; Bridgeport, CT; Memphis, TN; Seattle, WA; Savannah, GA), schools in distressed neighborhoods participated in the Children-at-risk program (CAR), a neighborhood-based intervention aimed at preventing drug use, delinquency, and other problem behaviors in high-risk youth. CAR staff contacted schools in these neighborhoods, and eligible youth were identified

from school and court records. Eligibility for the CAR program required school reports of (a) at least three school problems (e.g., grade retention, truancy, tardiness); (b) at least one family risk indicator (e.g., family violence history, family criminal activity); or (c) at least one personal risk indicator (e.g., suspected drug involvement, teen pregnancy, gang membership). Participants ( $N = 857$ ) were randomly assigned to treatment or control groups. The treatment group ( $n = 332$ ) participated in the CAR program, which included case management and family, court, and neighborhood services, whereas members of the control group ( $n = 322$ ) received no services. Because control group members were exposed to neighborhood interventions (i.e., increases in police patrolling), additional participants that met participation requirements were selected from other distressed neighborhoods not participating in the CAR program to be in a quasi-experimental group ( $n = 203$ ).

Data collection occurred at two time points, once before the CAR program began (baseline), then at the conclusion of the program 2 years after the baseline assessment (follow-up). Participants' (48% female) mean age was 12.36 years (range 10–14) at baseline and 14.36 years (range 12–16) at follow-up. Most (57%) were African-American, one-third (34%) were of Hispanic descent, 6% were Caucasian, and 2% were Asian. At follow-up, 670 of the 857 original participants continued in data collection, thus the attrition rate for children's data was 23%. An independent samples *t*-test to examine whether attrition was related to children's delinquency showed that children who did not participate at follow-up were no more delinquent than other children,  $t(824) = -0.26$ , ns.

Almost all (97%) of the youths' parents or guardians participated in baseline data collection, and 670 parents participated at follow-up (an attrition rate of 22%). An attrition rate of less than one-quarter of original participants over 2 years is acceptable with a high-risk sample. Paschall et al. (2003) were unable to collect data from 17% of their participants after 1 year, whereas Sameroff et al. (1993) collected data on only 56% of their original participants after 9 years.

Participating parents were predominately female (89%), and almost half (44%) were unemployed at baseline. Most (82%) were children's mothers, 8% were fathers, 7% were grandmothers, 2% were children's aunts, and the remaining parents were other relatives, step-parents, or other legal guardians. Additional demographic information (e.g., education) is presented by history of parental incarceration in Tables 1 and 2.

The number of participants in each analysis varied, as complete data was not available for all cases and all scales. Sample sizes varied from 244 to 846 participants, with smaller sample sizes the result of including data on

**Table 1** Descriptive statistics at baseline of children with and children without a history of parental incarceration

Variable	No parental incarceration ( <i>n</i> = 724) <i>M</i> ( <i>SD</i> )	History of parental incarceration ( <i>n</i> = 150) <i>M</i> ( <i>SD</i> )	<i>t</i> -Value ( <i>df</i> )
<b>Control variables</b>			
Gender (% male)	53% ( <i>n</i> = 371)	50% ( <i>n</i> = 75)	0.51 (846)
Age	12.34 (0.71)	12.50 (0.59)	−2.53 (846)
Parent gender (% male)	23% ( <i>n</i> = 161)	19% ( <i>n</i> = 29)	0.48 (846)
<b>Incarceration variables</b>			
Parent ever arrested (%)	5% ( <i>n</i> = 35)	100% ( <i>n</i> = 150)	−34.12*** (846)
Parent ever appeared in court (%)	10% ( <i>n</i> = 70)	54% ( <i>n</i> = 81)	−13.99*** (846)
Parent ever on probation (%)	4% ( <i>n</i> = 28)	47% ( <i>n</i> = 71)	−18.03*** (846)
<b>Risk variables</b>			
Child an ethnic minority (%)	93% ( <i>n</i> = 651)	99% ( <i>n</i> = 149)	−2.58** (846)
Mother absent (%)	13% ( <i>n</i> = 91)	7% ( <i>n</i> = 11)	−2.23* (846)
Father absent (%)	72% ( <i>n</i> = 504)	54% ( <i>n</i> = 81)	−4.46*** (846)
Number of children in the home	3.08 (1.53)	3.14 (1.47)	−0.46 (846)
Parent drug use (%)	3% ( <i>n</i> = 21)	6% ( <i>n</i> = 9)	−1.46 (842)
Financial problems (%)	73% ( <i>n</i> = 511)	79% ( <i>n</i> = 119)	1.47 (844)
Parent employed (%)	44% ( <i>n</i> = 308)	43% ( <i>n</i> = 65)	0.32 (844)
Parent completed high school (%)	51% ( <i>n</i> = 357)	37% ( <i>n</i> = 56)	−3.14** (844)
Risk index score	3.84 (1.16)	3.96 (1.11)	−1.16 (840)
<b>Family process variables</b>			
FES Organization	6.33 (1.89)	6.44 (1.84)	−0.64 (812)
FES Cohesion	6.88 (1.77)	6.85 (1.82)	0.19 (821)
FES Conflict	4.62 (1.76)	4.48 (1.82)	0.89 (818)
Crimes against family	0.94 (1.24)	1.20 (1.26)	−2.35* (841)
Sibling delinquency	1.99 (2.02)	2.82 (2.35)	−2.98** (398)
<b>Delinquency</b>			
Parent report of youth delinquency	2.02 (1.75)	2.38 (2.05)	−2.18* (822)
Youth self-report of delinquency	15.36 (3.54)	15.13 (3.21)	0.71 (821)

