



# Risk and Resilience among Children with Incarcerated Parents: Examining Heterogeneity in Delinquency and School Outcomes

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## Abstract

The present study utilized latent profile analysis with 1088 children with incarcerated parents to identify heterogeneity in behavioral and social problems. Four profiles were observed. The majority (61%) were *well-adjusted* with low behavioral problems at school and less affiliation with antisocial friends. Youth classified as *overactive* (20%) displayed frequent disruptive and hyperactive behaviors, while *isolated* youth (14%) exhibited high loneliness and depression and were most likely to be bullied. Youth in the *aggressive* profile (7%) exhibited frequent aggression, school behavioral problems, and affiliation with antisocial friends. Although the *aggressive* profile represented the smallest proportion of the sample, their level of delinquent behavior and number of negative school outcomes were the most concerning. Examination of risk and protective factors by profile found *overactive* and *isolated* youth to be more likely to have two or more adults in the household compared to *well-adjusted* and *aggressive* youth. Meanwhile, *well-adjusted* youth had significantly higher school connectedness, parent support, and positive teacher relationships. *Aggressive* youth were least likely to be raised by a married caregiver. Universal behavioral assessments of children with incarcerated parents would be useful in identifying youth at risk for escalating or persistent delinquency or hyperactivity.

**Keywords** Children with incarcerated parents · Latent profile analyses · Delinquency · Externalizing behavior · Internalizing behavior

## Highlights

- Most children with incarcerated parents have positive behavioral and school outcomes.
- 20% of youth displayed hyperactivity, while 14% reported loneliness and bullying.
- Youth at highest risk for delinquency represented only 7% of the sample.

Over 8 million children—nearly 1 in 14—have at least one parent currently or previously incarcerated (Haskins and Jacobsen 2017; Murphey and Cooper 2015). These children are innocent victims of the United States' history of mass

incarceration, particularly of African American adults. Indeed, African Americans are imprisoned at dramatically higher rates than European Americans (5.8 and 1.8 times more likely for males and females, respectively) (Carson 2020) and, since most offenders have minor children, African American children are disproportionately affected by mass incarceration (Glaze and Maruschak 2010). Parental incarceration is generally associated with higher rates of internalizing and externalizing symptoms in children with incarcerated parents (Davis and Shlafer 2017; Murray et al. 2012) who may also be at higher risk for experiencing incarceration themselves (Norris et al. 2018; Turney and Lanuza 2017). Although most research has treated children with incarcerated parents as a homogenous group, there is likely to be significant heterogeneity in their contexts,

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responses, and developmental outcomes. In the current study, we explore the heterogeneity in behavioral profiles of children with incarcerated parents and the association of the profiles with background risk factors, interpersonal relationships, and delinquency outcomes.

## Behavioral Indicators Associated with Parental Incarceration

### Externalizing Problems

Murray et al.'s (2012) meta-analysis found children with incarcerated parents to be more likely to display externalizing behaviors than children without incarcerated parents. Their research included studies finding children with incarcerated parents to be at higher risk for hyperactivity, disruptive behaviors, and aggression (Kjellstrand et al. 2018; Turney 2014), and these behaviors have been associated with later delinquency (Murray et al. 2012; Roettger and Swisher 2011; Turney and Lanuza 2017). In addition to antisocial behavioral outcomes, children with incarcerated parents are more likely to display conduct problems at school. Specifically, about 50% of children with incarcerated parents experience school behavioral problems (Hanlon et al. 2005). Trice and Brewster (2004) further found children of incarcerated mothers to be four times more likely to be suspended than children without incarcerated mothers. Furthermore, children with an incarcerated parent are at increased risk for being placed in special education (Haskins 2014), being held back a grade (Turney and Haskins 2014), experiencing exclusionary discipline (Jacobsen 2015), and dropping-out (Nichols and Loper 2012). A more recent study found no effect of parental incarceration on GPA, school absences, or repeating a grade (Norris et al. 2018).

### Internalizing Problems

Parental incarceration has also been linked with internalizing problems (Murray and Farrington 2005). Particularly, children with incarcerated parents experience a range of immediate and long-term problems as a result of separation from an attachment figure, including loneliness, sadness, and sense of abandonment (Naudeau 2010; Thompson and Harm 1995; Travis et al. 2001). Furthermore, evidence suggests that paternal incarceration increases depression and withdrawal in youth (Haskins 2015; Haskins and Jacobsen 2017). However, the link between parental incarceration and internalizing symptoms may not be direct, as some studies have found parental incarceration is not associated with internalizing problems once controlling for preexisting risk factors (Murray et al. 2012; Wildeman and

Turney 2014). A recent finding suggests the association between parental incarceration and internalizing behavior is mediated by adverse childhood experiences and poverty (Boch et al. 2019).

### Social Problems

Children with incarcerated parents are also more likely to associate with deviant and delinquent peers (Dallaire and Zeman 2013), a salient risk factor for aggressive behavior, substance use, and later delinquency (Brendgen et al. 2000). Furthermore, children with incarcerated parents may be at increased risk for experiencing peer exclusion due to shame and embarrassment related to parental incarceration (Boswell and Wedge 2002; Nesmith and Ruhland 2008). Together, these behavioral indicators are likely to impact the developmental outcomes of children with incarcerated parents by significantly increasing their risk status. However, there is a dearth of knowledge about the prevalence of these behavioral indicators within the group of children with incarcerated parents.

### Risk and Protective Factors

In an attempt to explain the causes of behavioral problems and delinquency of adolescents, juvenile justice researchers have explored what individual, family, and contextual characteristics are associated with delinquent behaviors in youth. Adopted from public health, risk factors have been defined as “characteristics...that...make it more likely that this individual, rather than someone selected from the general population, will develop a disorder” (Mrazek and Haggerty 1994, p. 127). Similarly, other research has investigated protective factors for delinquency, which include familial and personal characteristics that may reduce risk for delinquency despite the presence of risk factors. Risk and protective factors are not deterministic in nature; they simply reflect characteristics found to be associated with delinquency. Along with exploring behavioral patterns for children with incarcerated parents, the present study investigates how these groups defined by similar behavioral characteristics are related to a variety of different factors known to increase risk for and protection against delinquency. Specifically, we explore several established risk and protective factors for delinquency and their relationship to parental incarceration.

### Caregiver Incarceration

The effects of caregiver incarceration may vary by parental role. Some studies suggest that maternal incarceration has a more negative impact on children than paternal

incarceration (Dallaire 2007; Dallaire and Wilson 2010). This differential impact may be explained by the *maternal salience hypothesis*, in which mothers are more likely to be primary caregivers and attachment figures, making their separation more traumatic and disruptive than separation from paternal caregivers (Dallaire and Wilson 2010; Kopak and Smith-Ruiz 2016). While few studies have examined the impact of multiple caregiver incarceration on children, the limited available research indicates little difference between youth with one versus multiple parents incarcerated (Bell et al. 2018; Kopak and Smith-Ruiz 2016).

### Contextual Stressors

Children with incarcerated parents experience a number of contextual risk factors prior to, during, and following their parents' incarceration, including housing instability, low parental education and income, single parenting, and economic stress (Geller and Franklin 2014; Mumola 2000; Wildeman 2014). In particular, 2 years prior to incarceration, 56% of offenders reported earnings of less than \$500 while 30% reported earnings between \$500 and \$15,000 (Looney and Turner 2018). Among those employed, average earnings were \$12,780. Parents in prison reported further challenges prior to incarceration, in which 9% were recently homeless, 20% were physically or sexually abused, 41% had infectious medical problems, 57% had mental health problems, and 67% had substance abuse problems prior to incarceration (Glaze and Marushak 2010). Given the link between family income and stress with a variety of childhood outcomes including academic achievement, health, and social development (Cooper and Stewart 2013), these socioeconomic stressors may account for observed differences in behavior between children who do and do not experience parental incarceration. The influence of socioeconomic status on behavioral outcomes permeates into many institutions. This includes significant biases against low-income and minority youth in school discipline and policing practices, among other areas (Barrett et al. 2017; Goncalvez and Mello 2020).

