



HHS Public Access

Author manuscript

J Fam Trauma Child Custody Child Dev. Author manuscript; available in PMC 2024 August 02.

Published in final edited form as:

J Fam Trauma Child Custody Child Dev. 2024 ; 21(1): 41–56. doi:10.1080/26904586.2023.2200773.

Parental incarceration in childhood and violent delinquent behaviors in adulthood: Race/ethnicity and sex differences

Rosalyn Lee^a, Feijun Luo^b

^aDivision of Violence Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta, Ga, USA

^bDivision of Injury Prevention, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, Atlanta, Ga, USA

Abstract

Studies indicate parental incarceration (PI) is associated with children's externalizing behaviors. Fewer studies have examined whether the relationship persists into adulthood, manifesting specifically in violent behavior, and differs by race/ethnicity or sex of the individual exposed to PI during childhood. Wave I and Wave IV National Longitudinal Study of Adolescent to Adult Health data where average respondent age was 15.7 and 28.8 years, respectively, was used to expand understanding of PI impact on U.S. male and female violent behavior. PI was associated with fighting, fighting that seriously injured someone, and any violent delinquent behavior in adulthood. When examining the moderating effect of race/ethnicity, the association between PI and fighting was stronger for Hispanic persons than Non-Hispanic White persons. In analysis stratified by race/ethnicity, Hispanic persons who reported PI compared to those who did not were 4.78 [95% CI: 2.43, 9.38] times as likely to report fighting and Non-Hispanic Black persons who reported PI compared to those who did not were 1.88 times as likely (CI 1.01, 3.51) to report fighting. Sex was not found to be a moderator of the association between PI and violent delinquent behaviors. Results indicate the influence of PI on violent behavior persists into adulthood and differs by race/ethnicity. Differing patterns of elevated violence risk in adults with PI history suggest tailored preventive strategies may be of value.

CONTACT Rosalyn Lee rdl3@cdc.gov 4770 Buford Highway, NE, MS S106-10, Atlanta, GA 30341, USA.

Author contributions

Feijun Luo is now with the Division for Heart Disease and Stroke Prevention, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention (CDC).

Add Health is directed by Robert A. Hummer and funded by the National Institute on Aging cooperative agreements U01 AG071448 (Hummer) and U01AG071450 (Aiello and Hummer) at the University of North Carolina at Chapel Hill. Waves I-V data are from the Add Health Program Project, grant P01 HD31921 (Harris) from *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD), with cooperative funding from 23 other federal agencies and foundations. Add Health was designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill.

Disclosure of interest statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

This work was authored as part of the Contributor's official duties as an Employee of the United States Government and is therefore a work of the United States Government. In accordance with 17 U.S.C. 105, no copyright protection is available for such works under U.S. Law.

Keywords

Parental incarceration; race/ethnicity; sex; violent behavior; perpetration

A growing body of literature suggests the experience, during childhood or adolescence, of having a parent with an incarceration history (PI) has detrimental impacts on health and social well-being (Cho, 2010; Foster & Hagan, 2007; Foster & Hagan, 2013; Lee et al., 2013; Schwartz-Soicher et al., 2011; Turney, 2014a; Turney, 2014b;). A portion of this literature has focused on exploring links between PI and child and adolescent aggression, anti-social behavior, and delinquency (Foster & Hagan, 2007; Geller et al., 2012; Roettger & Swisher, 2011; Ruhland et al., 2020; Swisher & Shaw-Smith, 2015; Wakefield & Wildeman, 2011; Wildeman, 2010; Zhang & Dwyer Emory, 2015). Though there are limited studies on the impact of having a mother with an incarceration history on violence-related outcomes, studies on having a father with an incarceration history have indicated robust relationships between paternal incarceration history and children's externalizing behaviors (Wakefield & Wildeman, 2011), childhood aggression (Geller et al., 2012; Wildeman, 2010), adolescent delinquency (Foster & Hagan, 2007; Roettger & Swisher, 2011; Swisher & Shaw-Smith, 2015; Zhang & Dwyer Emory, 2015), young adult delinquency (Foster & Hagan, 2007; Murray & Farrington, 2005; Roettger & Swisher, 2011; Zhang & Dwyer Emory, 2015), and anti-social behavior (see Murray et al., 2012 for review). Gaps exist around whether exposure to PI in childhood influences adult violent behavior and whether the relationship between PI and such outcomes differ by racial/ethnic sub-group, and by sex of individuals affected by PI in childhood.

Research suggests that children from racial/ethnic sub-groups (e.g., Black persons and Hispanic persons) are at elevated risk of experiencing PI during childhood (Wildeman, 2009). Furthermore, children who experience PI are exposed to more adverse childhood experiences than other children (Turney, 2018), which may increase their risk of poor outcomes. Though some PI studies have also assessed whether impacts differ by subgroup (i.e., race/ethnicity, child sex) the number of studies has been relatively small, the outcomes of interest have tended not to focus on specific violent behavior, and the period of assessment has tended to focus on childhood or adolescence rather than adulthood. For example, Foster and Hagan (2013) examined sub-group differences in a study of the relationship between PI, mental health, and substance use. Black and Hispanic young adults who reported PI were found to have fewer problems compared to White young adults who reported PI; but, PI chronicity was found positively associated with increased problems for racial/ethnic young adults as compared to White young adults. Another study on PI and delinquency found greater risk among Hispanic young adults who reported PI compared to other young adults effected by PI during childhood (Swisher & Roettger, 2012).