Note: Risk index is comprised of the sum of seven risk experiences (unemployed parent, parental drug use, parent did not complete high school, single-parent family, child's ethnic minority status, 4 or more kids at home, family financial problems), with higher values indicating greater experience of risks

FES Family Environment Scale

\*  $p < .05$ ; \*\*  $p < .01$ ;

\*\*\*  $p < .001$

children's older siblings in the analyses, as only 50% of children had older siblings.

## Measures

### Ethnic Minority Status

Ethnic minority status was collected by CAR program staff as part of screening criteria, and was dichotomized as 0 if a child was identified as White and as 1 if they were identified as non-White. Ethnic minority status (that is, experience of being non-White) has been included as a risk factor for psychosocial maladaptation in several studies (e.g., Gutman et al. 2003; Sameroff et al. 1993; Dallaire et al. 2008), and represents a relative social disadvantage placed on these individuals. Though the relation between delinquency and race is complex and may be explained by other contextual risk variables (see, for example, Holmes et al. 2009), the total arrest rate for black juveniles aged

10–17 is more than twice that as of white juveniles (National Center for Juvenile Justice 2008).

### Parental Absence

Parental absence was also collected by CAR program staff as part of screening criteria and refers to if the child's mother or father was absent at the beginning of the CAR program. Parental absence was dichotomized as 0 if the child had both parents present, and as 1 if they experienced the absence of either parent.

### Children in Home

The number of minor children living in the home was collected as part of screening criteria, and was dichotomized as 0 for a home with three or less children and as 1 for a home with four or more children.

**Table 2** Descriptive statistics at follow-up of children with and children without recent experience of parental incarceration

Variable	No recent parental incarceration ( <i>n</i> = 640) <i>M</i> ( <i>SD</i> )	Recent parental incarceration ( <i>n</i> = 30) <i>M</i> ( <i>SD</i> )	<i>t</i> -Value ( <i>df</i> )
<b>Control variables</b>			
Gender (% male)	53% ( <i>n</i> = 339)	63% ( <i>n</i> = 19)	−1.00 (679)
Age	12.35 (0.69)	12.33 (0.61)	0.12 (679)
Parent gender (%)	21% ( <i>n</i> = 134)	30% ( <i>n</i> = 9)	−0.46 (679)
<b>Risk variables</b>			
Child an ethnic minority (%)	94% ( <i>n</i> = 602)	97% ( <i>n</i> = 29)	−0.55 (679)
Mother absent (%)	13% ( <i>n</i> = 83)	7% ( <i>n</i> = 2)	−1.04 (679)
Father absent (%)	69% ( <i>n</i> = 442)	57% ( <i>n</i> = 17)	−1.46 (679)
# Children in home	3.07 (1.56)	3.03 (1.27)	0.11 (679)
Parent drug use (%)	5% ( <i>n</i> = 32)	24% ( <i>n</i> = 7)	−4.50*** (678)
Financial problems (%)	70% ( <i>n</i> = 448)	87% ( <i>n</i> = 26)	−1.95* (677)
Parent employed (%)	52% ( <i>n</i> = 333)	57% ( <i>n</i> = 17)	0.45 (678)
Parent completed high school (%)	84% ( <i>n</i> = 538)	97% ( <i>n</i> = 29)	1.18 (679)
Risk index score	3.39 (1.21)	3.52 (1.06)	−0.56 (675)
<b>Family process variables</b>			
FES Organization	6.02 (2.37)	6.40 (3.09)	−1.49 (518)
FES Cohesion	5.64 (2.41)	5.44 (2.01)	0.78 (517)
FES Conflict	7.44 (2.34)	7.92 (3.99)	−1.88 <sup>†</sup> (514)
Crimes against family	1.00 (1.29)	1.63 (2.01)	−2.56* (671)
Sibling delinquency	2.20 (2.04)	2.88 (3.94)	−0.88 (251)
<b>Delinquency</b>			
Parent report of youth’s delinquency	2.50 (2.06)	3.54 (2.38)	−2.59** (659)
Youth self-report of delinquency	16.01 (4.07)	17.33 (5.78)	−1.21 (386)

*Note:* Risk Index is comprised of the sum of seven risk experiences (unemployed parent, parental drug use, parent did not complete high school, single-parent family, child’s ethnic minority status, 4 or more kids at home, family financial problems), with higher values indicating greater experience of risks

FES Family Environment Scale

<sup>†</sup> *p* < .10; \* *p* < .05;

\*\* *p* < .01; \*\*\* *p* < .001

*Parental Unemployment*

Parental unemployment was reported by parents and was dichotomized as 0 for being currently employed and as 1 for being currently unemployed. Parents reported their educational attainment, and this was dichotomized as 0 if the parent had completed high school, and as 1 if the parent had not.