### Parental Support

Although perceived parental support has not been extensively examined among children with incarcerated parents, youth developmental research documents parental support as an important protective factor for youth more generally (Caldwell et al. 2004). Moreover, parental closeness can buffer the impact of incarceration on children with incarcerated parents' internalizing symptoms (Davis and Shlafer 2017). Contrarily, poor relationships with custodial parents may be associated with increased internalizing and externalizing behaviors in children with incarcerated parents (Mackintosh et al. 2006; Poehlmann et al. 2008). The custodial parent also plays a

significant gatekeeping role in facilitating children with incarcerated parents' experiences around the parental incarceration, such as children with incarcerated parents' contact with the incarcerated parent and access to external support (Poehlmann et al. 2008; Ruiz and Kopak 2014). The custodial parent's unique functions have subsequent impact on youth outcomes. For instance, research has shown that better co-parenting skills and communication between the incarcerated and custodial parent during the prison sentence is associated with fewer externalizing behaviors and academic difficulties in children with incarcerated parents (Baker et al. 2010; Lösel et al. 2012).

### Teacher Support

Researchers and policymakers have also noted that support from teachers can be crucial (Robertson 2012), as supportive relationships from communities and school environments has been found to have a positive impact on at-risk youth and vulnerable families (Brewster and Bowen 2004; Visher et al. 2004). However, empirical findings about the effects of teacher support for children with incarcerated parents is sparse, although Lösel et al. (2012) found children with incarcerated parents with positive teacher relationships are more likely to have a better relationship with their incarcerated parent and fewer learning difficulties, preliminarily demonstrating the buffering effects of having a supportive adult in school.

### School Connectedness

Attachment to school and teachers has been positively associated with school adjustment, motivation, engagement, and achievement within the general population (Libbey 2004; Ostermann 2000). It can be a particularly salient protective factor in the absence of strong parent and family support (Nichols et al. 2016). This may be due, in part, to the contribution of a healthy school environment on youth's basic psychological need for belonging (Ostermann 2000). Hence, school connectedness may act as a protective factor against feelings of loneliness and isolation, poor educational outcomes, and delinquency in children with incarcerated parents. Studies have shown that children with incarcerated parents experience lower levels of school connectedness than their peers (Shlafer et al. 2017; Hanlon et al. 2005), which puts them at increased risk for delinquency (Maddox and Prinz 2003; Catalano et al. 2004).

### The Present Study

There is a mixed body of literature noting intergenerational patterns in delinquency, in which some studies have found a

positive association between parental incarceration and child delinquency (Aaron and Dallaire 2010; Murray and Farrington 2005; Murray et al. 2012; Roettger and Swisher 2011), whereas others have not (Norris et al. 2018). Thus, despite elevated rates reported in some studies, not all children with incarcerated parents experience any and all of these negative outcomes. By focusing on comparisons between children with incarcerated parents and children without incarcerated parents, it is easy to overlook heterogeneity within the group of children with incarcerated parents. For example, many children with incarcerated parents do not demonstrate elevated symptoms or engage in delinquent behaviors (Kjellstrand et al. 2018; Kjellstrand et al. 2019). Furthermore, developmental disruptions associated with parental incarceration may not affect children with incarcerated parents uniformly. Thus, it is possible that there are distinct developmental profiles of children with incarcerated parents associated with risk and protective factors. We hypothesize that analyses will reveal subgroups reflecting behavioral profiles found in the general population including a large normative or low risk sample, a profile demonstrating an inattentive and hyperactive spectrum of behaviors, an antisocial profile, and a profile with primarily internalizing symptoms. Furthermore, little is known about how risk and protective factors may affect differential behavior patterns and outcomes among children with incarcerated parents. A more nuanced understanding of within-group differences can inform policies and tailor interventions aiming to ameliorate the impact of parental incarceration on children.

The goal of the current study is to address these gaps in knowledge using a large dataset of children with incarcerated parents. We will utilize latent profile analysis (LPA) to identify underlying behavioral profiles of children with incarcerated parents. The dynamic nature of LPA allows for identifying profiles across behavioral indicators. Using these profiles, we will examine demographic, risk, and protective factors that predict profile membership and investigate the extent to which profile membership predicts children with incarcerated parents' engagement in delinquent behaviors.

## Methods

### Data

The sample was obtained from a study evaluating the effectiveness of a youth mentoring intervention conducted by researchers from a northeastern university in the United States and a behavioral sciences research company. The mentoring intervention included children with incarcerated parents who were randomly assigned to one of two

conditions: enhanced mentoring services or business-as-usual mentoring. All children in the study completed baseline surveys regarding their internalizing and externalizing behaviors, school connectedness, and adult and peer relationships. Current caregiver for the child further completed baseline surveys on the youth's behaviors and relationships. Most current caregivers were the child's biological mother (70%) while 13% were the child's biological grandmother. The remaining caregivers, in which each group represented less than 5% of current caregivers, included child's biological father, adoptive/foster parent, stepparent, sibling, and other relative.

Both youth and current caregiver self-report questionnaires were administered and completed using a web-based software application designed for this study. Informed consent and parent permission were obtained from parents, and youth assented to participation, prior to completing any survey questions. There was a total of 1386 youth-caregiver dyads in which both completed baseline surveys. Participants with valid information on behavioral indicators and risk/protective factors were included in the analytic sample, yielding a study sample size of 1088 children. Across the sample, there was a nearly even mix of males (51%) and females (49%) with a mean age of 11.25 ( $SD = 2.13$ ). Half of the sample (50%) was Black, while 32% was White, and 18% was another race. Nearly 16% of the sample was Hispanic.

## Variables

### Behavioral indicators

Profiles of youth were identified based on seven behavioral indicators: hyperactive behavior, disruptive behavior, aggressive behavior, school behavioral problems, affiliation with antisocial friends, loneliness/depression, and bullying victimization. Indicators were based on parent and youth reports from baseline interviews. With the exception of school behavioral problems which was based on a single item indicator, the remaining behavioral indicators were based on multi-item measures in which responses to individual items were combined into a scale. Scaled variables were constructed using principal component factor analysis, a commonly used statistical method for reducing data which focuses on correlation between individual items. In standard principal component factor analysis, the result is a score for each survey observation in which scores across the sample have a mean of 0 and a standard deviation of 1 (see Rabe-Hesketh and Everitt 2007 for an introduction).

**Hyperactive behavior** Parents responded as to how often their children exhibit four behaviors, including fidgeting, hums and makes odd noises, excitable/impulsive, and fails

to finish things that s/he starts. Questions were used from the Short Iowa Conners Scale (Pelham et al. 1989). The hyperactivity scale had good reliability ( $\alpha = 0.85$ ).

**Disruptive behavior** Using the same response options as for hyperactivity, parents were further asked how often child exhibits five behaviors: quarrelsome, acts “smart”/talks back, temper outburst (explosive and unpredictable behavior), defiant, and uncooperative. These questions further came from the Short Iowa Conners Scale (Pelham et al. 1989) The disruptive scale had excellent reliability ( $\alpha = 0.91$ ).

**Aggressive behavior** Youth reported how frequently they engaged in six different behaviors in the past 7 days on a shortened version of the Aggression Scale (Orpinas and Frankowski 2001), including “I teased a student to make him or her angry”, “I said things about other kids to make other students laugh”, “I pushed or shoved other students”, “I slapped or kicked someone”, “I called other students bad names”, and “I threatened to hurt or to hit someone”. The brief version of the aggression scale had good internal consistency reliability ( $\alpha = 0.85$ ).