With respect to differences by sex, the aforementioned study on the relationship of PI to mental health and substance use outcomes noted males to be at greater risk for poor outcomes (Foster & Hagan, 2013). Similarly, a small number of studies specific to PI and violence-related outcomes have examined differences by child sex and have noted that associations are, in general, particularly pronounced for male children (Wildeman, 2010).

Estimates of the effects of a parent's incarceration on aggression are almost twice as large for boys as for girls, although the effects are significant for both sexes (Geller et al., 2012). With respect to female children, one study on adolescent delinquency was significant for female children only if they lived with their fathers prior to the incarceration event (Swisher & Shaw-Smith, 2015). Several studies have also investigated the long-term implications of PI on young adult anti-social and delinquent behavior and found significant associations (Murray et al., 2012; Swisher & Roettger, 2012); but did not investigate or did not find differences by sex. Additionally, with the exception of two studies (Muftic & Smith, 2018; Murray & Farrington, 2005), one which utilized a single measure of violent behavior, most studies have not utilized measures of violence.

More clearly specifying links between PI and violent behavior as well as whether the relationship differs by respondent sex and race/ethnicity can further understanding of key processes that need to be interrupted in order to mitigate long-term impacts to individuals, families, and communities. As many adults exposed to PI will likely become parents themselves, it is of particular importance to further understanding of ways to mitigate intergenerational transmission of risk. Development of tailored strategies may help protect another generation of children from the collateral impacts of PI.

The current study utilized data from the National Longitudinal Study of Adolescent to Adult Health, a nationally representative U.S. sample of youth followed from adolescence to adulthood, to examine the relationship between PI and specific violent behaviors in adulthood and whether the relationship differs by race/ethnicity and sex of respondent. Research indicates that compared to White persons, Black persons face higher criminal justice related burdens such as fewer adult convictions, but more than twice the number of adult incarcerations, as well as more negative impacts to education, employment, and family strain (Blankenship et al., 2018; Garcia-Hallett, 2019). The higher burdens faced by Black persons and other racial/ethnic minorities may contribute to intersecting disadvantages (Purdie-Vaughns & Eibach, 2008) in the lives of their children. As such, it was expected that the relationship between PI and violent behaviors would be more pronounced for Black and Hispanic persons. Given literature on impacts by child sex, the expectation was that the relationship between PI and adult violent behaviors would be stronger for male adults.

Methods

Sample

The present study utilizes data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), a longitudinal study following a nationally representative probability sample of adolescents in grades 7 through 12 in the 1994–1995 school year (Harris, 2009). Add Health participants provided written informed consent for participation in all aspects of Add Health in accordance with the University of North Carolina School of Public Health Institutional Review Board guidelines that are based on the Code of Federal Regulations on the Protection of Human Subjects 45CFR46 (Add Health, n.d.). The present study was based on participants who were interviewed during Wave I (1994–1995) and Wave IV (2007–2008) and have a sampling weight. The full sample for Wave IV included 15,701 or 80.3% of the eligible participants from Wave I. The mean ages of participants during

the first and fourth Waves of data collection were 15.7 years and 28.8 years, respectively. Given our interest in early adulthood Wave IV data was used in lieu of the more recent Wave V data when the respondents were older. During Wave IV respondents were in the parenting phase of the life course. Behaviors exhibited during this period have important implications for intergenerational transmission of risk. This is also a time when anti-social and criminal behavior, including violence, generally is on the decline after peaking in late teen years (Sweeten et al., 2013). Thus, understanding whether by this period in the lives of respondents elevated risks such as externalizing behaviors and aggression desist or persist among those impacted by PI is important for efforts to prevent multi-generational patterns of violence.

Of the 15,701 participants who participated in both Wave I and Wave IV interviews, 14,800 participants have a sampling weight at Wave IV interview which could be used to compute population estimates. An additional 1,957 respondents were excluded because they were mainly missing information on PI or they reported PI first occurred during adulthood, resulting in a final analytical sample of 12,843 participants. Respondents excluded from the analysis were compared on key demographic characteristics to respondents included in the analysis and were not found to be significantly different. For data analysis, data describing participants' sociodemographic characteristics from Wave I of the Add Health study were combined with Wave IV self-reported PI history and violent behavior outcomes. Because data on the key independent variable, PI history, was collected during Wave IV, causal relationships could not be tested.