*Parental Drug Use*

Parental drug use refers to parent self-report of use of any substance to “get high in the last year,” and was dichotomized as 0 if the parent reported not using drugs to get high, and as 1 if they reported using any drug to get high.

*Family Financial Problems*

Family financial problems were reported by parents answering if “having enough money is a problem” for their family, and was dichotomized as 0 if the parent reported that having enough money was not a problem, and as 1 if

the parent reported that having enough money was a minor or major problem for the family.

*Risk Index Score*

Guided by the environmental risk score created by Sameroff et al. (1993), these seven variables were used to create a risk index score in the present study. We summed across these seven dichotomous variables to create an overall risk index score, which could range from 0 (indicating a lack of risk experience) to 7 (indicating a full range of risk experience). A risk index score was calculated for children at baseline and follow-up. Children’s risk index scores at baseline and follow-up were significantly, positively correlated, (*r* = .59, *p* < .001). At baseline, complete risk index scores were available for 843 children (98% of the sample), and 660 children had complete risk index scores at follow-up (78% of the sample).

*Parental Incarceration*

Parent participants reported their history of incarceration. At baseline, parents reported whether they had ever been

incarcerated and how many times. At follow-up, parents reported if they had been incarcerated in the past 2 years. At baseline, 150 parents had been incarcerated at least once (17.5%); on average, they had been incarcerated 1.72 times, though responses ranged from once to 15 times. Eighty-one percent ( $n = 122$ ) of incarcerated parents were mothers—which as the parent sample consisted of 91% mothers, this was not surprising. At follow-up, 30 parents (3.5%) reported being incarcerated in the last 2 years. Six of these parents were repeat offenders, reporting incarceration both at baseline and follow-up.

### *Family Environment*

Familial interactions were examined with four subscales of the Family Environment Scale (FES; Moos and Moos 1994) completed by the youth. The FES consists of 90 items divided across three dimensions (Real, Ideal, and Expected) and ten subscales. We examined child-reports of the following four subscales on the Real dimension: Organization, Cohesion, Control, and Conflict. The Real dimension of these subscales asks respondents about their current family environment. Each item is administered in true/false format. The Organization subscale (FES Organization) measures the level of organization in the family, with items such as “Activities in our family are carefully planned,” and “It’s often hard to find things when you need them in our home.” The Cohesion subscale (FES Cohesion) measures the level of structure in the family. Items on the Cohesion subscale include “There is a feeling of togetherness in our family,” and “There is little group spirit in our family.” The Control subscale (FES Control) measures the level of control held by family members over others. Items include “One family member makes most decisions,” and “Family members are rarely ordered around.” The Conflict subscale (FES Conflict) measures the amount of conflict within in the family, with items such as “We fight a lot in our family,” and “Family members hardly ever lose their tempers.” The FES subscales have high internal consistency reliability, with Cronbach’s alphas ranging from .61 to .78, and test–retest reliability for the subscales range from .52 to .91 for 2-, 3-, and 12-month intervals (Moos and Moos 1994). The Cronbach’s alphas for the subscales at baseline were: Cohesion, .60; Conflict, .61; Organization, .61; and Control, .08. Reliability coefficients at follow-up were similar: Cohesion, .66; Conflict, .72; Organization, .55; and Control, .32. Because of its low alpha level, FES Control was not retained for analysis. Of the 857 child participants in baseline data collection, 833 had complete FES Organization scores (97%), 842 had complete FES Cohesion scores (98%), and 839 had complete FES Conflict scores (98%). At follow-up, 664 of the 670 child participants had complete FES Organization

scores (99%), 661 had complete FES Cohesion scores (99%), and 660 had complete FES Conflict scores (99%).

### *Older Sibling Delinquency*

Parents of the 432 children with older siblings (50% of the sample) were asked about delinquent behaviors of these siblings at baseline and follow-up. If parents reported the target children having more than one older sibling, they were instructed to answer about any of the older siblings. A typical set of questions read, “Does the youth’s older sibling get into fights?” Eleven delinquent behaviors were described and parents were asked to indicate the absence (0) or presence (1) of each behavior for the child’s older sibling(s). Internal consistency reliability of this measure of sibling delinquency was .74 at baseline, and .73 at follow-up. Complete data was available for all child participants with older siblings at baseline, while complete parent reports of older sibling delinquency was available for 268 of these 432 children (62%) at follow-up. Analyses in which sibling delinquency was either the dependent or a predictor variable had relatively small sample sizes (in comparison to the other analyses) due to only half of participating children having older siblings.