**School behavioral problems** Youth reported about having disciplinary problems in school on a single item of how frequently they were “sent to the principal’s or counselor’s office for disciplinary reasons in the past 30 days” with response options ranging from 0 to 10 or more. For ease of comparison across the indicators, the variable was standardized following latent profile analysis.

**Antisocial friends** Youth reported how many of their closest friends had engaged in the following behaviors over the past year on a shortened version of the Delinquent Peers Scale from the Rochester Youth Survey (Thornberry et al. 1994): “Got in fights with other kids”, “Smoked cigarettes, drunk alcohol, used marijuana, or used other drugs”, “Got in trouble at school (for example, got sent to the principal’s office, been suspended)”, and “Broke the law (for example, stole something or sold illegal drugs?)”. A scale of antisocial friends had acceptable internal consistency reliability ( $\alpha = 0.75$ ).

**Loneliness and depression** Youth reported on a single item on depression about how often in the past 2 weeks they “felt miserable or unhappy” from the Short Mood and Feelings Questionnaire (SMFQ; Angold et al. 1995) that was rated on a 3-point scale from 1 (not true) to 3 (true). They also rated three items on a five-point loneliness scale ranging from 1 (not at all true) to 5 (very true) on how true the statements were for them in the past 2 weeks. The items were “I feel alone”, “I felt left out of things”, and “I’m

lonely” (Asher et al. 1984). A composite scale of loneliness and depression had good internal consistency reliability ( $\alpha = 0.84$ ).

**Victim of bullying** Youth reported on two items from the covert peer victimization scale on how often other kids, “Leave you out on purpose”, “Talk behind your back”, and two items from the overt peer victimization scale, “Yell at you or call you names”, and “Hit, push or shove you”, from the larger Social Experiences Questionnaire (Crick and Grotpeter 1996). Response options included “Never”, “Once or twice”, “Sometimes”, “Very often”, and “Extremely often”. The two scales were combined to create a single victim of bullying scale, which had good internal consistency reliability ( $\alpha = 0.84$ ).

### Risk factors

Caregivers responded to several other questions which have been previously established as risk factors for juvenile delinquency (Shader 2001), including caregiver’s highest level of education, number of children in household, and number of adults in household. As proxies for family disadvantage, family’s access to internet and number of times child switched schools were further included. Given the population consisted of children with incarcerated parents, we included characteristics of the parent’s incarceration as further risk factors. These consisted of which parent was incarcerated (i.e., both, father only, or mother only); child’s age at the start of their parent’s incarceration; and the location of the parent’s incarceration (i.e., prison, jail, or immigrant detention center).

### Protective factors

**School connectedness** Youth responded to a brief version of the School Connectedness subscale of the Hemingway Measure of Adolescent Connectedness (Karcher and Lindwall 2001). The four items included: “I enjoy being at school”, “I feel good about myself when I am at school”, “I look forward to going to school every day”, and “In general, I like school a lot”. Response options ranged from “Not at all true” to “Very true”. The scale of school connectedness had good internal consistency reliability ( $\alpha = 0.84$ ).

**Caregiver support** Youth were further asked, “Who is the main parent or adult who currently takes care of you?” They were then asked a series of 11 questions regarding their relationship with “that person, the adult who takes care of you” on an adapted version of the Inventory of Parent and Peer Attachment (IPPA; Armsden and Greenberg 1987). Youth indicated whether the statements were true or false.

Example statements included, “This person respects my feelings”, “I wish this person were someone different” (reverse-coded), and “When we discuss things, this person cares about my point of view”. The scale had excellent internal consistency reliability ( $\alpha = 0.93$ ).

**Positive teacher relationships** A scale of positive teacher relationships was constructed using a modified version of the Teacher Support scale (Midgley et al. 1989) based on youth response to whether the following statements were true, “I get along well with my teachers this year”, “My teachers this year care about me even when I make mistakes”, “My teachers this year look out for me and help me”, “My teachers care for me”, and “My teachers don’t know me very well this year” (reverse coded). The positive teacher relationships scale had acceptable internal consistency reliability ( $\alpha = 0.78$ ).

### Delinquency outcomes

Youth reported how many times in their life they have engaged in 14 delinquent behaviors on a shortened version of the Self-Report Delinquency Scale (Elliott et al. 1985). Binary variables were constructed based on whether the individual had engaged in the behavior 0 or “1 or more” times. Delinquent behaviors included shoplifting (“avoided paying for things, like a movie, bus ride, or riding the subway or shoplifted, i.e., taken something from a store without paying”), gang involvement (“been involved in gang or posse fights”), weapon carrying (“carried a hidden weapon” or “carried a hand gun” or “used a weapon or force to make someone give you money or things”). An additional delinquent behavior included drug use, based on whether youth had done any of the following in their lifetime: “Drink beer, wine, wine coolers, or hard liquor (like whiskey, vodka) (more than a sip or taste)”, “Been drunk”, “Smoked cigarettes, even one or two puffs or used smokeless tobacco”, “Used marijuana (pot, hash, reefer)”, or “Used drugs without a medical prescription (like Ritalin, Adderall, Meth, Heroin)”.

### Educational outcomes

Youth reported on how many times in their life they were expelled (“been expelled from school”) or skipped school (“skipped classes without an excuse”). Binary variables were constructed based on whether the individual had engaged in the behavior 0 or “1 or more” times. Youth also reported on poor grades in response to “What were your average grades in school on your last report card?” Youth reporting that they received “Mostly Ds” or “Mostly Fs” were coded as 1 for poor grades, while youth reporting they received “Mostly As”, “Mostly Bs”, or “Mostly Cs” were coded as 0 for poor grades.

### Demographic characteristics

Demographic characteristics were reported by the child’s current caregiver and consisted of child characteristics including their age, gender (i.e., male or female), race (i.e., White, Black, or Other), and Hispanic ethnicity (i.e., Hispanic or non-Hispanic) and current caregiver’s characteristics including their age, marital status, and employment status.

### Statistical Analyses

#### Latent profile analysis

To identify the latent behavioral profiles of youth, we first conducted latent profile analysis (LPA). LPA is a statistical procedure in which individual cases are assigned to underlying subgroups based on selected behavioral characteristics (McLachlan and Peel 2004). For the present study, the latent profiles were constructed based on the aforementioned behavioral indicators: hyperactive behavior, disruptive behavior, aggressive behavior, school behavioral problems, antisocial friendships, loneliness/depression, and victim of bullying. We employed a series of latent profile models ranging from 1 to 5 profiles using *R*’s *tidyLPA* package (Rosenberg et al. 2019). To select the best fitting model, the model’s Bayesian Information Criterion (BIC), Akaike’s Information Criterion (AIC), and entropy were considered. Lower AIC and BIC values and higher entropy values indicate better model fit (Celeux and Soromenho 1996). After the latent profile solution was identified, youth were assigned to profiles based on the probability of membership as indicated by the model, with youth assigned to the profile with highest membership probability.

#### Exploring heterogeneity within profiles

Once youth profiles were finalized, we conducted a series of statistical analyses to examine heterogeneity within the profiles and identify differences between the profiles by youth demographic characteristics, risk factors, and protective factors. For continuous variables, this consisted of calculating means and standard deviations for each characteristic by profile along with employing analyses of variance to identify whether differences were statistically significant. For categorical variables, we tabulated characteristics’ sample sizes and proportions across profiles while employing chi-square statistical analyses.

To examine profile differences in youth’s delinquency and educational outcomes, we estimated adjusted odds ratios using logistic regression analyses. Odds ratios were adjusted for the following previously discussed demographic characteristics and risk factors: child’s age, race,

and ethnicity; parent's age, marital status, employment status, and educational attainment; number of kids and adults in household, number of times family has moved, and family's stable access to the internet.