Measures

Dependent variables—During the Wave IV data collection survey respondents were asked about engaging in delinquent behavior at Wave IV. The 12 items of the delinquency scale can be separated into violent and nonviolent delinquent behaviors. The current analysis focused on violent delinquent behavior and utilized the following six questions: In the past 12 months, how often did you (1) use or threaten to use a weapon to get something from someone?; (2) take part in a physical fight where a group of your friends was against another group?; (3) get into a serious physical fight?; (4) hurt someone badly enough in a physical fight that he or she needed care from a doctor or nurse?; and Which of the following things happened in the past 12 months?: (5) You pulled a knife or gun on someone and (6) You shot or stabbed someone. The questions used in the current analysis are similar to those used by other researchers who have distinguished between measures of violent and nonviolent delinquent behaviors (Roettger & Swisher, 2011; Guo et al., 2008; Guo et al., 2007). The questions were recoded into dichotomous variables coded “1” if a respondent positively endorsed the item and “0” if the respondent indicated they did not engage in the behavior. The dichotomous variables derived from questions (2), (3), and (4) were named as “Fighting,” “Fighting in a Group,” and “Fighting That Seriously Injured Someone,” respectively. Due to low prevalence of weapon-related behaviors, the three weapon-related measures (questions (1), (5) and (6)) were combined into a dichotomous variable, “Weapon-Related Violence,” coded “1” if any of the three weapon-related items was “1” and coded “0” if all of three items were “0.” In addition, the fighting measures (questions (2), (3), and (4)) and weapon-related measures (questions (1), (5) and (6)) were combined to construct

an overall composite measure of violent delinquent behavior, “Any Violent Delinquent Behavior,” coded “1” if any of the 6 individual items was “1” and coded “0” if all of the 6 individual items were “0.”

Key independent variable—PI was as a dichotomous variable. At Wave IV respondents were asked if their biological mothers or fathers had ever been incarcerated. Respondents were also asked the age at which this first occurred. Respondents who indicated their mother or father had ever been incarcerated were coded as having a ‘PI’ history. Among this group, those who reported PI onset before or during age 18 were maintained in the study sample; others who reported PI were excluded. All other respondents were coded as ‘no PI’ history.

Control variables—When examining the relationship between parental incarceration and violent behaviors we need to control for potential confounders, variables that may affect both parental incarceration and violent delinquent behaviors. Several sociodemographic and historical factors from Wave 1 data collection that have documented associations in the literature with parental incarceration and violent behaviors were included in the analyses as control variables. These factors included race/ethnicity (Non-Hispanic White, Non-Hispanic Black, Hispanic, and Other), sex (male/female), grade (to capture cohort effects), whether the respondent was foreign born, whether the respondent reported child abuse victimization (i.e., emotional abuse, physical abuse, and sexual abuse), family structure (2 biological parents, 2 parents: 1 biological, single parent, or other), biological father’s education, biological mother’s education, biological father’s alcoholism, biological mother’s alcoholism, and whether the family received public assistance. Missing data for family’s receipt of public assistance, biological father’s alcoholism, and biological mother’s alcoholism were treated as separate categories and retained in the analyses.

Analysis—Logistic regression models were run for each of the violent delinquent behaviors to assess whether PI was associated with violent delinquent behaviors when potential confounding factors were accounted for. Next, for violent delinquent behaviors with which PI was found associated, interaction terms between PI and race/ethnicity or sex were added to logistic regression models to assess whether the relationships between PI and violent delinquent behaviors were moderated by race/ethnicity or sex. If a significant ($p < .05$) interaction term between PI and race/ethnicity or sex was found in the full sample, a stratified analysis by race/ethnicity or sex was then conducted in the sub-samples. Finally, because most of the excluded respondents had missing information on PI, multiple imputations were used to impute values for PI and then re-estimate associations of PI with violent delinquent behaviors. All the analyses were conducted using Stata 15.

Results

Characteristics of the weighted sample ($N = 12,843$) are as follows: nearly 12.7% had a biological mother or father who had ever spent time in jail or prison and 87.3% reported that neither parent experienced incarceration. There were slightly more males (50.4%) than females (49.6%). With respect to race/ethnicity, 68.5% were Non-Hispanic White; 15.0% were Non-Hispanic Black, 11.7% were Hispanic and 4.8% were categorized as Other. Violent behaviors in the sample were rare. About 2.9% of respondents reported any weapon-

related violence. Nearly 4.9% reported fighting; while 2.9% reported fighting in a group. Nearly 1.8% of the sample reported they had hurt someone badly enough while fighting that the individual needed to seek health services (henceforth—“fighting that seriously injured someone”). Overall, in the year that preceded the survey, when respondents were on average 28 years old, 7.8% of the sample perpetrated at least one violent delinquent behavior. Table 1 describes the prevalence of the violent behaviors by PI status and by race/ethnicity and sex. Reporting PI in childhood was significantly related to a higher prevalence of each violent behavior. Differences were also noted by PI status for most sub-groups. Noted exceptions to this are Non-Hispanic Blacks did not differ by PI status on fighting in a group or fighting that seriously injured; females did not differ by PI status on fighting that seriously injured; and there were no racial/ethnic sub-group or sex sub-group differences by PI status on weapon related violence.

Parental incarceration and violent behavior

Logistic regression results in Table 2 show that, when compared to individuals who reported neither parent had an incarceration history, those with a PI history were significantly more likely to report fighting (OR 1.89, CI 1.40, 2.56), fighting that seriously injured someone (OR 2.04, CI 1.23, 3.39), and engaging in at least one violent delinquent behavior (OR 1.59, CI 1.25, 2.02). Logistic regression results show that no significant differences were found between respondents with and without a PI history on fighting in a group and weapon-related violence.