### *Family Victimization*

Parents reported the extent to which the family had experienced criminal victimization over the past 12 months at baseline. At follow-up, they reported the extent of criminal victimization experienced in the past 2 years. Nine items asked if a member of the family had experienced different forms of victimization. Typical items asked, “Have you or anyone in your family been beaten up?” and, “Did anyone try to rob you or anyone in your family?” Parents responded either “yes” or “no” to each item. Internal consistency reliability coefficients for reported crimes against the family were .54 at baseline and .60 at follow-up; however, scale reliability for these variables were not expected to be high, as experience of one crime (e.g., being attacked) does not necessarily make one more likely to also experience another (e.g., being a victim of arson). Complete parent reports of family victimization were available for 845 of 857 children (99%) at baseline, and for 666 of 670 children (99%) at follow-up.

### *Youth Delinquency*

Parents reported the number of delinquent behaviors of their children at baseline and follow-up. A typical question asked, “Does the youth get into fights?” Eleven delinquent behaviors were described and parents indicated the absence (0) or presence (1) of each for their child. Internal

consistency reliability for parent-reports of youth delinquency was .67 at baseline, and .72 at follow-up. Complete data for parent reports of youth delinquency were available for 826 of 857 children (96%) at baseline, and 664 of 670 children (99%) at follow-up.

Children reported their delinquent behaviors using a similar measure. Youths reported at baseline and follow-up if they had ever participated in 13 delinquent behaviors, such as robbing someone, stealing a car, or arson. Youths' responses were coded for the frequency of the behavior: never (1), once or twice (2), three or four times (3), and four or more times (4). Internal consistency reliability coefficients for children's report of delinquency were .80 at baseline, and .84 at follow-up. Complete data of children's self reports of delinquency were available for 842 of 857 participants (98%) at baseline, and for 484 of 670 participants (72%) at follow-up.

Parent-reports and child self-reports of delinquency were not significantly correlated at either baseline or follow-up. Reports also did not correlate longitudinally (e.g., child reports of delinquency at baseline were not associated with parents' reports of children's delinquency at follow-up or vice versa). Significant positive relations were found within reporters, however, with both child,  $r(468) = .44, p < .001$ , and parent,  $r(628) = .43, p < .001$ , reports significantly correlated at baseline and follow-up.

Procedure

CAR program staff interviewed participants in their homes. Data collection occurred between 1993 and 1996.

Information on children's and parents' demographics, family characteristics, children's risk experiences, and parent-reports of children's problems at school was collected at baseline and follow-up (for information on the CAR program and the administration of measures, see Harrell et al. 1999). Data was collected and compiled by members of the CAR program staff, and was made available to the authors through an agreement with The College of William & Mary as a part of the Inter-university Consortium for Political and Social Research (ICPSR).

Results

Preliminary and Descriptive Data Analyses

We conducted *t*-tests and correlation analyses comparing children with a history of parental incarceration and their peers on contextual and risk experiences and delinquency at baseline and follow-up (see Tables 1, 2, and 3). At baseline, children who had been exposed to parental incarceration were more likely to be an ethnic minority,  $t(846) = -2.58, p < .01, d = .31$ , to have their mother,  $t(846) = -2.23, p < .05, d = .20$ , and father,  $t(846) = -4.46, p < .05, d = .38$ , present in at home, to experience crimes against the families,  $t(841) = -2.35, p < .05, d = .21$ , to have delinquent older siblings,  $t(398) = -2.98, p < .01, d = .38$ , and exhibit more delinquent behaviors according to their parents,  $t(822) = -2.18, p < .05, d = .19$ . Children exposed to parental incarceration were less likely to have parents who completed high

**Table 3** Linear correlations between variables of interest at baseline (below the diagonal) and follow-up (above the diagonal)

Variable	1	2	3	4	5	6	7	8	9	10
1. Youth's age	–	–.01	–.06	–.02	–.01	.00	.03	–.01	.02	.04
2. Parental incarceration	.09*	–	.02	.07	–.03	.08	.10*	.06	.10**	.06
3. Risk index	.02	.04	–	.06	.03	–.05	.05	.01	.08*	.03
<i>Family process</i>										
4. FES organization	.02	.02	–.01	–	.58***	–.45***	.02	.01	–.04	.11*
5. FES cohesion	.04	–.01	–.07*	.55***	–	–.60***	–.02	–.02	–.05	.26***
6. FES conflict	–.05	–.03	.05	–.43***	–.48***	–	.03	.06	–.01	–.32***
7. Family victimization	.02	.08*	.01	–.04	.03	–.01	–	.27***	.16***	.00
8. Sibling delinquency	.05	.15**	.09	.01	–.01	.04	.16***	–	–.10*	.02
<i>Delinquency</i>										
9. Parent report	.00	.08*	.04	.01	.03	–.01	.17***	.23**	–	.06
10. Child report	–.03	–.03	.07*	–.24***	–.27***	.23***	–.07	.00	.03	–