## Results

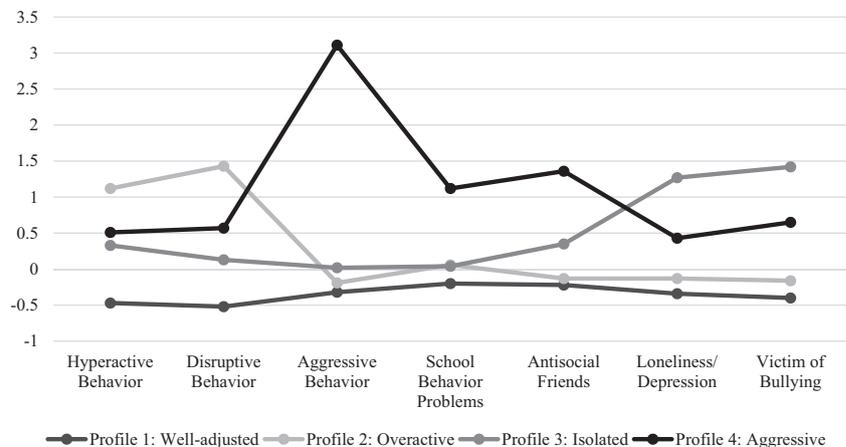
### Identification of Latent Profiles

The four-profile solution emerged as the best fitting model. Specifically, the BIC and AIC indices began to flatten out from the three-profile to four-profile solution. There was minimal reduction in scores from the four-profile to five-profile solution, and entropy slightly increased. With the four-profile solution, most of the sample fell into either Profile 1 (61%) or Profile 2 (19%). For the rest of the sample, 14% fell within Profile 3 while 7% of the sample fell in Profile 4, representing distinct subgroups when considering the youth's behavioral indicators.

### Behavioral Indicators of the Latent Profiles

Figure 1 and Table 1 display behavioral indicators by profile. The four-profile solution consisted of a *well-adjusted* profile (61%,  $n = 660$ ), in which youth had low levels of negative behaviors across all indicators; an *overactive* profile (19%,  $n = 207$ ), where youth exhibited high levels of disruptive ( $M = 1.43$ ,  $SD = 0.74$ ) and hyperactive ( $M = 1.12$ ,  $SD = 0.72$ ) behaviors; an *isolated* profile (14%,  $n = 149$ ), which included youth who were most likely to be victims of bullying ( $M = 1.42$ ,  $SD = 0.91$ ) and had highest levels of loneliness and depression ( $M = 1.27$ ,  $SD = 1.01$ ); and an *aggressive* profile (7%,  $n = 72$ ) comprised of youth who exhibited more frequent aggressive behavior ( $M = 3.11$ ,  $SD = 1.09$ ), experienced more disciplinary problems in school ( $M = 1.12$ ,  $SD = 1.39$ ), and reported having more antisocial friends ( $M = 1.36$ ,  $SD = 1.53$ ).

**Fig. 1** Indicators of latent profiles



### Sociodemographic Profiles

Table 1 further displays sociodemographic characteristics of profiles. While there were no significant differences with regards to child's age and Hispanic ethnicity, the composition of the profiles varied by child gender and race. Specifically, the *aggressive* and *overactive* profiles had a larger percentage of males than the *well-adjusted* profile. Significant profile differences also emerged by race, in which the *aggressive* and *well-adjusted* profiles were significantly more likely to be Black than youth in the *overactive* and *isolated* profiles. Meanwhile, the *overactive* and *isolated* profiles were comprised of the largest proportion of White youth at 44 and 38%, respectively. With regards to caregiver characteristics, there were no differences across profiles based upon caregiver age or employment status; however, profile differences did emerge with respect to marital status, in which the *aggressive* profile was comprised of the smallest proportion of married caregivers (18%), compared to 21, 29, and 30% of married caregivers in the *well-adjusted*, *overactive*, and *isolated* profiles, respectively.

### Risk and Protective Factors

Profile differences in the risk and protective factors are displayed in Table 2. With regards to family risk factors, the profiles only differed by the number of adults in their households. In particular, *overactive* and *isolated* youth were significantly more likely to have two or more adults in the household with 51 and 56%, respectively, compared to *well-adjusted* youth. Both the *well-adjusted* and *aggressive* profiles had over half of youth with only one adult in the household. There were no significant profile differences by parent incarceration history. On the other hand, significant differences in protective factors emerged between the profiles. Specifically, compared to the other three profiles, *well-adjusted* youth had significantly higher levels of school

**Table 1** Demographics and indicators of latent profiles

	Profile 1: well-adjusted mean (SD)/n (%)	Profile 2: overactive mean mean (SD)/n (%)	Profile 3: isolated mean (SD)/n (%)	Profile 4: aggressive mean (SD)/n (%)	<i>p</i> value
<b>Indicators</b>					
Hyperactive behavior	−0.47 (0.73)	1.12 (0.72)	0.33 (0.83)	0.51 (0.93)	<0.001
Disruptive behavior	−0.52 (0.55)	1.43 (0.74)	0.13 (0.77)	0.57 (0.91)	<0.001
Aggressive behavior	−0.32 (0.34)	−0.19 (0.46)	0.02 (0.60)	3.11 (1.09)	<0.001
School behavior problems	−0.20 (0.86)	0.06 (0.87)	0.04 (1.03)	1.12 (1.39)	<0.001
Antisocial friends	−0.22 (−0.74)	−0.13 (0.82)	0.35 (1.16)	1.36 (1.53)	<0.001
Loneliness and depression	−0.34 (0.71)	−0.13 (0.84)	1.27 (1.01)	0.43 (1.11)	<0.001
Victim of bullying	−0.40 (0.67)	−0.16 (0.76)	1.42 (0.91)	0.65 (1.04)	<0.001
<b>Demographics</b>					
<b>Child characteristics</b>					
Age	11.29 (2.13)	11.36 (2.10)	11.00 (2.09)	11.35 (1.90)	0.400
Gender—Male	287 (43.62%)	135 (65.22%)	75 (50.68%)	51 (70.83%)	<0.001
Hispanic ethnicity	109 (16.52%)	35 (16.91%)	16 (10.74%)	13 (18.06%)	0.313
<b>Race</b>					
White	178 (26.97%)	91 (43.96%)	57 (38.26%)	19 (26.39%)	<0.001
Black	363 (55.00%)	75 (36.23%)	60 (40.27%)	41 (56.94%)	
Other	119 (18.03%)	41 (19.81%)	32 (21.48%)	12 (16.67%)	
<b>Caregiver characteristics</b>					
Age	39.76 (11.00)	41.34 (11.48)	40.55 (11.98)	40.03 (11.57)	0.349
Married	139 (21.06%)	59 (28.50%)	44 (29.53%)	13 (18.06%)	0.026
<b>Employment status</b>					
Full-time employment	322 (48.79%)	104 (50.24%)	69 (46.31%)	32 (44.44%)	0.701
Part-time employment	227 (34.39%)	77 (37.20%)	56 (37.58%)	30 (41.67%)	
Unemployed	111 (16.82%)	26 (12.56%)	30 (41.67%)	10 (13.89%)	
	<i>n</i> = 660 (61%)	<i>n</i> = 207 (19%)	<i>n</i> = 149 (14%)	<i>n</i> = 72 (7%)	

connectedness ( $M = 0.20$ ,  $SD = 0.90$ ), more parental support ( $M = 0.15$ ,  $SD = 0.86$ ), and more positive relationships with teachers ( $M = 0.21$ ,  $SD = 0.83$ ).