Race/Ethnicity

Results from models including interaction terms (see Table 3) between PI and race/ethnicity indicated that race/ethnicity moderated the relationship between PI and one of the two violence outcomes that indicated significant main effects—fighting. The relationship between PI and fighting was stronger for Hispanic persons than Non-Hispanic White persons. Additionally, stratified analysis by race/ethnicity in Table 4 suggests that Hispanic respondents who reported PI compared to those who did not were more likely to report fighting (OR 4.78, CI 2.43, 9.38) and Non-Hispanic Black persons who reported PI compared to those who did not were more likely to report fighting (OR 1.88, CI 1.01, 3.51).

Sex

Results from models including interaction terms between PI and sex (see Table 3) did not indicate that sex moderated the relationship between PI and any of the three violence outcomes that had a significant main effect (i.e., fighting, fighting that seriously injures someone, and engaging in at least one violent delinquent behavior).

Multiple imputations

Logistic regression results from the multiple-imputation sample (N = 14,169) are very similar to those from the complete-case sample (N = 12,843). The values and significance levels of ORs of PI based on multiple imputations (see Supplemental Table) are very close to those in Table 2 for all violent delinquent behaviors.

In summary, findings of the current study suggest that any history of PI is associated with increased risk of violent behavior in adulthood. Of note is that Hispanic persons who reported PI history compared to Non-Hispanic White persons with such histories had higher odds of reporting fighting. Last, findings indicate that risk, conveyed by PI, of perpetrating later violent behavior does not differ by sex of child.

Discussion

The current study adds to what is known by: (1) identifying that PI was associated with two of six specific violent behaviors in adulthood—fighting and fighting that seriously injured someone—as well as an overall composite measure of violent delinquent behavior and (2) suggesting the relationship between PI and fighting was stronger for Hispanic persons; and (3) indicating that the relationship between PI and violence, does not differ for females and males.

These findings are consistent with previous studies on PI of populations transitioning to adulthood that have found significant and positive associations of PI history with general delinquency (Murray & Farrington, 2005; Roettger & Swisher, 2011; Swisher & Shaw-Smith, 2015; Zhang & Dwyer Emory, 2015). Previous studies however differ in that they tend to utilize measures that do not focus specifically on violent behaviors. Other ways in which the current study differs from previous research are as follows. Earlier studies on children primarily controlled for race but did not examine whether the relationship between PI and violent behaviors differed by racial/ethnic subgroups (Geller et al., 2012; Wildeman, 2010). One study that focused on populations transitioning to adulthood and tested for race interactions (Roettger & Swisher, 2011) did not identify an effect; another found an effect for Hispanic persons (Swisher & Roettger, 2012). The current study identified racial/ethnic group differences. Specifically, the association between parental incarceration and fighting was stronger for Hispanic persons as compared to Non-Hispanic White persons. Also, Non-Hispanic Black persons and Hispanic persons who reported PI compared to those who did not were more likely to report fighting.

Though few studies exist on racial/ethnic differences in the effects of PI on violent delinquent behaviors, related research may suggest avenues for future investigation. Research, for example, has identified some unique characteristics associated with violence risk among racial minority youth which may persist into young adulthood. Racial/ethnic minorities are more likely to experience PI. Further, studies have found paternal incarceration to be associated with higher levels of homelessness, residential mobility, greater neighborhood level socioeconomic disadvantage, and lower levels of social cohesion (Leibbrand et al., 2019; Muentner et al., 2019; Tasca et al., 2011). These factors appear to be consistent with research on racial/ethnic differences in violent behavior. For example, McNulty and Bellair (2003) examined racial/ethnic differences in serious adolescent violent behavior and found that violence among Hispanic adolescents was associated with gang involvement while violence among black adolescents was associated with community disadvantage. Further, community disadvantage has been found to place racial and ethnic minority youth at greater risk of bullying involvement (Cook et al., 2010; Xu et al., 2020). Similarly, parent absence or lower levels of parental monitoring, often consequences of PI,

have been associated with gang involvement (Farmer & Hairston, 2013; McDaniel, 2012). These factors may help explain the increased risk of fighting among Black and Hispanic adolescents who report PI even as they age into adults.

The current study also investigated whether differences in risk for later violent behavior exists by child sex. Results do not suggest PI differentially impacts male and female children. Thus, though earlier studies found the relationship between paternal incarceration and elevated aggressive behavior is most pronounced for male children (Geller et al., 2012; Wildeman, 2010), the current study did not find that risk of later violence differed for males and females who experienced PI in childhood. This suggests interventions designed to prevent or mitigate long-term risk of violence influenced by PI in childhood may be of value to both male and female children and adolescents. The findings of this study also generate questions for future research regarding whether interim processes are influencing female children exposed to PI to 'catch up' in risk with their male counterparts; or whether this outcome may be reflective of differing patterns of desistence of violent behavior over time in male and females affected by PI (Sweeten et al., 2013).