*Note:* Risk index is comprised of the sum of seven risk experiences (unemployed parent, parental drug use, parent did not complete high school, single-parent family, child's ethnic minority status, 4 or more kids at home, family financial problems), with higher values indicating greater experience of risks

FES Family Environment Scale

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

school,  $t(844) = -3.14, p < .01, d = .29$ . Similar differences were found when we compared children who recently experienced parental incarceration and their peers at follow-up. At follow-up, children exposed to recent parental incarceration were also more likely to be exposed to parental substance use,  $t(678) = -4.50, p < .001, d = .55$ , and to live in a family experiencing financial problems,  $t(677) = -1.95, p < .05, d = .41$ . Parents who had recently been incarcerated were more likely than other parents to report family victimization ( $t(671) = -2.56, p < .05, d = .37$ ) and reported their children as more delinquent than did other parents ( $t(659) = -2.59, p < .01, d = .47$ ). Children of recently incarcerated parents were also more likely than their peers to report high levels of family conflict; this trend approached significance,  $t(514) = 1.88, p = .06$ .

### Baseline Regression Analyses

To test the hypothesis that history of parental incarceration predicts poor family processes over and above children's risk experiences, we conducted a set of hierarchical regression analyses in which family victimization, sibling delinquency, and children's report of family organization, conflict, and cohesion, and in which we controlled for children's age and gender, parent participant gender, and children's risk index score (see Table 4). History of parental incarceration predicted more family victimization,  $\beta = .08, p < .05, \Delta R^2 = .006$ , and more sibling delinquency,  $\beta = .14, p < .01, \Delta R^2 = .019$ .

Hierarchical regression analyses were conducted with history of parental incarceration as the predicting variable and parent- and child-reports of children's delinquency as the dependent variables (see Table 5). We again controlled for children's age and gender, parent participant gender,

and children's risk index score. Experience of parental incarceration was not predictive of children's self-reported delinquency; however, children who were exposed to parental incarceration were reported by their parents to exhibit more delinquent behaviors than their peers ( $\beta = .07, p < .05, \Delta R^2 = .005$ ), over and above demographic variables and risk experiences.

We conducted a final hierarchical regression analysis at baseline. In addition to controlling for children's age and gender, parent participant gender, and children's risk experience, we also controlled for family processes related to parental incarceration (family victimization, sibling delinquency; see Table 6). After controlling for these experiences, having a history of parental incarceration no longer predicted parents' reports of children's delinquency.

### Follow-Up Regression Analyses

At follow-up, we examined whether recent parental incarceration (parental incarceration occurring in the 2 years between baseline and follow-up data collection) predicted family environment, family victimization, older sibling delinquency, and children's delinquency with a series of hierarchical linear regression analyses. In addition to controlling for children's age and gender, parent participant gender, and children's risk experiences (as in baseline analyses), we also controlled for parental incarceration prior to beginning the CAR program. Additionally, we included an experimental group dummy coded variable (i.e., treatment group = 3, control group = 2, quasi-experimental group = 1) as a predictor variable in all analyses conducted using follow-up data.

In this set of analyses, after the control variables were entered, the level of conflict in the family ( $\beta = .09, p < .05, \Delta R^2 = .008$ ) and experience of family victimization

**Table 4** Hierarchical regression analyses predicting family process variables by history of parental incarceration at baseline

	Family victimization ( $n = 837$ )			Sibling delinquency ( $n = 398$ )		
	$B$ (SE $B$ )	$\beta$	$\Delta R^2$	$B$ (SE $B$ )	$\beta$	$\Delta R^2$
Step 1			.003			.006
Child gender	.119 (.077)	.054		.192 (.168)	.057	
Child age	.017 (.063)	.010		.089 (.151)	.030	
Caregiver gender	.023 (.041)	.020		.034 (.094)	.018	
Step 2			.000			.007
Risk index	.003 (.037)	.003		.146 (.093)	.078	
Step 3			.006*			.019**
Parental incarceration	.259 (.113)	.080*		.787 (.282)	.140**	

*Note:* Risk index is comprised of the sum of seven risk experiences (unemployed parent, parental drug use, parent did not complete high school, single-parent family, child's ethnic minority status, 4 or more kids at home, family financial problems), with higher values indicating greater experience of risks

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$



**Table 5** Hierarchical regression analyses predicting children’s delinquency by history of parental incarceration at baseline