### Using Latent Profile Membership to Predict Delinquency Outcomes

As displayed in Table 3, logistic regression analyses used latent profile membership to predict youth's delinquent outcomes. Compared to *well-adjusted* youth, *overactive* youth had greater odds of shoplifting (OR = 2.13, 95% CI = 1.37–3.29), weapon carrying (OR = 2.42, 95% CI = 1.40–4.20), school expulsion (OR = 3.06, 95% CI = 1.66–5.63), skipping school (OR = 2.03, 95% CI = 1.34–3.06), and having poor grades (OR = 4.12, 95% CI = 1.88–8.98). Delinquency was also heightened amongst youth in the *isolated* profile. In comparison to the *well-adjusted* youth, *isolated* youth had increased odds of shoplifting (OR = 2.33, 95% CI = 1.42–3.84), drug use (OR = 2.80, 95% CI = 1.56–5.04), gang membership (OR = 3.01,

95% CI = 1.78–5.11), weapon carrying (OR = 3.25, 95% CI = 1.83–5.78), school suspension (OR = 2.09, 95% CI = 1.38–3.18), skipping school (OR = 1.86, 95% CI = 1.16–3.01), and having poor grades (OR = 5.24, 95% CI = 2.37–11.59). *Aggressive* youth had higher delinquency across all outcomes compared to the *well-adjusted* youth. Specifically, they had increased odds for shoplifting (OR = 6.15, 95% CI = 3.50–10.80), drug use (OR = 7.27, 95% CI = 3.81–13.88), gang membership (OR = 6.83, 95% CI = 3.82–12.21), weapon carrying (OR = 10.39, 95% CI = 5.53–19.54), school expulsion (OR = 3.01, 95% CI = 1.26–7.17), skipping school (OR = 3.75, 95% CI = 2.14–6.58), and having poor grades (OR = 7.53, 95% CI = 2.97–19.05).

### Discussion

This study examined the latent profiles of behavioral problems in a large sample of children with incarcerated

**Table 2** Risk and protective factors of latent profiles

Characteristics	Profile 1: well-adjusted <i>n</i> (%) / mean (SD)	Profile 2: overactive <i>n</i> (%) / mean (SD)	Profile 3: isolated <i>n</i> (%) / mean (SD)	Profile 4: aggressive <i>n</i> (%) / mean (SD)	<i>p</i> value
<b>Risk factors</b>					
Family risk factors					
Children in household					0.510
1	105 (15.91%)	33 (15.94%)	26 (17.45%)	26 (17.45%)	
2	204 (30.91%)	61 (29.47%)	46 (30.87%)	46 (30.87%)	
3	166 (25.15%)	46 (22.22%)	43 (28.86%)	43 (28.86%)	
4	94 (14.24%)	37 (17.87%)	18 (12.08%)	18 (12.08%)	
5 or more	91 (13.79%)	30 (14.49%)	16 (10.74%)	16 (10.74%)	
Lack of stable internet access	550 (83.33%)	172 (83.09%)	135 (90.60%)	64 (88.89%)	0.097
Adults in household					
1	395 (59.85%)	101 (48.79%)	66 (44.30%)	45 (62.50%)	<0.001
2 or more	265 (40.15%)	106 (51.21%)	83 (55.70%)	27 (37.50%)	
Times child switched schools					
0	240 (36.36%)	82 (39.61%)	55 (36.91%)	27 (37.50%)	0.096
1	212 (32.12%)	64 (30.92%)	36 (24.16%)	18 (25.00%)	
2	132 (20.00%)	27 (13.04%)	30 (20.13%)	16 (22.22%)	
3 or more	76 (11.52%)	34 (16.43%)	28 (18.79%)	11 (15.28%)	
Caregiver education					
Less than high school	91 (13.79%)	30 (14.49%)	15 (10.07%)	9 (12.50%)	0.144
High school	81 (12.27%)	28 (13.53%)	17 (11.41%)	5 (6.94%)	
Some college	197 (29.85%)	41 (19.81%)	49 (32.89%)	23 (31.94%)	
Associate's	65 (9.85%)	28 (13.53%)	17 (11.41%)	13 (18.06%)	
Bachelor's	226 (34.24%)	80 (38.65%)	51 (34.23%)	22 (30.56%)	
Parent incarceration history					
Parent incarcerated					0.623
Both parents	108 (16.36%)	42 (20.29%)	33 (22.15%)	13 (18.06%)	
Father only	488 (73.94%)	143 (69.08%)	100 (67.11%)	51 (70.83%)	
Mother only	64 (9.70%)	22 (10.63%)	16 (10.74%)	8 (11.11%)	
Child age at start of incarceration	5.47 (3.96)	5.28 (3.64)	5.56 (3.71)	4.75 (5.35)	0.484
Location of incarceration					
Prison	411 (64.21%)	112 (56.78%)	82 (58.57%)	43 (59.15%)	0.571
Jail	223 (35.01%)	83 (42.21%)	56 (40.71%)	28 (39.44%)	
Immigrant detention center	5 (0.78%)	2 (1.01%)	1 (0.71%)	1 (1.41%)	
<b>Protective factors</b>					
School connectedness	0.20 (0.90)	-0.17 (1.08)	-0.35 (1.07)	-0.41 (1.09)	<0.001
Caregiver support	0.15 (0.86)	-0.14 (1.07)	-0.24 (1.11)	-0.07 (1.03)	<0.001
Teacher relationships	0.21 (0.83)	-0.17 (1.12)	-0.41 (1.27)	-0.33 (1.04)	<0.001
	<i>n</i> = 660 (61%)	<i>n</i> = 207 (19%)	<i>n</i> = 149 (14%)	<i>n</i> = 72 (7%)	

parents. Overall, results indicated that the sample was not homogenous with respect to both externalizing and internalizing behavior problems, and that there were meaningful

profiles observed in the sample, based upon different levels and salience of presenting problems. The emergence of these profiles indicated that this sample can best be

**Table 3** Results of logistic regression analyses predicting delinquent and school behaviors of latent profiles

	Shoplifting AOR (95% CI)	Drug use AOR (95% CI)	Gangs AOR (95% CI)	Weapon carrying AOR (95% CI)	Expulsion AOR (95% CI)	Skipping school AOR (95% CI)	Poor grades AOR (95% CI)
Well-adjusted	Reference	Reference	Reference	Reference	Reference	Reference	Reference
Overactive	2.13 (1.37–3.29)**	1.45 (0.84–2.51)	1.56 (0.91–2.68)**	2.42 (1.40–4.20)**	3.06 (1.66–5.63)***	2.03 (1.34–3.06)**	4.12 (1.88–8.98)***
Isolated	2.33 (1.42–3.84)**	2.80 (1.56–5.04)**	3.01 (1.78–5.11)***	3.25 (1.83–5.78)***	1.47 (0.63–3.46)	1.86 (1.16–3.01)*	5.24 (2.37–11.59)***
Aggressive	6.15 (3.50–10.80)***	7.27 (3.81–13.88)***	6.83 (3.82–12.21)***	10.39 (5.53–19.54)***	3.01 (1.26–7.17)*	3.75 (2.14–6.58)***	7.53 (2.97–19.05)***

Odds ratios adjusted for child's age, race, and ethnicity; parent's age, marital status, employment status, and educational attainment; number of kids and adults in household, household mobility, and internet access

AOR adjusted odds ratio

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

understood through identifying dominant behavioral subgroups. Specifically, the *overactive* profile included children with incarcerated parents with high frequencies of disruptive and hyperactive behaviors, the *isolated* profile included youth who were most likely to be victims of bullying and had relatively higher levels of loneliness and depression, and the *aggressive* profile was comprised of youth who exhibited more frequent aggressive behaviors, behavior problems in school, and antisocial friends.