In contrast to previous research, this is the first study we are aware of that identified racial/ethnic group differences on violent outcomes among young adults with a history of PI. Additional studies are needed to further understanding of racial/ethnic subgroup differences. In addition to considering more nuanced individual level and community level factors to identify underlying drivers of racial/ethnic differences, such studies should also consider examining whether outcomes are conditioned on the age of the respondent at onset of PI, other characteristics of the PI experience (i.e., frequency of incarceration, duration of incarceration, quality of parent-child relationship, experience with relative/non-relative caregiving, quality of relationships with other caregivers) and the sex of the parent (i.e., incarceration of a mother, a father, or both parents). For example, related research has found that adolescent delinquency was significant for female children only if they lived with their fathers prior to the incarceration event (Swisher & Shaw-Smith, 2015). Additionally, Cho (2010) found, particularly amongst male children, that maternal incarceration was positively associated with high school dropout, which may be highly influenced by externalizing behavior problems. Furthermore, Le et al. (2019) found that paternal incarceration and parental incarceration before age 10 was associated with elevated risk of sexually transmitted infections in young adulthood. Though the aforementioned studies do not specifically focus on violence behaviors, their results suggest the value of investigating the potential unique influences of parent sex and timing of parent's incarceration.

Violence can be prevented through strong connections to caring adults, protective community environments and provision of resources to address early trauma and problem behavior (David-Ferdon et al., 2016). Consideration by professionals in school, health, and social welfare systems of risks that children who experience PI face during important developmental stages may help mitigate or prevent violent behaviors from persisting into adulthood. Engaging impacted children in mentoring or after school programs has been shown to improve adult relationships which in turn influence improvements in youth behavior, including decreasing the likelihood of engaging in fights (David-Ferdon et al.,

2016). Better understanding challenges faced by children/adolescents impacted by PI may help tailor activities and services in ways that may prevent transmission of violent behaviors into adulthood and possibly across future generations. Research indicates desistance from anti-social behaviors typically occurs with age as individuals learn to successfully navigate transitions such as completing education, engaging in employment, and learning how to maintain healthy intimate relationships (Sweeten et al., 2013). Thus, programs tailored for individuals who have experienced PI might place special emphasis on empowering adolescents and young adults to successfully negotiate these transitions. Changes to policies that influence inequitable exposure of racial/ethnic minority parents to incarceration may reduce the extent of disruption and increase the degree of safety, security, and nurturing in the lives of children and adolescents from racial/ethnic minority sub-groups. A reduction in risk exposure and increase in protective factors may help prevent risk of violence in the lives of these youth (David-Ferdon et al., 2016).

The findings of this study indicate associations. Due to data limitations causality cannot be established. The study utilized a measure of lifetime history of parental incarceration which did not parse out whether the respondent lived with the parent prior to incarceration. Measures of duration or frequency of incarceration were not included in the analysis. Additionally, the dataset does not allow closer examination of the type of incarceration (e.g., jail vs prison) that a respondent's parent (s) experienced. Thus, it was not possible to distinguish between respondents who experienced infrequent and/or brief periods of PI from individuals who experienced chronic and/or long episodes of PI over the course of their childhood. As discussed earlier when describing the sample, 1,200 respondents are not in the analytical sample due to missing information. We however found that these individuals along with others who reported PI was first experienced in adulthood did not significantly differ from those included in the analytical sample on key demographic characteristics. This may mitigate potential bias. Limitations related to the violence measures in the study, include that they are past year reports and several have low prevalence rates. The data does not provide context for the elevated risk of 'fighting' that is shared in this subgroup of young adults. It is unknown whether the fighting that is reported is with strangers, work-related or family related. Having context would shed light on whether the risk is situational or whether the individual has a broad propensity for aggression. An additional limitation relates to the potential for recall bias, particularly since respondents were first asked about whether a mother or a father had a history with incarceration during Wave IV of data collection when they were young adults. Furthermore, such history may be perceived as sensitive due to potential for stigma. As such, responses may be affected by social desirability. If impacted there would be an under-estimate of PI. Last, small cell sizes may have affected the analysis. For example, the numbers of participants who had parental incarceration exposure and violent delinquent behaviors among some groups by race/ethnicity or sex were so small that this may have contributed to statistical insignificance in comparisons (Table 1) and in associations of parental incarceration exposure with some violent delinquent behaviors (Tables 2–4).

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Data availability statement

The data that support the findings of this study are available from The National Longitudinal Study of Adolescent to Adult Health [<https://addhealth.cpc.unc.edu/data/#restricted-use>] by contractual agreement.