	Parent report of children’s delinquency ( <i>n</i> = 819)			Child self-report of delinquency ( <i>n</i> = 817)		
	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$
Step 1			.000			.005
Child gender	−.029 (.113)	−.009		.341 (.217)	.055	
Child age	−.019 (.092)	−.007		−.190 (.176)	−.038	
Caregiver gender	−.020 (.059)	−.012		−.052 (.114)	−.016	
Step 2			.001			.005*
Risk index	.054 (.055)	.034		.215 (.106)	.071*	
Step 3			.005*			.001
Parental incarceration	.350 (.166)	.074*		−.231 (.322)	−.025	

*Note:* Risk index is comprised of the sum of seven risk experiences (unemployed parent, parental drug use, parent did not complete high school, single-parent family, child’s ethnic minority status, 4 or more kids at home, family financial problems), with higher values indicating greater experience of risks

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 6** Hierarchical regression analyses predicting children’s delinquency by history of parental incarceration at baseline

	Parent report of children’s delinquency ( <i>n</i> = 397)			Child self-report of delinquency ( <i>n</i> = 388)		
	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$
Step 1			.002			.005
Child gender	−.003 (.142)	−.001		−.007 (.272)	−.001	
Child age	.009 (.127)	.003		−.176 (.245)	−.037	
Caregiver gender	−.058 (.079)	−.036		−.146 (.151)	−.050	
Step 2			.004			.005
Risk index	.075 (.079)	.047		.208 (.151)	.071	
Step 3			.064***			.001
Family victimization	.178 (.070)	.126*		−.094 (.136)	−.036	
Sibling delinquency	.164 (.043)	.192***		.007 (.082)	.004	
Step 4			.004			.000
Parental incarceration	.303 (.239)	.063		.007 (.459)	.001	

*Note:* Risk index is comprised of the sum of seven risk experiences (unemployed parent, parental drug use, parent did not complete high school, single-parent family, child’s ethnic minority status, 4 or more kids at home, family financial problems), with higher values indicating greater experience of risks

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

( $\beta = .08, p < .05, \Delta R^2 = .006$ ) were both predicted by the recent experience of parental incarceration (see Table 7). Children of recently incarcerated parents were also more likely than their peers to be reported by their parents as delinquent,  $\beta = .09, p < .05, \Delta R^2 = .008$  (Table 8). As at baseline, children’s report of their own delinquent behavior was not predicted by recent parental incarceration. A final set of regression analyses was conducted to examine whether recent parental incarceration affected children’s delinquency beyond the effects of demographic characteristics, risk experience, previous parental incarceration, and family conflict and victimization levels. These analyses showed that recent parental incarceration no longer predicted

children’s delinquency after also considering the effects of family process variables (Table 9).

**Discussion**

The current study examined the effects of having a family history of parental incarceration on family processes and children’s delinquency, over and above the effects of other factors, and the effects of recent parental incarceration on family processes and children’s delinquency after accounting for previous parental incarceration. Children’s delinquent behavior, according to parent reports, was

**Table 7** Hierarchical regression analyses predicting family processes by recent parental incarceration at follow-up

	Family conflict ( <i>n</i> = 498)			Family victimization ( <i>n</i> = 653)			Sibling delinquency ( <i>n</i> = 244)		
	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$
Step 1			.004			.006			.009
Child gender	.166 (.184)	.041		-.131 (.090)	-.057		.083 (.201)	.027	
Child age	-.101 (.162)	-.028		.030 (.076)	.015		-.072 (.207)	-.023	
Caregiver gender	.092 (.126)	.033		.036 (.055)	.025		.104 (.099)	.068	
Treatment group	.000 (.143)	.000		-.071 (.067)	-.041		.171 (.179)	.063	
Step 2			.003			.003			.000
Risk index	-.113 (.088)	-.057		.064 (.043)	.058		-.019 (.130)	-.010	
Step 3			.000			.019***			.005
Past parental incarceration	-.072 (.297)	-.011		.412 (.140)	.119**		.385 (.401)	.064	
Step 4			.008*			.006*			.002
Recent parental incarceration	1.076 (.541)	.092*		.499 (.259)	.077*		.500 (.795)	.042	

*Note:* Risk index is comprised of the sum of seven risk experiences (unemployed parent, parental drug use, parent did not complete high school, single-parent family, child's ethnic minority status, 4 or more kids at home, family financial problems), with higher values indicating greater experience of risks

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 8** Hierarchical regression analyses predicting children's delinquency by recent parental incarceration at follow-up