Of importance, and consistent with the findings from Norris et al. (2020), most participants (61%) were in the *well-adjusted* profile, indicating they have low levels of presenting problems across the domains examined (externalizing, internalizing, and social problems). This contrasts with the common portrayal of at-risk status among children with incarcerated parents (Murray et al., 2012; Turney and Lanuza 2017) and suggests that researchers should adopt a strengths-based approach and consider resiliency when understanding children with incarcerated parents' developmental trajectories. It also highlights the importance of considering sociodemographic and environmental factors that may also be contributing to the different manifestations. While past literature has identified children with incarcerated parents as being at-risk for externalizing behavior, the *aggressive* profile, who exhibited the most delinquent and aggressive behaviors, only accounted for 7% of the sample. This finding is consistent with previous research suggesting that a minority of individuals account for the largest proportion of crimes, which includes work by Tracy et al. (2013) finding that 7% of youth committed 60% of murders and 75% of rapes. Similarly, Vaughn et al. (2014) research with a nationally-representative sample of American adolescents found 5% of the sample exhibited the most severe externalizing and antisocial behavior. Another interpretation of the findings is that because a small percentage of children are exhibiting frequent aggressive and delinquent behaviors, their mean scores on these variables are skewing the mean values for the entire group of children with incarcerated parents. Thus, when mean scores of children with incarcerated parents are compared to mean scores of children who do not have a parent in prison, the group of children with incarcerated parents looks elevated on antisocial behavior.

Our results further indicated that the *well-adjusted* profile had a larger percentage of Black youth compared to the percentage of Black youth in the *overactive* and *isolated* profiles. This difference in group composition is noteworthy as it suggests that certain groups of Black children with incarcerated parents are particularly resilient in the face of parental incarceration. Meanwhile, the relatively large proportion of White children with incarcerated parents in the *overactive* and *isolated* profiles was more surprising. Since incarceration disproportionately affects the Black community (Alexander 2010), it may be that having a parent incarcerated

is associated with less stigma and isolation among Black youth. Parental incarceration may be more isolating for White youth since it affects disproportionately fewer White youth, which would explain heightened membership of White youth in the *isolated* profile.

A closer examination of the representation of risk and protective factors within profiles suggests further differences. In particular, *well-adjusted* youth are receiving the highest level of support from parents and teachers and are the most engaged in school, which is consistent with previous research finding these variables to protect against negative behavioral outcomes (Brewster and Bowen 2004; Caldwell et al. 2004; Visher et al. 2004). Since the incarceration of a family member is also likely to be accompanied by a cluster of other stressors, the caregiver and the family's ability to provide support to children with incarcerated parents may be impeded. As such, these results highlight the importance of having a multi-systemic intervention in supporting children with incarcerated parents that involves both family and school. Interestingly, the profiles did not differ based on parent's incarceration history (i.e., which parent was incarcerated, child's age at start of parent's incarceration, or location of parent's incarceration). This diverges from previous research finding maternal incarceration to be associated with worse outcomes (Dallaire 2007; Dallaire and Wilson 2010), yet it is consistent with research finding no differences in outcomes based on whether children have one or multiple incarcerated parents (Bell et al. 2018; Kopak and Smith-Ruiz 2016).

Furthermore, our results showed that youth in the *overactive*, *isolated*, and *aggressive* profiles had greater odds for experiencing many of the delinquency and educational outcomes compared to *well-adjusted* youth. Notably, youth in the *aggressive* profile had substantially higher odds of engaging in every measure of delinquency than *well-adjusted* youth. Youth in the *aggressive* profile also exhibited more aggressive behaviors, greater likelihood of being male compared to *well-adjusted* youth, and had more antisocial friends. However, few sociodemographic differences emerged between the profiles, suggesting that there is a myriad of factors not captured in the present study that may increase the risk of some children with incarcerated parents for exhibiting delinquent behaviors. Further research is needed to clarify the precursors to delinquent behavior for youth with an incarcerated parent displaying high levels of externalizing behavior problems.

## Implications

Given heterogeneity in presenting behaviors, it is critical that children with incarcerated parents are assessed individually for needs rather than treated as a homogenous group at-risk for behavioral problems. This approach will ensure that youth are connected with evidence-based

interventions appropriate for their behavioral profile. For instance, youth presenting with aggressive behavior and many antisocial friends should be provided with preventive treatment to reduce their risk for engaging in delinquent behaviors in the future. In particular, multi-systemic therapy has been found to be effective at reducing delinquent behaviors, substance use, and antisocial friendships for youth at-risk for externalizing behavior by providing family-centered, wraparound services (Van der Stouwe et al. 2014). Meanwhile, youth in the *isolated* profile may benefit from social skills groups and cognitive-behavioral therapy to assist with their loneliness and depression. Moreover, given that most children with incarcerated parents had a *well-adjusted* profile, future research should examine what interventions may sustain and/or improve positive outcomes for these youths. Finally, considering the central importance of parental support, opportunities for incarcerated parents to learn parenting skills may enhance outcomes in their children. Specifically, Armstrong and colleagues' (2018) meta-analysis indicates that parenting interventions conducted in an incarceration setting can be effective at increasing the quality of parent-child relationships.

## Limitations

Findings from the present study should be interpreted in the context of its limitations. First, the included variables are based on self-reports by youth and their parents, which may be subject to social desirability biases. Particularly, individuals may be less likely to report behaviors that they believe are contrary to social norms. For example, youth may be inclined to underreport delinquent behaviors, such as substance use and peer aggression, to researchers than they actually engage in, as they want to provide more favorable answers (Krumpal 2013). Moreover, youth self-report of behaviors may be limited by recall bias, as youth may not remember the number of times they engaged in a specific behavior. Additionally, the convenience sample was comprised of youth with incarcerated parents from specific geographic locations and a range of correctional settings across the U.S. This sample of participants limits our ability to generalize findings to the broader population of all youth with incarcerated parents. Given that youth in the present study were pulled from a larger study using a mentoring intervention, the sample may further be limited by selection bias, as custodial parents who apply for their children to participate in a mentoring intervention and have children who agree to participate may have inherently more motivation and fewer problem behaviors than youth who declined to participate. Along with differences in the youth, parents of youth who did and did not participate in the intervention may also be different with regards to socioeconomic characteristics

which further limits the ability to generalize findings beyond the present sample. Finally, the study was cross-sectional in nature, which prevents the establishment of temporal ordering and making of causal inferences. Instead, our study is exploratory in nature and should be used to guide future research on this topic. Finally, given that the study utilizes data collected as part of the evaluation of an intervention program, we were unable to include all covariates that may be relevant to analyses. In particular, family income was not obtained as part of the baseline data collection and was unable to be included in the current analyses. Instead, we used several proxies for family socioeconomic status, including parent education, school mobility, and internet access, which may not fully capture socioeconomic status.

## Conclusion

Although children with incarcerated parents are commonly viewed as a homogenous group of children at-risk for delinquent behavior, advanced statistical analyses and a large sample from this hard-to-reach population found children with incarcerated parents to present with different profiles of problem behaviors. Most children with incarcerated parents are *well-adjusted* with low levels of internalizing and externalizing behavior problems, strong parental and teacher support, and infrequent delinquency. However, youth outside of the *well-adjusted* profile are at-risk for a myriad of behavioral problems, including aggressive behavior, depression, and hyperactivity. Comprehensive assessments of youth's needs should be undertaken to coordinate multisystemic interventions and connect children with incarcerated parents with appropriate support from their family, school, and community.

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## Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no conflict of interest.