References

- Add Health. (n.d.). The national longitudinal study of adolescent to adult health. Retrieved from Frequently asked questions. <https://addhealth.cpc.unc.edu/documentation/frequently-asked-questions/>.
- Blankenship KM, Del Rio Gonzalez AM, Keene DE, Groves AK, & Rosenberg AP (2018). Mass incarceration, race inequality, and health: Expanding concepts and assessing impacts on well-being. *Social Science & Medicine* (1982), 215, 45–52. 10.1016/j.socscimed.2018.08.042 [PubMed: 30205278]
- Cho R. (2010). Maternal incarceration and children's adolescent outcomes: Timing and dosage. *Social Service Review*, 84(2), 257–282. 10.1086/653456
- Cook CR, Williams KR, Guerra NG, Kim TE, & Sadek S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly*, 25(2), 65–83. 10.1037/a0020149
- David-Ferdon C, Vivolo-Kantor AM, Dahlberg LL, Marshall KJ, Rainford N, & Hall JE (2016). A comprehensive technical package for the prevention of youth violence and associated risk behaviors. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
- Farmer AY, & Hairston T. (2013). Predictors of gang membership: Variations across grade levels. *Journal of Social Service Research*, 39(4), 530–544. 10.1080/01488376.2013.799112
- Foster H, & Hagan J. (2007). Incarceration and intergenerational social exclusion. *Social Problems*, 54(4), 399–433. 10.1525/sp.2007.54.4.399
- Foster H, & Hagan J. (2013). Maternal and paternal imprisonment in the stress process. *Social Science Research*, 42(3), 650–669. 10.1016/j.ssresearch.2013.01.008 [PubMed: 23521986]
- Garcia-Hallett J. (2019). “We’re being released to a jungle”: The state of prisoner reentry and the resilience of women of color. *The Prison Journal*, 99(4), 459–483. 10.1177/0032885519852089
- Geller A, Cooper CE, Garfinkel I, Schwartz-Soicher O, & Mincy RB (2012). Beyond absenteeism: Father incarceration and child development. *Demography*, 49(1), 49–76. 10.1007/s13524-011-0081-9 [PubMed: 22203452]
- Guo G, Roettger M, & Cai T. (2008). The integration of genetic propensities into social-control models of delinquency and violence among male youths. *American Sociological Review*, 73(4), 543–568. 10.1177/000312240807300402
- Guo G, Roettger M, & Shih JC (2007). Contributions of the DAT1 and DRD2 genes to serious and violent delinquency among adolescents and young adults. *Human Genetics*, 121(1), 125–136. 10.1007/s00439-006-0244-8 [PubMed: 17120049]
- Harris KM (2009). The National Longitudinal Study of Adolescent to Adult Health (Add Health), Waves I & II, 1994–1996; Wave III, 2001–2002; Wave IV, 2007–2009 [Machine-readable data file and documentation]. Chapel Hill, NC: Carolina Population Center, University of North Carolina at Chapel Hill.
- Le GT, Deardorff J, Lahiff M, & Harley KG (2019). Intergenerational associations between parental incarceration and children's sexual risk taking in young adulthood. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, 64(3), 398–404. 10.1016/j.jadohealth.2018.09.028 [PubMed: 30514651]
- Lee RD, Fang X, & Luo F. (2013). The impact of parental incarceration on the physical and mental health of young adults. *Pediatrics*, 131(4), e1188–95–e1195. 10.1542/peds.2012-0627
- Leibbrand C, Carl E, Bruns A, & Lee H. (2019). Barring progress: The influence of paternal incarceration on families' neighborhood attainment. *Social Science Research*, 84, 102321. 10.1016/j.ssresearch.2019.06.012