	Parent report of children's delinquency ( <i>n</i> = 641)			Child self-report of delinquency ( <i>n</i> = 379)		
	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$
Step 1			.007			.006
Child gender	.178 (.141)	.050		.017 (.343)	.003	
Child age	.077 (.119)	.026		.471 (.312)	.079	
Caregiver gender	-.003 (.086)	-.001		.010 (.298)	.002	
Treatment group	.158 (.105)	.059		-.131 (.267)	-.026	
Step 2			.007*			.001
Risk index	.140 (.067)	.082*		.129 (.169)	.039	
Step 3			.004			.000
Prior parental incarceration	.222 (.220)	.041		-.180 (.567)	-.017	
Step 4			.010*			.004
Recent parental incarceration	1.045 (.419)	.101*		1.462 (1.139)	.068	

*Note:* Risk index is comprised of the sum of seven risk experiences (unemployed parent, parental drug use, parent did not complete high school, single-parent family, child's ethnic minority status, 4 or more kids at home, family financial problems), with higher values indicating greater experience of risks

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

predicted by a history of parental incarceration. Family victimization and sibling delinquency was also predicted by a history of parental incarceration. However, once family victimization and sibling delinquency were added to the prediction equation, a history of parental incarceration no longer predicted children's delinquent behaviors. Children who had experienced the incarceration of a parent in the last 2 years were more likely than their peers to report family conflict, and their parents were more likely to report experiences of family victimization. This association continued to be predicted by exposure to recent parental

incarceration after taking into account the effects of demographic characteristics, children's cumulative risk experience, and previous parental incarceration. Recently incarcerated parents reported their children as more delinquent, even after accounting for effects of exposure to risk and previous parental incarceration; however, once family conflict and victimization were added to the prediction equation, recent parental incarceration no longer predicted children's delinquency. These results support available literature on family processes and parental incarceration.

**Table 9** Hierarchical regression analyses predicting children’s delinquency by recent parental incarceration at follow-up

	Parent report of children’s delinquency ( <i>n</i> = 476)			Child self-report of delinquency ( <i>n</i> = 370)		
	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$	<i>B</i> (SE <i>B</i> )	$\beta$	$\Delta R^2$
Step 1			.011			.006
Child gender	.244 (.154)	.072		.131 (.333)	.020	
Child age	.130 (.136)	.044		.333 (.306)	.055	
Caregiver gender	–.043 (.105)	–.019		.079 (.288)	.014	
Treatment group	.178 (.121)	.067		–.164 (.260)	–.032	
Step 2			.006			.001
Risk index	.120 (.075)	.073		.084 (.164)	.026	
Step 3			.004			.000
Prior parental incarceration	.117 (.254)	.022		–.205 (.566)	–.019	
Step 4			.027***			.093***
Family conflict	.005 (.038)	.006		–.536 (.086)	–.314***	
Family victimization	.237 (.069)	.157***		.033 (.164)	.010	
Step 5			.007			.008
Recent parental incarceration	.852 (.473)	.085		2.043 (1.114)	.096	

*Note:* Risk index is comprised of the sum of seven risk experiences (unemployed parent, parental drug use, parent did not complete high school, single-parent family, child’s ethnic minority status, 4 or more kids at home, family financial problems), with higher values indicating greater experience of risks  
 \*  $p < .05$ ; \*\*  $p < .01$ ;  
 \*\*\*  $p < .001$

Our results also support the literature on socialization effects of siblings, some of which argue that the effects of siblings’ behavior on children are independent of parental effects (Farrington and West 1993). Slomkowski and colleagues suggest that homes in which there is a great deal of conflict may foster aggressive sibling behavior, which may move beyond the dyad interactions and develop into anti-social behavior outside of the family (Slomkowski et al. 2001, 1997). The suggested influence of a conflicted home environment is important to note, as our study found that recent parental incarceration influenced family conflict, which, along with family victimization, predicted children’s delinquency better than parental incarceration. Past research on how the family affects children’s maladjustment lend support to our finding of higher levels of conflict in families exposed to recent parental incarceration. George et al. (2006) found that parents in high-conflict families were more likely than other parents to report that their children were delinquent and had conduct problems. That the experience of delinquent, conflicted families is associated with children’s own delinquent behaviors is unsurprising; however, that these family processes predict children’s maladjustment over and above the effects of parental incarceration is important to note.

Past studies examining children and families of incarcerated parents have found that aspects of family life are influenced by the incarceration. For instance, caregivers report more stress after the incarceration of their spouse (Nesmith and Ruhland 2008), and families of incarcerated parents have more financial problems and poorer health than before the incarceration (Arditti et al. 2003). The present study also supports work by Murray and Farrington

(2005) by showing that negative effects of having an incarcerated parent continue to be seen in the adjustment of children even years after the parent returns home; in addition, our findings suggest that family processes are affected years after the parental incarceration as well. While our sample did not experience the increased level of exposure to risk as Phillips et al. (2006) had found, we did find that children of incarcerated parents are more likely to be delinquent and experience poor family processes after accounting for the effects of children’s risk experience, a conclusion that no study to date has been able to make. Especially interesting is the finding that family processes account for more of the increase in children’s delinquent behaviors as reported by parents than the experience of parental incarceration at both time points, as it suggests that the differences in family processes may be the root of the behavioral problems.