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## References

- Aaron, L., & Dallaire, D. H. (2010). Parental incarceration and multiple risk experiences: effects on family dynamics and children's delinquency. *Journal of Youth and Adolescence*, 39(12), 1471–1484. <https://doi.org/10.1007/s10964-009-9458-0>.
- Alexander, M. (2010). *The new Jim Crow: mass incarceration in the age of colorblindness*. New York NY: New Press.
- Angold, A., Costello, E., Pickles, A., Messer, S., Winder, F., & Silver, D. (1995). The development of a short questionnaire for use in epidemiological studies of depression in children and adolescents. *International Journal of Methods in Psychiatric Research*, 5, 237–24.
- Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, 16(5), 427–454.
- Armstrong, E., Eggins, E., Reid, N., Harnett, P., & Dawe, S. (2018). Parenting interventions for incarcerated parents to improve parenting knowledge and skills, parent well-being, and quality of the parent–child relationship: A systematic review and meta-analysis. *Journal of Experimental Criminology*, 14(3), 279–317.
- Asher, S. R., Hymel, S., & Renshaw, P. D. (1984). Loneliness in children. *Child Development*, 55(4), 1456–1464.
- Baker, J., McHale, J., Strozier, A., & Cecil, D. (2010). Mother–grandmother coparenting relationships in families with incarcerated mothers: a Pilot Investigation. *Family Process*, 49(2), 165–185.
- Barrett, N., McEachin, A., Mills, J. N., & Valant, J. (2017). *What are the sources of school discipline disparities by student race and family income*. New Orleans: Education Research Alliance for New Orleans.
- Bell, M. F., Bayliss, D. M., Glauert, R., & Ohan, J. L. (2018). Using linked data to investigate developmental vulnerabilities in children of convicted parents. *Developmental Psychology*, 54(7), 1219–1231. <https://doi.org/10.1037/dev0000521.supp>.
- Boswell, G., & Wedge, P. (2002). *Imprisoned fathers and their children*. London, UK: Jessica Kingsley.
- Brendgen, M., Vitaro, F., & Bukowski, W. (2000). Deviant friends and early adolescents' emotional and behavioral adjustment. *Journal of Research on Adolescence*, 10, 173–189.
- Brewster, A. B., & Bowen, G. L. (2004). Teacher support and the school engagement of Latino middle and high school students at risk of school failure. *Child and Adolescent Social Work Journal*, 21(1), 47–67. <https://doi.org/10.1023/B:CASW.0000012348.83939.6b>.
- Boch, S. J., Warren, B. J., & Ford, J. L. (2019). Attention, externalizing, and internalizing problems of youth exposed to parental incarceration. *Issues in Mental Health Nursing*, 40(6), 466–475. <https://doi.org/10.1080/01612840.2019.1565872>.
- Caldwell, C. H., Sellers, R. M., Bernat, D. H., & Zimmerman, M. A. (2004). Racial identity, parental support, and alcohol use in a sample of academically at-risk African American high school students. *American Journal of Community Psychology*, 34(1–2), 71–82.
- Carson, E. A. (2020). *Prisoners in 2018*. Washington, DC: U.S. Department of Justice, Office of Justice Program, Bureau of Justice Statistics.
- Catalano, R. F., Berglund, M. L., Ryan, J. A., Lonczak, H. S., & Hawkins, J. D. (2004). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *The Annals of the American Academy of Political and Social Science*, 591(1), 98–124. <https://doi.org/10.1037/1522-3736.5.1.515a>.
- Celeux, G., & Soromenho, G. (1996). An entropy criterion for assessing the number of clusters in a mixture model. *Journal of Classification*, 13(2), 195–212.
- Cooper, K., & Stewart, K. (2013). *Does money affect children's outcomes?: a systematic review*. London: Joseph Rowntree Foundation.
- Crick, N. R., & Grotpeter, J. K. (1996). Children's treatment by peers: victims of relational and overt aggression. *Development and Psychopathology*, 8, 367–380.

- Dallaire, D. H. (2007). Incarcerated mothers and fathers: a comparison of risks for children and families. *Family Relations*, 56(5), 440–453.
- Dallaire, D. H., & Wilson, L. (2010). The relation of exposure to parental criminal activity, arrest, and sentencing to children's maladjustment. *Journal of Child and Family Studies*, 19(4), 404–418.
- Dallaire, D. H., & Zeman, J. L. (2013). Empathy as a protective factor for children with incarcerated parents. *Monographs of the Society for Research in Child Development*, 78(3), 7–25. <https://doi.org/10.1111/mono.12018>.
- Davis, L., & Shlafer, R. J. (2017). Mental health of adolescents with currently and formerly incarcerated parents. *Journal of Adolescence*, 54, 120–134.
- Elliott, D. S., Huizinga, D., & Ageton, S. S. (1985). *Explaining delinquency and drug use*. Beverly Hills, CA: Sage Publications.
- Geller, A., & Franklin, A. W. (2014). Paternal incarceration and the housing security of urban mothers. *Journal of Marriage and the Family*, 76(2), 411–427.
- Glaze, L. E., & Maruschak, L. M. (2010). *Parents in prison and their minor children*. Washington, DC: U.S. Department of Justice, Office of Justice Program, Bureau of Justice Statistics.
- Goncalves, F. & Mello, S. (2020). A few bad apples? Racial bias in policing. *SSRN*. <https://doi.org/10.2139/ssrn.3627809>.
- Hanlon, T. E., Blatchley, R. J., Bennett-Sears, T., O'Grady, K. E., Rose, M., & Callaman, J. M. (2005). Vulnerability of children of incarcerated addict mothers: Implications for preventive intervention. *Children and Youth Services Review*, 27(1), 67–84.
- Haskins, A. R. (2014). Unintended consequences: effects of paternal incarceration on child school readiness and later special education placement. *Sociological Science*, 1, 141–158.
- Haskins, A. R. (2015). Paternal incarceration and child-reported behavioral functioning at age 9. *Social Science Research*, 52, 18–33. <https://doi.org/10.1016/j.ssresearch.2015.01.001>.
- Haskins, A. R., & Jacobsen, W. (2017). Schools as surveilling institutions? Paternal incarceration, system avoidance, and parental involvement in schooling. *American Sociological Review*, 82(4), 657–684.
- Jacobsen, W. (2015). *Punished for their fathers: school discipline among children of the prison boom* (no. wp14-08-ff). Princeton University, Woodrow Wilson School of Public and International Affairs, Center for Research on Child Wellbeing.
- Karcher, M. J., & Lindwall, J. (2001). Social interest, connectedness, and challenging experiences: What makes high school mentors persist? *The Journal of Individual Psychology*, 59(3), 293–315.
- Kjellstrand, J., Yu, G., Eddy, J. M., & Clark, M. (2019). Children with incarcerated parents and developmental trajectories of internalizing problems across adolescence. *American Journal of Criminal Justice*. <https://doi.org/10.1007/s12103-019-09494-4>.
- Kjellstrand, J., Reinke, W., & Eddy, J. (2018). Children of incarcerated parents: development of externalizing behaviors across adolescence. *Children & Youth Services Review*, 94, 628–635.
- Kopak, A., & Smith-Ruiz, D. (2016). Criminal justice involvement, drug use, and depression among African American children of incarcerated parents. *Race and Justice*, 6, 89–116.
- Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: a literature review. *Quality & Quantity*, 47(4), 2025–2047.
- Libbey, H. P. (2004). Measuring student relationships to school: attachment, bonding, connectedness, and engagement. *Journal of School Health*, 74(7), 274–283.
- Looney, A., & Turner, N. (2018). *Work and opportunity before and after incarceration*. Washington, DC: Brookings Institution.
- Lösel, F., Pugh, G., Markson, L., Souza, K., & Lanskey, C. (2012). *Risk and protective factors in the resettlement of imprisoned fathers with their families*. Milton: Ormiston Children and Families Trust.
- Mackintosh, V., Myers, B., & Kennon, S. (2006). Children of incarcerated mothers and their caregivers: Factors affecting the quality of their relationship. *Journal of Child and Family Studies*, 15(5), 579–594. <https://doi.org/10.1007/s10826-006-9030-4>.
- Maddox, S. J., & Prinz, R. J. (2003). School bonding in children and adolescents: Conceptualization, assessment, and associated variables. *Clinical Child and Family Psychology Review*, 6(1), 31–49. <https://doi.org/10.1023/A:1022214022478>.
- McLachlan, G., & Peel, D. (2004). *Finite mixture models*. New York, NY: John Wiley & Sons.
- Midgley, C., Feldlaufer, H., & Eccles, J. S. (1989). Student/teacher relations and attitudes toward mathematics before and after the transition to junior high school. *Child Development*, 60, 981–992.
- Mrazek, P. J., & Haggerty, R. J. (1994). *Reducing risks for mental disorders: frontiers for preventative intervention research*. Washington, DC: National Academy Press.
- Mumola, C. J. (2000). *Incarcerated parents and their children. bureau of justice statistics special report*. <https://eric.ed.gov/?id=ED448903>.
- Murphey, D., & Cooper, P. M. (2015). *Parents behind bars: what happens to their children*. Washington, DC: Child Trends.
- Murray, J., & Farrington, D. P. (2005). Parental imprisonment: Effects on boys' antisocial behaviour and delinquency through the life-course. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 46(12), 1269–1278.
- Murray, J., Farrington, D. P., & Sekol, I. (2012). Children's antisocial behavior, mental health, drug use, and educational performance after parental incarceration: a systematic review and meta-analysis. *Psychological Bulletin*, 138(2), 175–210.
- Murray, J., Loeber, R., & Pardini, D. (2012). Parental involvement in the criminal justice system and the development of youth thefts marijuana use, depression, and academic performance. *Criminology*, 50(1), 255–302.
- Naudeau, S. (2010). Children of incarcerated parents: developmental trajectories among school-age children. In Y. Harris, J. Graham & G. Oliver Carpenter (Eds), *Children of incarcerated parents: theoretical, developmental, and clinical issues*. New York, NY: Springer.
- Nesmith, A., & Ruhland, E. (2008). Children of incarcerated parents: challenges and resiliency, in their own words. *Children and Youth Services Review*, 30(10), 1119–1130.
- Nichols, E. B., & Loper, A. B. (2012). Incarceration in the household: academic outcomes of adolescents with an incarcerated household member. *Journal of Youth and Adolescence*, 41(11), 1455–1471. <https://doi.org/10.1007/s10964-012-9780-9>.
- Nichols, E., Loper, A. B., & Meyer, J. P. (2016). Promoting educational resiliency in youth with incarcerated parents: the impact of parental incarceration, school characteristics, and connectedness on school outcomes. *Journal of Youth and Adolescence*, 45(6), 1090–1109.
- Norris, S., Pecenco, M., & Weaver, J. (2018). *The effects of parental and sibling incarceration: evidence from Ohio*. Working paper.
- Norris, S., Pecenco, M., & Weaver, J. (2020). The effects of parental and sibling incarceration: Evidence from Ohio. *SSRN*. Available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3590735](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3590735).
- Orpinas, P., & Frankowski, R. (2001). The aggression scale: a self-report measure of aggressive behavior for young adolescents. *Journal of Early Adolescence*, 21(1), 50–67.
- Osterman, K. F. (2000). Students' need for belonging in the school community. *Review of Educational Research*, 70, 323–367. <https://doi.org/10.2307/1170786>.
- Pelham, W. E., Milich, R., Murphy, D. A., & Murphy, H. (1989). Normative data on the IOWA Connors Teacher Rating Scale. *Journal of Clinical Child Psychology*, 18(3), 259–262.
- Poehlmann, J., Park, J., Bouffiou, L., Abrahams, J., Shlafer, R., & Hahn, E. (2008). Representations of family relationships in

- children living with custodial grandparents. *Attachment & Human Development*, 10(2), 165–188.
- Rabe-Hesketh, S., & Everitt, B. S. (2007). *A handbook of statistical analyses using stata*. Boca Raton, FL: Chapman & Hall/CRC.
- Robertson, O. (2012). *Children of incarcerated parents*. Geneva: Quaker United Nations Office.
- Roettger, M. E., & Swisher, R. R. (2011). Associations of fathers' history of incarceration with sons' delinquency and arrest among Black, White, and Hispanic males in the United States. *Criminology*, 49(4), 1109–1147. <https://doi.org/10.1111/j.1745-9125.2011.00253.x>.
- Rosenberg, J., van Lissa, C., Schmidt, J., Beymer, P., Anderson, D., & Schell, M. (2019). tidyLPA: easily carry out latent profile analysis (LPA) using open-source or commercial software. <https://CRAN.R-project.org/package=tidyLPA>.
- Ruiz, D., & Kopak, A. (2014). The consequences of parental incarceration for African American mothers, children, and grandparent caregivers. *Journal of Pan African Studies*, 7(6), 9–25.
- Shader, M. (2001). *Risk factors for delinquency: an overview*. Washington, DC: US Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
- Shlafer, R., Reedy, T., & Davis, L. (2017). School-based outcomes among youth with incarcerated parents: Differences by school setting. *Journal of School Health*, 87, 687–695.
- Thompson, P. J., & Harm, N. J. (1995). Parent education for mothers in prison. *Pediatric Nursing*, 21(6), 552–555.
- Thornberry, T. P., Lizotte, A. J., Krohn, M. D., Farnworth, M., & Jang, S. J. (1994). Delinquent peers, beliefs, and delinquent behavior: a longitudinal test of interactional theory. *Criminology*, 32(1), 47–83.
- Travis, J., Solomon, A. L., & Waul, M. (2001). From Prison to Home: The Dimensions and Consequences of Prisoner Reentry. Washington, DC: The Urban Institute. Retrieved from [http://research.urban.org/UploadedPDF/from\\_prison\\_to\\_home.pdf](http://research.urban.org/UploadedPDF/from_prison_to_home.pdf).
- Travis, J., Solomon, A., & Waul, M. (2001). From prison to home: the dimensions and consequences of prisoner reentry. PsychEXTRA Dataset.
- Trice, A. D., & Brewster, J. (2004). The effects of maternal incarceration on adolescent children. *Journal of Police and Criminal Psychology*, 19(1), 27–35.
- Turney, K. (2014). Stress proliferation across generations? Examining the relationship between parental incarceration and childhood health. *Journal of Health and Social Behavior*, 55(3), 302–319. <https://doi.org/10.1177/0022146514544173>.
- Turney, K., & Haskins, A. R. (2014). Falling behind? Children's early grade retention after paternal incarceration. *Sociology of Education*, 87(4), 241–258.
- Turney, K., & Lanuza, Y. R. (2017). Parental incarceration and the transition to adulthood. *Journal of Marriage and Family*, 79(5), 1314–1330. <https://doi.org/10.1111/jomf.12429>.
- Van der Stouwe, T., Asscher, J. J., Stams, G. J. J., Deković, M., & van der Laan, P. H. (2014). The effectiveness of multisystemic therapy (MST): a meta-analysis. *Clinical Psychology Review*, 34(6), 468–481. <https://doi.org/10.1016/j.cpr.2014.06.006>.
- Vaughn, M. G., Salas-Wright, C. P., DeLisi, M., & Maynard, B. R. (2014). Violence and externalizing behavior among youth in the United States: is there a severe 5%? *Youth Violence and Juvenile Justice*, 12(1), 3–21. <https://doi.org/10.1177/1541204013478973>.
- Visher, C. A., Kachnowski, V., La Vigne, N. G., & Travis, J. (2004). *Baltimore prisoners' experiences returning home*. Washington, DC: Urban Institute.
- Wildeman, C. (2014). Parental incarceration, child homelessness, and the invisible consequences of mass imprisonment. *The Annals of the American Academy of Political and Social Science*, 651(1), 74–96. <https://doi.org/10.1177/0002716213502921>.
- Wildeman, C., & Turney, K. (2014). Positive, negative, or null? The effects of maternal incarceration on children's behavioral problems. *Demography*, 51(3), 1041–1068.