- McDaniel DD (2012). Risk and protective factors associated with gang affiliation among high-risk youth: A public health approach. *Injury Prevention: Journal of the International Society for Child and Adolescent Injury Prevention*, 18(4), 253–258. 10.1136/injuryprev-2011-040083
- McNulty TL, & Bellair PE (2003). Explaining racial and ethnic differences in serious adolescent violent behavior. *Criminology*, 41(3), 709–747. 10.1111/j.1745-9125.2003.tb01002.x
- Muentner L, Holder N, Burnson C, Runion H, Weymouth L, & Poehlmann-Tynan J. (2019). Jailed parents and their young children: Residential instability, homelessness, and behavior problems. *Journal of Child and Family Studies*, 28(2), 370–386. 10.1007/s10826-018-1265-3 [PubMed: 35530726]
- Muftic LR, & Smith M. (2018). Sex, parental incarceration, and violence perpetration among a sample of young adults. *Journal of Interpersonal Violence*, 33(2), 316–338. 10.1177/0886260515605123 [PubMed: 26390893]
- Murray J, & Farrington DP (2005). Parental imprisonment: Effects on boys' antisocial behavior and delinquency through the life-course. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 46(12), 1269–1278. 10.1111/j.1469-7610.2005.01433.x [PubMed: 16313427]
- Murray J, Farrington DP, & 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. 10.1037/a0026407 [PubMed: 22229730]
- Purdie-Vaughns V, & Eibach RP (2008). Intersectional invisibility: The distinctive advantages and disadvantages of multiple subordinate-group identities. *Sex Roles*, 59(5–6), 377–391. 10.1007/s11199-008-9424-4
- Roettger ME, & Swisher RR (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. 10.1111/j.1745-9125.2011.00253.x
- Ruhland EL, Davis L, Atella J, & Shlafer RJ (2020). Externalizing behavior among youth with a current or formerly incarcerated parent. *International Journal of Offender Therapy and Comparative Criminology*, 64(1), 3–21. 10.1177/0306624X19855317 [PubMed: 31200615]
- Schwartz-Soicher O, Geller A, & Garfinkel I. (2011). The effect of paternal incarceration on material hardship. *The Social Service Review*, 85(3), 447–473. 10.1086/661925 [PubMed: 24839314]
- Sweeten G, Piquero AR, & Steinberg L. (2013). Age and the explanation of crime, revisited. *Journal of Youth and Adolescence*, 42(6), 921–938. 10.1007/s10964-013-9926-4 [PubMed: 23412690]
- Swisher RR, & Roettger ME (2012). Father's incarceration and youth delinquency and depression: Examining differences by race and ethnicity. *Journal of Research on Adolescence: The Official Journal of the Society for Research on Adolescence*, 22(4), 597–603. 10.1111/j.1532-7795.2012.00810.x [PubMed: 23264723]
- Swisher RR, & Shaw-Smith U. (2015). Paternal incarceration and adolescent well-being: Life course contingencies and other moderators. *The Journal of Criminal Law & Criminology*, 104(4), 929–958. PMID: 27239076; PMCID: PMC4883585.
- Tasca M, Rodriguez N, & Zatz MS (2011). Family and residential instability in the context of paternal and maternal incarceration. *Criminal Justice and Behavior*, 38(3), 231–247. 10.1177/0093854810391632
- Turney K. (2014a). The consequences of paternal incarceration for maternal neglect and harsh parenting. *Social Forces*, 92(4), 1607–1636. 10.1093/sf/sot160
- Turney K. (2014b). Stress proliferation across generations? Examining the relationship between parental incarceration and childhood health. *Journal of Health and Social Behavior*, 55(3), 302–319. 10.1177/0022146514544173 [PubMed: 25138199]
- Turney K. (2018). Adverse childhood experiences among children of incarcerated parents. *Children and Youth Services Review*, 89, 218–225. 10.1016/j.childyouth.2018.04.033
- Wakefield S, & Wildeman C. (2011). Mass imprisonment and racial disparities in childhood behavioral problems. *Criminology & Public Policy*, 10(3), 793–817. 10.1111/j.1745-9133.2011.00741.x
- Wildeman C. (2009). Parental imprisonment, the prison boom, and the concentration of childhood disadvantage. *Demography*, 46(2), 265–280. 10.1353/dem.0.0052 [PubMed: 21305393]

- Wildeman C. (2010). Paternal incarceration and children's physically aggressive behaviors: Evidence from the fragile families and child wellbeing study. *Social Forces*, 89(1), 285–309. 10.1353/sof.2010.0055
- Xu M, Macrynika N, Waseem M, & Miranda R. (2020). Racial and ethnic differences in bullying: Review and implications for intervention. *Aggression and Violent Behavior*, 50, 101340. 10.1016/j.avb.2019.101340
- Zhang X, & Dwyer Emory A. (2015). Situating the experience of maternal incarceration: Childhood and young adult context. *Violence and crime in the family: Patterns, causes and consequences. Contemporary Perspectives in Family Research*, 9, 219–254. 10.1108/S1530-353520150000009011

Table 1.

Prevalence of violent delinquent behaviors by parental incarceration, by total, race/ethnicity, and sex.

Violent delinquent behaviors	No parental incarceration	Parental incarceration	P-value
Fighting	435 (4.0%)	156 (11.1%)	0.0000
By race/ethnicity:			
Non-Hispanic White	218 (3.8%)	71 (9.0%)	0.0000
Non-Hispanic Black	115 (5.8%)	47 (12.5%)	0.0014
Hispanic	65 (3.4%)	32 (17.2%)	0.0000
By sex:			
Male	335 (6.3%)	107 (15.8%)	0.0000
Female	100 (1.6%)	49 (6.6%)	0.0000
Fighting in a group	279 (2.6%)	82 (5.1%)	0.0001
By race/ethnicity:			
Non-Hispanic White	128 (2.3%)	27 (4.1%)	0.0310
Non-Hispanic Black	71 (3.9%)	29 (5.3%)	0.3702
Hispanic	53 (2.8%)	21 (8.2%)	0.0032
By sex:			
Male	234 (4.4%)	59 (8.3%)	0.0015
Female	45 (0.7%)	23 (1.9%)	0.0042
Fighting that seriously injured someone	147 (1.4%)	63 (4.5%)	0.0000
By race/ethnicity:			
Non-Hispanic White	75 (1.4%)	29 (4.1%)	0.0001
Non-Hispanic Black	40 (2.0%)	16 (3.9%)	0.0841
Hispanic	19 (1.0%)	15 (6.7%)	0.0001
By sex:			
Male	129 (2.4%)	56 (8.6%)	0.0000
Female	18 (0.3%)	7 (0.5%)	0.4239
Weapon-related violence	283 (2.7%)	65 (4.3%)	0.0103
By race/ethnicity:			
Non-Hispanic White	126 (2.3%)	25 (3.8%)	0.0787
Non-Hispanic Black	87 (4.5%)	24 (4.8%)	0.8392
Hispanic	49 (3.5%)	13 (4.9%)	0.5003
By sex:			
Male	205 (4.2%)	42 (6.1%)	0.0850
Female	78 (1.2%)	23 (2.6%)	0.0169
Any violent delinquent behavior	731 (6.8%)	214 (14.4%)	0.0000
By race/ethnicity:			
Non-Hispanic White	344 (6.1%)	90 (11.9%)	0.0000
Non-Hispanic Black	191 (9.8%)	69 (16.1%)	0.0076
Hispanic	131 (8.2%)	45 (21.0%)	0.0000
By sex:			
Male	543 (10.6%)	138 (19.4%)	0.0000

Violent delinquent behaviors	No parental incarceration	Parental incarceration	<i>P</i>-value
Female	188 (3.0%)	76 (9.6%)	0.0000

The analytical sample included 12,843 participants, consisting of 11,150 participants without parental incarceration and 1,693 participants with parental incarceration.