**Research Implications**

Recent studies of parental incarceration have found that children’s adjustment is associated with the gender of the incarcerated parent. For example, Dallaire (2007) found that adult children of incarcerated mothers were more likely to be incarcerated themselves than adult children of incarcerated fathers. In the current study, we were unable to examine differences in children’s experience of maternal or paternal incarceration. Parents were not asked whether their spouse had ever been incarcerated. The effect of having two parents or multiple family members who have been in jail or prison was not able to be examined with this dataset, and are likely to have a negative effect on both

family relations and children's functioning. Dallaire (2007) found that 6% of incarcerated mothers of had a spouse who had also been incarcerated, which is particularly relevant to the current study, in which the majority of incarcerated parents were mothers. The effects of having an incarcerated mother or father may also differ by the child's gender; that is, boys and girls may react differently to a parent's incarceration.

The current study found differences in the adjustment of children and the dynamics of families who have experienced parental incarceration in the past and those who have experienced parental incarceration in the past 2 years. Differences may also exist in children who experienced parental incarceration at different ages and in families for whom various amounts of time has passed since the incarceration of a parent. Experiencing the incarceration of a parent during adolescence may be particularly disruptive to already tenuous family dynamics. Our results show that adolescents (our child participants at follow-up were 12–16 years old) whose parents have been recently incarcerated experience even more conflict within the family than adolescents whose parents have not been recently incarcerated. Further examination of how parental incarceration experienced at different developmental periods is necessary, as the particular maladjustment exhibited or the effect parental incarceration has may differ.

#### Intervention Implications

The study's implications for interventions are 2-fold. Programs aimed at preventing or lessening the delinquency of children affected by parental incarceration should attempt to involve other members of the family. This may be most easily accomplished by including older and younger siblings of targeted children; however, including both the remaining parent and the previously-incarcerated parent is ideal. Several programs have called for intervention programs for families of incarcerated parents which take a family approach. Engstrom (2008) argued for the inclusion of caregiver grandparents in interventions aimed at strengthening families of incarcerated mothers. As the current study found that family processes influenced children's delinquency beyond the effects of parental incarceration, a program which aims to strengthen families and promote resiliency would also be appropriate. Families and Schools Together (FAST; McDonald et al. 1997) is a program in which families attend weekly support groups, participate in structured activities, and meet regularly with their children's teachers. School- and family-based early interventions such as these help foster communication between children's families and their teachers, and give families the opportunity to practice positive family dynamics.

Programs aimed either at reducing children's or families' maladjustment in families of incarcerated parents should be ongoing. Such programs should be aimed towards families with an arrested or criminally-involved parent, either current or in the past, as we have shown that the effects of having an incarcerated parent do not cease when they are released. Though the current study examined the ongoing effects of parental incarceration on adolescents' maladjustment, the key to preventing this maladjustment in adolescence may lie earlier in childhood.

#### Limitations and Conclusions

Several limitations of the current study suggest avenues for future research. In the present study, there was little concordance between child and parent report of delinquency. This may be due to how measures were administered. Children may have been wary to report behaviors such as arson to CAR program staff administering interviews in children's homes when their parent may be present. Though both child- and parent-reports were included in our study, teachers' reports of children's behaviors at school may provide an additional valid viewpoint. Additionally, as the current study found a relationship between what could be considered parental delinquency (incarceration for crime) and children's delinquency (both of the participating child and older siblings), genetic effects may play roles we were unable to address.

Another limitation of the current study is that children's report of their delinquency was not predicted by any of our process or independent variables. Only parent-reported delinquency was predicted in this study, and while we believe that our results are valid, ideally one would see both parent- and child self-reports of children's delinquency predicted by our independent variables. In an unfortunate side effect of analyzing archival, longitudinal data with multiple reporters, some data was missing and participants were excluded from analyses. Sample sizes were reduced from a potential 857 cases; however, all analyses presented were still quite large, there was ample power to detect even small effects (see Cortina and Landis 2009).

In conclusion, the current study shows that the effects of parental incarceration continues after the parent returns, and that children's adjustment and family processes are influenced by the parent's incarceration beyond the effects of other risk factors, such as parental unemployment or drug use. However, family victimization and sibling delinquency influence children's adjustment beyond the effects of parental incarceration, suggesting that aspects of family life contribute more to children's maladjustment than the single factor of having a history of parental incarceration. The current study points to the need to broaden how we examine the effect of parental

incarceration. The effects of parental incarceration on children may be best examined from a family systems perspective, in which the impact of all family members and the family as a whole is thought to influence children's delinquency. Interventions aimed at these children should also focus on the influence of the family, instead of solely that of the incarcerated parent.

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