Counts are unweighted. Percentages are weighted, representing prevalence of violent delinquent behaviors by parental incarceration in different population groups.

The *P*-value is a statistic for the Pearson χ^2 test for the independence of the rows (violent delinquent behaviors) and columns (parental incarceration).

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 2.

Relationship between parental incarceration and violent delinquent behaviors.

Outcome	Parental incarceration (AOR, 95% CI) (Reference: No parental incarceration)
Fighting	1.89*** [1.40, 2.56]
Fighting in a group	1.30 [.86, 1.95]
Fighting that seriously injured someone	2.04** [1.23, 3.39]
Weapon-related violence	1.24 [.84, 1.84]
Any violent delinquent behavior	1.59*** [1.25, 2.02]

All models controlled for the following Wave 1 characteristics: grade (proxy for age), sex, family structure, foreign born, race/ethnicity, father and mother education, father and mother alcoholism, family receipt of public assistance, history of emotional, physical, and sexual abuse.

AOR: odds ratio; CI: confidence interval.

P < .001

**
P < .01

*
P < .05.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 3.

Moderation of relationship between parental incarceration and violent delinquent behaviors by race/ethnicity and sex.

Outcome	Parental incarceration (PI) (Reference: No PI)	Race/Ethnicity (Reference: Non-Hispanic White)	Sex (Reference: female)	PI × Race/Ethnicity (Reference: No PI × Non-Hispanic White)	PI × Sex (Reference: No PI × Female)
Fighting	.40* [.01, .78]	Non-Hispanic Black: .29 [-.06, .64] Hispanic: -.11 [-.58, .36]	1.41*** [1.15, 1.68]	PI × Non-Hispanic Black: .23 [-.48, .94] PI × Hispanic: .94* [.22, 1.65]	
Fighting	.90*** [.42, 1.38]	Non-Hispanic Black: .34* [.08, .60] Hispanic: .21 [-.10, .52]	1.52*** [1.21, 1.83]		-.36 [-.94, .21]
Fighting that seriously injured someone	.55 [-.06, 1.17]	Non-Hispanic Black: .22 [-.35, .79] Hispanic: -.12 [-.86, .61]	2.48*** [1.87, 3.09]	PI × Non-Hispanic Black: -.06 [-1.09, .97] PI × Hispanic: .85 [-.42, 2.13]	
Fighting that seriously injured someone	-.09 [-1.39, 1.21]	Non-Hispanic Black: .20 [-.26, .65] Hispanic: .24 [-.36, .83]	2.23*** [1.49, 2.97]		.88 [-.44, 2.21]
Any violent delinquent behavior	.34* [.03, .66]	Non-Hispanic Black: .43** [.15, .72] Hispanic: .29 [-.07, .65]	1.31*** [1.07, 1.54]	PI × Non-Hispanic Black: .07 [-.50, .65] PI × Hispanic: .44 [-.18, 1.06]	
Any violent delinquent behavior	.79*** [.41, 1.17]	Non-Hispanic Black: .43*** [.20, .67] Hispanic: .41** [.13, .68]	1.42*** [1.16, 1.68]		-.47 [-.95, .02]

Parameter estimates and their 95% confidence intervals were reported.

All models controlled for the following Wave 1 characteristics: grade (proxy for age), sex, family structure, foreign born, race/ethnicity, father and mother education, father and mother alcoholism, family receipt of public assistance, history of emotional, physical, and sexual abuse.

*** P < .001

** P < .01

* P < .05.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 4.

Relationship between parental incarceration and violent delinquent behaviors stratified by race/ethnicity.

Outcome stratified by race/ethnicity	Parental incarceration (AOR, 95% CI) (Reference: No parental incarceration)	Sub-sample size
Fighting		
By race/ethnicity:		
Non-Hispanic White	1.42 [.93, 2.17]	7,118
Non-Hispanic Black	1.88* [1.01, 3.51]	2,639
Hispanic	4.78*** [2.43, 9.38]	1,974

All models controlled for the following Wave 1 characteristics: grade (proxy for age), family structure, foreign born, father and mother education, father and mother alcoholism, family receipt of public assistance, history of emotional, physical, and sexual abuse.

The stratified analysis for the “Other” race/ethnicity category was not conducted because some cell sizes were less than 10, the reporting threshold for data confidentiality.

AOR: adjusted odds ratio; CI: confidence interval.

P < .001

**
P < .01

*
P < .05.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript