

THE IMPACT OF PARENTAL INCARCERATION
ON ADOLESCENT OFFENDING

by

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DEDICATION

This dissertation is dedicated to all first-generation college students.

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During my first few years as an undergraduate, I continuously struggled thinking I would never be able to finish college, not due to the courses but the complexity of balancing school and work. As a first-generation college student from a small town, I knew very little about the world outside of my hometown, so finishing college felt like an impossible task while I struggled to navigate my new life as a student. As I reflect on those times, it is hard to believe I was at the very beginning of what I had no idea would be a long and rewarding academic experience. For this reason, I dedicate my dissertation to all first-time college generation students. Although the road may be long and the struggles may seem overwhelming, you can and will accomplish your goals.

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ABSTRACT

Approximately 5 million children in the United States have been affected by parental incarceration, which is about 7% of all children in the United States (Murphey & Cooper, 2015). Studies have demonstrated that parental incarceration leads to negative outcomes for these children (Cochran, Siennick, & Mears, 2018; Dallaire, Ciccone, & Wilson, 2012; Foster & Hagan, 2013; Murray, Loeber, & Pardini, 2012). Although it is well established that experiencing parental incarceration generally increases poor outcomes for children, less is known about the specific processes that lead to these negative outcomes. The current studies seek to identify potential mediating pathways between parental incarceration and future delinquent behavior using two longitudinal datasets that include middle/high school students and serious adolescent offenders. A community sample is used for Study 1 (Rural Substance Abuse and Violence Project) and an at-risk sample is used for Study 2 (The Pathways to Desistance Study). In Study 1, parental incarceration resulted in more antisocial beliefs, neutralization of delinquent behavior, and antisocial peers as well as fewer school bonds, less maternal attachment, paternal attachment, and parental monitoring. Adolescents with lower levels of self-control also commit more crime than their counterparts. The relationship between parental incarceration and offending is mediated by antisocial beliefs, neutralization, school bonds, delinquent peers, paternal attachment, and maternal monitoring. Study 2 did not have significant findings using the 18-month follow-up measure. In the 12-84-

month outcome measure, parental incarceration increases offending while self-control significantly decreases offending.

I. INTRODUCTION

Background and Significance of Parental Incarceration on Youth

There has long been an emphasis on the deleterious effects of parental incarceration on children (Cochran, Siennick, & Mears, 2018; Dallaire, Ciccone, & Wilson, 2012; Foster & Hagan, 2013; Murray, Loeber, & Pardini, 2012). These studies have focused on several collateral consequences, including the disruption this event causes in a child's life. For example, parental incarceration may lead to a shift in childcare, which may cause instability and other poor outcomes for children (Phillips, Erkanli, Keeler, & Angold, 2006; Poehlmann, 2003; Poehlmann, 2005). A variety of negative outcomes may occur, including poor academic performance (Stanton, 1980; Trice & Brewster, 2004) and behavioral and emotional problems (Moerk, 1973; Stanton, 1980). In addition, parental incarceration may lead to social exclusion from peers and school and changes in behavior that may include an increase in delinquent and criminal behavior, making the impact of parental incarceration an important topic of concern (Cochran, Siennick, & Mears, 2018).

In particular, the United States is in a unique position when considering parental incarceration, as it is well known that the United States incarcerates more individuals than any other nation (Walmsley, 2016). To put this into perspective, the world prison population rate is about 145 per 100,000 while the U.S. incarcerates about 655 per 100,000 people (Walmsley, 2016). Most countries in the world (53%) have rates that are below 150 per 100,000 people, making the U.S. an outlier in its incarceration rate. Among the incarcerated population includes parents; however, there is another population affected, specifically the children of incarcerated parents. As there is no

official agency charged with identifying children of incarceration parents, this topic is a difficult one to investigate from a national perspective. However, some studies have made estimates regarding the number of children who have an incarcerated parent, including the Bureau of Justice Statistics. Considering solely inmates who are parents, the number of parents who were held in state and federal prisons from 1991 through mid-2007 increased by 79% (Glaze & Maruschak, 2010). This amounts to an additional 357,300 parents who were incarcerated in state and federal prisons over a period of 16.5 years. The number of children who have an incarcerated parent also increased over this same time period by 80% (or by 761,000 children) (Glaze & Maruschak, 2010).

Since the United States' incarcerated population is largely male, it is anticipated that more children will experience having an incarcerated father, as opposed to an incarcerated mother. The Bureau of Justice Statistics provides some data to examine this topic. The most recently available data that surveyed incarcerated parents estimates that as of mid-2007, 744,200 fathers were incarcerated, compared to just 65,600 incarcerated mothers. Together, as of mid-2007, mothers and fathers who were incarcerated at the time of their interview reported having over 1.5 million children affected by their incarceration (specifically 1,706,600 children). As anticipated, fathers report having more children affected by their incarceration compared to mothers. Specifically, 1,559,200 children had fathers who were incarcerated while roughly 147,400 children had mothers who were incarcerated (according to reports from the incarcerated parent). This large difference is expected due to the gender differences in incarceration rates.

However, although mothers have lower numbers of children who are impacted by their incarceration, the effect of maternal incarceration on children is still a pressing issue

because children with incarcerated mothers face more risks than children with incarcerated fathers (Hagan & Dinovitzer, 1999; Johnson & Waldfogel, 2002; Koban, 1983). In addition, there is an increasing number of mothers who are becoming incarcerated over time. In fact, according to the Survey of Inmates in State and Federal Correctional Facilities (Bureau of Justice Statistics, 2004), the number of children with mothers held in state or federal prison between 1991 and mid-2007 increased by 131%. During this same time period, the number of children with fathers in state or federal prison increased by 77% (Glaze & Maruschak, 2010). Mothers have increasingly been subject to incarceration, which spurred much of the initial interest (beginning in the late 1970s and 1980s) in the effects of parental incarceration on children. Today, maternal incarceration remains a pressing issue for several reasons. First, recent data from the Bureau of Justice Statistics reflects a trend of more women being held in jail than ever before. In 2000, females accounted for 11% of the total jail population, compared to 14% in 2014 (Bureau of Justice Statistics, 2015). Despite this increase however, the number of females in custody appear to now be stabilizing but remain at a higher rate than in the past (Bureau of Justice Statistics, 2015). Investigating the impact of more females, and therefore more mothers, being in custody remains important due to the fact that mothers typically serve as the primary caregiver prior to their incapacitation (Glaze & Maruschak, 2010). It is also conceivable that negative outcomes are more consequential for youth with an incarcerated mother opposed to an incarcerated father.

However, it is unclear whether the consequences of having an incarcerated mother or father are different for children, making both maternal and paternal incarceration an area for concern. Although the percentages of children who have an incarcerated parent

appear to be minute according to some estimates (2.3% of all children in the United States; Glaze & Maruschak, 2010), this percentage accounts for an estimated total of 74 million children who were under the age of 18 in the United States as of July 1, 2007. In other words, in terms of the actual number of children potentially growing up without one or both of their biological parents, an estimated 2.3% of children affected out of a total of 74 million children amounts to about 1,706,600 children who are affected by having a biological parent incarcerated in either state or federal prison (Glaze & Maruschak, 2010). While the percentage itself appears small, when considering the estimated number of children affected, the percentage is not an inconsequential number. In addition, the estimated 2.3% of children affected only include children whose biological parents are currently incarcerated. When considering any type of imprisonment history of a parent (who must have reported that they previously lived with their child), recent estimates report there are 5 million children (or 7% of all children in the United States) who are affected by parental incarceration (Murphey & Cooper, 2015). Including any type of imprisonment history (rather than only current incarceration) more than triples the number of children affected by parental incarceration. Further, this number only includes parents who resided with the child at some point in time in the child's life. Due to this, the actual number of children in the United States who have experienced parental incarceration of a parent, regardless of living arrangements, certainly exceeds 5 million. In fact, estimates from the 2016 – 2017 National Survey of Children's Health propose that 5,411,695 children have a history of a parent being jailed (Child and Adolescent Health Measure Initiative, 2017)¹. Whether using either past or current parental

¹ This nationwide survey was conducted by the U.S. Census Bureau and is funded and directed by both the Health Resources and Services Administration (HRSA) and the Maternal and Child Health Bureau

incarceration, the number of children affected by parental incarceration in the United States is alarming.

Cause for further concern is the racial differences in children who are impacted by a parent being in either state or federal prison. According to some estimates, most of the children who are affected by parental incarceration are Black (767,400) (Glaze & Maruschak, 2010). Black children are about seven and a half times more likely than White children to have an incarcerated parent. About 6.7% (or 767,400) of all Black children in the United States have an incarcerated parent as of mid-2007 estimates. Hispanic children are also more likely than White children to have an incarcerated parent. About 2.4% of all Hispanic children in the United States (or 362,800) have an incarcerated parent, compared to .9% (or 484,100) of White children.

Aside from racial differences, there are also age differences among children who have an incarcerated parent, as seen in Tables 1 and 2. Female children who have an incarcerated parent in state prison tend to be older while most male children with an incarcerated parent in state prison are slightly younger. There are also more female children affected when considering parents in federal prison. There are more female children who have a parent incarcerated in federal prison (56.2%), compared to their male counterparts (50%), as seen in Table 2. Furthermore, according to the Survey of Inmates in State and Federal Correctional Facilities (Bureau of Justice Statistics, 2004), about 715,600 of children are expected to turn 18 while their parent remains incarcerated.

(MCHB). In order to estimate the number of children with a history of parental incarceration, one question was asked: “To the best of your knowledge, has this child ever experienced a parent or guardian spending time in jail?” No follow up questions about this experience were asked and there is no available information to discern which parent or guardian was jailed or when the jailing occurred.

When considering the effects of parental incarceration on children, age and gender of the child is important, but it is also important to consider the living conditions of the child prior to their parent's incarceration. For instance, it may be important to know whether an incarcerated parent was involved in the child's life prior to incarceration. Marital status could serve as an indicator of the child's living situation. Among state prisoners, most married inmates report being a parent compared to other groups (71%). About 64% of separated inmates also reported being a parent, compared to 55% of divorced inmates, 45% of single inmates (i.e., never married), and 36% of widowed inmates (Glaze & Maruschak, 2010). Federal prisoners report slightly different percentages, with separated inmates most likely to report being a parent, followed by married inmates.

However, a better indicator of the child's living situation prior to parental incarceration may be self-reported data from parents themselves. According to the Survey of Inmates in State and Federal Correctional Facilities (Bureau of Justice Statistics, 2004), about 55.3% of mothers reported living with at least one of their children in the month prior to their arrest. Most of these mothers reported living in a single-parent household (41.7%), while just 13.6% of mothers reported living in a two-parent household. On the other hand, fewer fathers reported living with a child prior to their arrest. Roughly 35.5% of fathers reported living with at least one child in the month before their arrest. Of these fathers, 17.2% reported being in a single-parent household and 18.3% reported being in a two-parent household. In sum, there are stark differences in household composition based on gender. Mothers are more than twice as likely to be the sole parent in a household (42%) prior to their arrest compared to fathers (17.2%).

The same is true of mothers entering federal prison. That is, they are more likely than fathers to be the sole parent in the household. Women entering federal prison report being a single parent household 52% of the time, compared to men who report being a single parent household 19% of the time.

As alluded to above, an important consideration regarding the potential negative consequences of parental incarceration is which parent serves as the child's primary caregiver. Although it may follow that a parent who reports living in a single-parent household serves as the primary caregiver, there is the possibility that another adult figure serves as the primary caregiver. For that reason, it is important to review which person is typically a child's primary caregiver during the time a parent is incarcerated. According to the most recently available data in 2004 (Glaze & Maruschak, 2010), 77% of mothers reported being the primary caregiver for their children just prior to incarceration, compared to 26% of fathers. When a father becomes incarcerated, they are most likely to report that the other parent was the current caregiver for a child prior to their incarceration. Mothers generally assume the responsibility of child rearing when a father is incarcerated but when a mother is incarcerated, children may be placed in foster care which may lead to negative outcomes for children (Beckerman, 1994; Bloom & Steinhart, 1993). Children that are not placed in foster care are often cared for by their maternal grandparents, rather than with their fathers (Beckerman, 1989; Dressel & Barnhill, 1994). Rather than relying on fathers to assume caretaking responsibility in the event a mother is incarcerated, mothers most often turn to grandparents, specifically grandmothers (Glaze & Maruschak, 2010). Only about 37% of incarcerated mothers report the father to be the current caregiver in their absence, compared to 88.4% of

incarcerated fathers who report the child's mothers to be their child's caregiver during their absence (Glaze & Maruschak, 2010).

Despite the caregiver involved in a child's life however, there are financial responsibilities that also accompany raising a child and should be considered when exploring the consequences of parental incarceration. It could be that, while a female parent served primarily as a caregiver, a male parent solely provided financial support for minor children. The opposite could also be true. Unfortunately, the available data are less clear about these differences, reflecting that there is not a large gender difference among incarcerated parents and financial support for children. About half (51.9%) of female prisoners reported being the primary financial support for their children prior to their incarceration compared to 54.1% of men (Glaze & Maruschak, 2010). Considering that men are incarcerated at higher rates however, the financial impact of men being incarcerated likely has more of a negative impact on children compared to women regardless of a roughly even split of financial responsibility among male and female parents. Also, a vast majority of incarcerated parents report being employed prior to their incarceration (80%), indicating that with parental incarceration comes an evident loss of finances to their children despite which parent is incarcerated (Glaze & Maruschak, 2010).

There are other specific changes a child may experience following the incarceration of a parent. As discussed below, these are possible mediators, or mechanisms, between parental incarceration and subsequent offending.

First, when a parent is incarcerated, it may impact the perception of their children. More specifically, the attitudes and beliefs of a child may change as parental

incarceration serves as an adverse childhood experience (Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, & Marks, 1998). There may be differential effects for children with some children seeing an incarcerated parent as an indication that bad behavior leads to consequences, thereby inhibiting future delinquent behavior. It could also be that case however that a child could view the behavior as acceptable since their parent is modeling that behavior. If an adolescent has knowledge of their parent being punished after committing an offense and being caught, it follows that they are less likely to offend in the future due to deterrence principles. It could also be that children are less likely to offend following parental incarceration, which would be expected according to rational choice theory. However, as suggested by Stafford and Warr (1993), it can be expected that adolescents who have no or limited direct experience with punishment and/or punishment avoidance (i.e., the adolescents in Study 1 or the community sample) will be more deterred from offending than adolescents with their own experiences with punishment and punishment avoidance (i.e., the adolescents in Study 2 or the at-risk sample). Although deterrent effects are expected to be evident in both samples, it could be that parental incarceration is more consequential (in terms of reducing crime), for adolescents in a community sample. However, it could also be the case that children believe their parent's punishment is unfair and begins to offend in accordance with defiance theory (Sherman, 1993). Since this is unclear in current studies, the current studies will consider how parental incarceration impacts antisocial beliefs and neutralization of antisocial behavior in two different samples of adolescent children.

Because school plays a large role in children's lives, the effect of paternal and maternal incarceration has also been examined in relation to school outcomes. Parental

incarceration is generally associated with negative outcomes at school such as academic failure and dropping out of school (Trice & Brewster, 2004; Murray et al., 2012), poor behavior and attendance in school (Stanton, 1980), less engagement in school (Cochran, Siennick, & Mears, 2018), decreased levels of school readiness (Haskins, 2014) and a higher likelihood of failing (Trice & Brewster, 2004; Murray & Farrington, 2008). Further still, youth who do not drop out of school are less likely to pursue a college education (Foster & Hagan, 2009; Hagan & Foster, 2012). It is evident that effects surrounding and at school are both broad and important. While it is difficult for studies to show a causal connection as each study has its own limitations when considering the other risk factors children with incarcerated parents commonly share, there remains aspects of school that have largely remain unexplored. Although neither of the studies presented here can overcome the methodological limitations in previous studies, the studies presented here are able to offer some perspective to the growing literature on how parental incarceration affects *school connectedness*, specifically focusing on how children feel connected and bonded to their school experience (see Cochran, Siennick, & Mears, 2018). The impact of parental incarceration on the school domain is vast and require further investigation.

Another influential domain in a child's life that could be impacted by parental incarceration is their social network, specifically their peers. It is plausible that for some children, parental incarceration may not affect their peer network as much because this behavior is part of their subculture (see Schneller, 1978). In other words, the stigma of an incarcerated parent may not affect the experiences of an at-risk sample of adolescents compared to a community sample because the negative implications of incarceration are

not associated with them or their incarcerated parent in a negative manner. Instead, it could be viewed as a social prejudice that is expected and therefore there is little impact on their peer associations. For other youth (such as those in a community sample), an incarceration may serve as a negative event. Some adolescents may suffer from the negative effects of parental incarceration, as this experience is a deviation from the social norm among their peers. For these youth, antisocial peers may have a more criminogenic effect. As such, this is an important mediator to examine when considering the impact of parental incarceration on youth.

Additionally, the parent-child dyad has been a focus of research when examining the effects of parental incarceration (Myers, Smarsh, Amlund-Hagen, & Kennon, 1999; Poehlmann, 2005). This is a crucial point of investigation as there is clear evidence that parental influence over children is consequential for development and those influences tend to impact developmental outcomes in similar ways (Fagan, Day, Lamb, & Cabrera, 2014). For example, it is possible that a parental incarceration of either a mother or father leads to a traumatic separation (Brown, Dibb, Elson & Shenton, 2001; McDermott & King, 1992). Studies have indicated that children of incarcerated parents often feel sad and report missing their parents (Boswell & Wedge, 2002; Kampfner, 1995). However, it may also be possible that some children experience no loss or little impact on the parent-child relationship if a parent becomes incarcerated, especially for younger children who have less attachment toward their parents (see Poehlmann, 2005). Regardless, as might be expected, mothers are more likely to keep in contact with their children following incarceration with letter writing being the primary form of contact, followed by phone calls, and lastly by face-to-face visits (Glaze & Maruschak, 2010). As the

sentence length of the parent increases however, parent-child contact generally tends to decrease (Smith, Blackburn, Harris, & Mullings, 2021). In addition to limited contact and its impact on the parent-child relationship, parental monitoring is also affected as being incapacitated impacts a parent's ability to be present in their children's lives. Because of the nuances involved in parental incarceration and the impacts on both attachment and monitoring, it is important to further examine these factors.

In sum, parental incarceration might affect children through a variety of mechanisms (Murray, Loeber, & Pardini, 2012). This area is particularly important to study due to the high population of incarcerated individuals in the United States. Although the exact number of children in the United States who have been affected by parental incarceration is unknown, recent estimates report about 5 million children have experienced imprisonment of a parent (Murphey & Cooper, 2015), which is concerning as parental incarceration may lead to a host of problems for adolescents. Further, these problems can cause lasting negative consequences for children and may place youth at a higher risk for being involved in an intergenerational cycle of a life of crime. Whether a father is incarcerated, or it is a mother that is incarcerated, both parents contribute to the development of a child and therefore both parenting roles must be considered (Cabrera, Volling, & Barr, 2018). Unfortunately, as with many other criminal justice issues, racial and gender disparities among affected children exist as well. Investigating these consequences should also be considered when examining the negative impact of parental incarceration on children.

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II. STUDY 1: LINKING PARENTAL INCARCERATION TO ADOLESCENT OFFENDING: EXAMINING MEDIATING FACTORS

Keywords: delinquency, antisocial behavior, mediation, families, parenting

Abstract

The United States incarcerates a greater proportion of individuals than any other industrialized country (Walmsley, 2016), leading to several negative consequences for their children. Parental incarceration can lead to changes in behavior and affects peer networks, school connectedness, and parental monitoring and attachment. The current study seeks to identify how these domains are impacted by parental incarceration and whether, in turn, adolescent offending is impacted. The findings of this study suggest that parental incarceration results in more antisocial beliefs, neutralization, and antisocial peers. In addition, parental incarceration decreases school bonds, maternal and paternal attachment, and parental monitoring. Adolescents with lower levels of self-control also commit more crime than their counterparts. The relationship between parental incarceration and offending is mediated by antisocial beliefs, neutralization, school bonds, delinquent peers, paternal attachment, and maternal monitoring.

Introduction

Following a period in which crime rates began to increase in the 1960s and peak in the 1990s, the United States preceded to imprison an unprecedented number of individuals. The total U.S. correctional population peaked in 2007 with 3,210 per 100,000 U.S. adult residents being supervised by the adult correction system (Kaeble & Cowhig, 2018). Since this peak in 2007, the total number of individuals under supervision by the U.S. adult correctional system has gradually decreased. The

incarceration rate peaked later, reaching a high of 1,000 per 100,000 from 2006 – 2008 then declining to 980 per 100,000 in 2009 (Kaeble & Cowhig, 2018). As of 2016, the adult incarcerated population has decreased to 860 per 100,000 U.S. adult residents (Kaeble & Cowhig, 2018). However, although the United States' incarceration rate has steadily declined since 2009, the United States continues to incarcerate a greater proportion of individuals compared to any other industrialized country (Walmsley, 2016). A population that remains affected by the high incarceration rate in the United States is the children of these incarcerated individuals and it remains true that “by getting tough on crime, the United States has gotten tough on children” (Phillips & Bloom, 1985, p. 539).

Most recent estimates from 2007 report that over 1.5 million children in the United States (or 2.3% of all children in the United States) are affected by the current incarceration of a parent (Glaze & Maruschak, 2010). This includes about 744,200 fathers and 65,600 mothers (Bureau of Justice Statistics, 2004). Further, when expanding parental incarceration to past imprisonment history (rather than only current incarceration estimates), estimates increase to about 5 million children being affected by parental incarceration (or 7% of all children in the United States) (Murphey & Cooper, 2015). Additionally, the estimate of 5 million includes only children whose parents resided with them at some point during their life. It is anticipated that when examining any history of parental incarceration, regardless of whether the parent lived with their child at some point, there are many more children affected by parental incarceration that can currently be calculated with available data. Due to the host of negative outcomes associated with a child with an incarcerated parent (Cochran, Siennick, & Mears, 2018; Dallaire, Ciccone, & Wilson, 2012; Foster & Hagan, 2013; Murray, Loeber, & Pardini, 2012; Murray &

Farrington, 2008) and the high rate of incarceration in the United States, the number of children affected is a concern.

Since the United States' incarcerated population is largely male, it is anticipated that more children will experience having an incarcerated father, as opposed to an incarcerated mother. Using data from the Bureau of Justice Statistics, estimates confirm that as of mid-2007, more fathers (744,200) were incarcerated compared to mothers (65,600). Consequently, many studies focus on the incarceration of fathers but examining maternal incarceration is important as well because children with incarcerated mothers face more risks than children with incarcerated fathers (Hagan & Dinovitzer, 1999; Johnson & Waldfogel, 2002; Koban, 1983). The incarceration of a primary caregiver may also affect a child more than the incarceration of less involved parent and mothers continue to be incarcerated at higher levels than the past (Bureau of Justice Statistics, 2015). Therefore, examining parental incarceration in general remains important as both relationships are important and can lead to changes in the attitudes and beliefs of a child (Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards, & Marks, 1998), emotional and behavioral problems (Poehlmann & Eddy, 2010; Turney, 2014), delinquency, and substance abuse (Bor, McGee, & Fagan, 2004; Huebner & Gustafson, 2007; Murray & Farrington, 2008; Phillips et al., 2002; Roettger, Swisher, Kuhl, & Chavez, 2011). Parental incarceration places children at an increased likelihood for delinquency (Bryant, Rivard, Addy, Hinkle, Cowan, & Wright, 1995; Stanton, 1980; Murray & Farrington, 2005; Geller et al. 2011; Huebner & Gustafson 2007; Bor, McGee, & Fagan 2004; Stanton, 1980; Trice & Brewster, 2004; Farrington et al., 2001) and has a

large effect on youth offending, predicting both minor offending and major offending (Bryant et al., 1995).

In addition, because parental incarceration serves as a risk factor for school failure (Murray & Farrington, 2008), there has been some focus on whether parental incarceration is associated with various negative outcomes at school. Parental incarceration has been linked to decreased levels of school readiness (Haskins, 2014), a lower likelihood of entering college (Foster & Hagan, 2009; Hagan & Foster, 2012), dropping out of school (Trice & Brewster, 2004), failing classes (Trice & Brewster, 2004; Murray & Farrington, 2008), lower grade average (Hagan & Foster, 2012) and poor attendance (Stanton, 1980). More recently, Cochran, Siennick, and Mears (2018) found that children with incarcerated parents participate less in school clubs, have more trouble with their peers and teachers at school, and lack a sense of belonging at school. Due to these results, other studies have emphasized ways to mitigate the negative effects of parental incarceration on school-related issues. Some studies found that students are more likely to remain enrolled in school and less likely to be suspended from school if they are provided with weekly contact with their incarcerated mother through visits, telephone, or by mail (Trice & Brewster, 2004). Further, Hagan & Foster (2012) found that students who felt close to their incarcerated father had higher grade point averages. Thus, maintaining contact with and emotional attachment to an incarcerated parent can diminish compromised aspects on one's educational problems. However, it has yet to be determined whether school bonds, per se, mediate the effects of parental incarceration on adolescents. While previous literature suggests this might be true, to date, there has not been research to indicate that parental incarceration impacts school bonds.

The role of parenting has been heavily researched and there is strong support that parenting shapes juvenile conduct problems (Gottfredson & Hirschi, 1990; Hoeve et al., 2009; Hoeve et al., 2012; Loeber & Stouthamer-Loeber, 1986;). Two of the most influential parental factors that have been considered are emotional bonds (or attachment) as well as parental monitoring (Loeber & Dishion, 1983; Loeber & Stouthamer-Loeber, 1987). When attachment and consequently, affective bonds, are high, juveniles are less likely to exhibit delinquent behavior. Alternatively, when bonds are weak, adolescent will be more likely to commit crime. When a parent is incarcerated however, it is somewhat unclear how either of these factors might be affected. As mentioned above, the parent-child dyad has been a focus of research when examining the effects of parental incarceration (Myers, Smarsh, Amlund-Hagen, & Kennon, 1999; Poehlmann, 2005). There have been examinations of the incarcerated parent-child relationship using proxies such as videos, letters, and e-mails but the results are complex as some studies indicate interaction can be beneficial in some respects but harmful in others. For instance, contact in the form of letters is linked to higher attachment (Tuerk & Loper, 2006) and better behavior in school (Dallaire, Ciccone, & Wilson, 2010), but children can also react negatively to a video message if their parent is in a negative mood during recording (Folk, Nichols, Dallaire, & Loper, 2012). Disentangling the effects of parenting is also difficult because children of incarcerated parents are typically already at a disadvantage prior to their parent's incarceration (Dannerbeck, 2005). Due to the many factors that may affect outcomes for children on incarcerated parents, there has been recent focus exploring mediators between parental incarceration and adolescent offending. Antle et al. (2019) found that parental stress mediates the relationship between parental

incarceration and child outcomes. Emory (2018) also found that a father's family engagement, household resources, and maternal parenting stress mediate the relationship between parental incarceration and externalizing behavior; however, there remain few examinations of how parental incarceration impacts antisocial behavior.

Current Study

The current study will attempt to add to the current literature by examining whether certain mechanisms mediate the effect of parental incarceration on adolescent offending as outlined below (see Figure 1):

Research Question 1: Using a community sample of adolescents, is parental incarceration associated with adolescent offending?

Research Question 2: It is hypothesized that after controlling for demographics and self-control, parental incarceration will be associated with:

Research Question 2.1: increased antisocial beliefs;

Research Question 2.2: more neutralization of antisocial behavior;

Research Question 2.3: decreased involvement in school;

Research Question 2.4: more antisocial peers;

Research Question 2.5: decreased parental bonds (i.e., less attachment)

Research Question 2.6: decreased parental monitoring.

Research Question 3: It is hypothesized that after controlling for demographics and self-control, each of the following will be associated with adolescent offending:

Research Question 3.1: increased antisocial beliefs;

Research Question 3.2: more neutralization of antisocial behavior;

Research Question 3.3: decreased involvement in school;

Research Question 3.4: more antisocial peers;

Research Question 3.5: decreased parental bonds (i.e., less attachment);

Research Question 3.6: decreased parental monitoring.

Research Question 4: Do the following factors serve as mediators between parental incarceration and adolescent offending:

Research Question 4.1: increased antisocial beliefs;

Research Question 4.2 more neutralization of antisocial behavior;

Research Question 4.3: decreased involvement in school;

Research Question 4.4: more antisocial peers;

Research Question 4.5: decreased parental bonds (i.e., less attachment);

Research Question 4.6: decreased parental monitoring.

Methods

Data

The Rural Substance Abuse and Violence Project (RSVP) was a prospective longitudinal study of a panel of students in urban and rural areas of Kentucky. Data collected includes substance use, criminal victimization, and criminal offending. Participants were first selected by a stratified sample of 30 out of 120 counties in Kentucky. Once the counties were selected, each principal of the public schools in each county that had 7th grade students were asked to participate in the study, with the majority of principals agreeing (65 out of 74 principals agreed). All students in the schools selected were targeted for inclusion in the sample, for a total of 9,488 students.

Consent letters were mailed to all 9,488 parents of potential student participants using the “Dillman method” (Dillman, 1978). Parents who did not respond to this initial

mailing were then mailed a reminder postcard approximately two to three weeks after the initial consent form was mailed. Two additional attempts were made to obtain consent after this, specifically a new cover letter and consent form sent four to five weeks after the initial form and, lastly, a final cover and response form sent eight weeks after the initial mailing (Wilcox et al., 2009). Parental consent was ultimately obtained for 4,102 students, which is a 43% response rate and falls within the range of response rates among other studies which utilize active parental consent (Esbensen, Deschenes, Vogel, West, Arboit, & Harris, 1996). Previous analyses have concluded the attrition in this sample was not related to race, gender, or other basic demographics (see Ousey & Wilcox, 2007); however, victimization was found to be linked to attrition with victims being slightly more likely to drop out of the study compared to non-victims (Wilcox, Tillyer, & Fisher, 2009).

Data collection began in the spring of 2001, when participants were in the seventh grade. Follow-up surveys were then conducted during the spring of each subsequent year for three years (i.e., 2002, 2003, and 2004). At Wave 1, surveys were distributed and completed by 3,692 students. At Wave 2, 3,638 students completed follow-up surveys; 3,050 students completed follow up surveys at Wave 3. At the final wave (Wave 4), 3,040 students completed follow-up surveys. Researchers scheduled dates to visit the school and collect data on a specific day and time. Students completed the surveys either in class, or in another school setting (e.g., the library). Regardless of location, the surveys were completed in a group setting. Researchers remained on site to provide assistance when necessary. Although teachers were sometimes present as well, the surveys were administered such that each student's responses were confidential. Missing

data were largely due to students transferring out of the school after parental consent was obtained and students being absent from school on the day the follow-up surveys were distributed. Less than 1% of the missing data were due to students who refused to participate in the study.

Sample for Analysis

This study examines data from Waves 2, 3, and 4 in order to both capture subjects during adolescence and to ensure temporal ordering. Data from Wave 2 were used to measure the control variables and parental incarceration while data from Wave 3 were used to measure the mediating variables. Data from Wave 4 were used to measure offending.

Dependent Variable: Self-Reported Delinquency

Individuals tend to commit a variety of criminal acts, known as generality of deviance (Hirschi & Gottfredson, 1994; Farrington, 1982; Farrington, Synder, & Finnega, 1988; Gottfredson & Hirschi, 1990). Due to this reason and because variety scores are known to be more reliable estimates of offending variety of offending is used as the outcome variable in this analysis and is measured at Wave 4. Respondents were asked to self-report how often they had participated in certain delinquent activities in the present school year including drug and alcohol use, skipping school, theft, assault, and vandalism. The outcome measure ranged from 0 to 16 before taking the natural log and dropping missing cases. On average, respondents in the full sample reported committing about 2.48 distinct types of offenses ($SD = 2.98$). Approximately 31.72% of the full

sample reported that they did not engage in any of the offenses. The internal reliability (Cronbach's alpha) of the final 16-item measure of offending was good² ($\alpha = .85$).

Independent Variable: Parental Incarceration

Parental incarceration is a dichotomous measure and was measured at Wave 2 with one item asking the respondent whether one of his or her parents have ever been in jail or prison. At Wave 2, the majority of respondents (73.48%) indicated that neither of their parents has ever been in jail or prison. Approximately 26.52% of the sample at Wave 2 reported either their mother or father being in jail or prison. As this item was combined during the original data collection, maternal and paternal incarceration cannot be examined separately. Instead, this item reflects any type of history of parental incarceration and could reflect either current or past incarceration of a mother, father, or both. Those who responded affirmatively were coded "1" while those who did not report a history of parental incarceration serve as the reference category (coded as zero).

Mediators

Antisocial Beliefs

Data from Wave 3 were used to measure antisocial beliefs. Each respondent was asked to mark their feelings about how wrong it is for someone their age to participate in various activities, with original response options ranging from 1 (not wrong at all) to 4 (very wrong). Responses were reverse coded so that higher scores could indicate greater antisocial beliefs. A scale was created using the following 12 items: 1.) cheat on school tests; 2.) purposely damage or destroy property that does not belong to him or her; 3.) use marijuana; 4.) steal something worth \$10 or less; 5.) hit or threaten to hit someone

² While there are conflicting reports regarding the acceptable value of alpha, a value of .70 is generally acceptable (see Nunnally, 1994; Bland and Altman, 1997; DeVellis, 2003).

without any reason; 6.) use alcohol; 7.) break into a vehicle or building to steal something; 8.) sell drugs such as marijuana, heroin, cocaine, and LSD; 9.) steal something worth more than \$10; 10.) use hard drugs such as heroin, cocaine, LSD; 11.) carry a gun to school; and 12.) carry a knife or other (non-gun) weapon to school. The antisocial beliefs scale ranges from 12 to 48, with the average respondent reporting a score of 18.27 (SD = 8.03). The most frequent score was a 12, with approximately 20.26% of the sample reporting this score. The internal reliability of the scale is within acceptable with a Cronbach's alpha of about .94.

Neutralization

Data from Wave 3 were used to construct the neutralization measure. There are eight statements used to measure neutralization, including: 1.) In order to gain respect from your friends, it is sometimes necessary to beat up on other kids, 2.) It's alright to beat up another person if he/she called you a dirty name, 3.) It's alright to beat up another person if he/she started the fight, 4.) Hitting another person is an acceptable way to get him/her to do what you want, 5.) It's okay to break the law if you can get away with it, 6.) To get ahead, sometimes you have to do things that seem wrong, 7.) Most things that adults call "crime" don't really hurt anyone, and 8.) It's okay to break the law if nobody is hurt by it. Respondents were asked how strongly they agreed about these statements, with 1 indicating 'strongly disagree' and 4 indicating 'strongly agree'. This measure was coded so that higher scores indicate a greater degree of acceptance of deviant behavior. The internal reliability of this measure was acceptable ($\alpha = .87$). Neutralization scores ranged from 8 to 32, with 13 being the average score (SD = 5.23).

School Bonds

Five questions from Wave 3 were used to measure school participation. Questions asked respondents how strongly they agreed or disagreed about the following statements about school: 1.) I care a lot what my teachers think of me; 2.) Getting an education is important to me; 3.) I would quit school now if I could; 4.) Most of my classes are a waste of time; and 5.) I look forward to coming to school most mornings. Response options ranged from 1 ('strongly disagree') to 4 ('strongly agree'), with items coded for higher scores to indicate a greater degree of school bonds. Scores ranged from 5 to 20, with the average respondent scoring approximately 15.85 (SD = 2.85) and the most common score being 18. The internal reliability of this composite fell slightly below conventional cutoffs with a Cronbach's alpha of .69.

Delinquent Peers

The delinquent peer scale was taken from 22 questions asked about the respondents' peers at Wave 3. Respondents were asked how often in the present school year their closest friends engaged in a variety of delinquent and/or criminal acts. Item scores ranged from 1 (None) to 5 (All). Once dichotomized and summed, this measure ranged from 0 to 22, with an average score of 6.58 (SD = 5.50).

Parenting

Attachment. Data from Wave 3 were used to measure maternal and paternal attachment. A scale was created for both maternal and paternal attachment using 4 items. Respondents were asked how often the following items occur with their mother or father, even if their mother or father did not live with them: 1.) makes me feel wanted; 2.) share my thoughts and feelings; 3.) do things (example: watch TV, go to sports events, go to

dinner, and so on); and 4.) talk to my [mother/father]. Responses ranged from 1 ‘never’ to 5 ‘always’, with higher scores indicating higher maternal or paternal attachment.

Both maternal and paternal attachment ranged from 4 to 20. The average level of maternal attachment was 15.34 (SD = 3.71), while the average level of paternal attachment was slightly lower at 13.96 (SD = 4.62). The internal reliability of both the maternal and paternal attachment scales were acceptable (maternal attachment $\alpha = .85$; paternal attachment $\alpha = .90$) and are used as two separate scales in the current analysis.

Monitoring. Two items from Wave 3 were used to create a scale for both maternal and paternal monitoring. These items asked the respondent to indicate how often certain things happen, ranging from 1 (never) to 5 (always). The items in this scale are: 1.) My [mother/father] knows where I am when I am away from home; and 2.) My [mother/father] knows who I am with when I am away from home. Higher scores on both scales indicate a greater level of monitoring from the respective parent. Both maternal and paternal monitoring range from 2 to 10 and both scales share a modal score of 10. On average, respondents report a score of 8.43 (SD= 1.96) for maternal monitoring and 7.03 (SD = 2.74) for paternal monitoring; indicating that monitoring is slightly higher among mothers. Due to the two-item scales, the Spearman-Brown coefficient was used as it is, on average, less biased than other estimates (Eisinga, Grotenhuis, & Pelzer, 2013). Both scale reliabilities are sufficient with a rho of .75 and .91 for maternal and paternal monitoring, respectively. Both scales are used separately in the current analysis.

Control Variables

To estimate the unique effect of the variables of interest in this study, this analysis includes several control variables. Race, gender, and self-control are used as controls and are measured at Wave 2. Most of the sample consisted of White students ($n = 1265$, 91.80%). Due to the majority of the respondents being White, they serve as the reference category compared to 'Blacks' and 'Others' (which includes Asians, Hispanics, Natives and individuals who identify as biracial, specifically 'Black and White'). The final sample consisted of 660 females (47.90%) and 718 males (52.10%). Females serve as the reference group for gender.

Self-control is also a control variable made of 11 items ($\alpha = .89$). The original items asked respondents to report how often they experienced behavior such as trouble controlling their temper, being nervous or on edge, and difficulty staying on task and ranged from 1 'Never True' to 4 'Always True'. The original items were reverse coded so that higher scores indicate more self-control. The scores ranged from 13 to 44 with an average score of 32.87 ($SD = 6.09$) indicating generally high levels of self-control.

Descriptive Statistics

The initial sample size consisted of 3,968 students. However, due to many respondents missing data throughout the survey, listwise deletions were made to the dataset to generate a final sample size of 2,154 students. Descriptive statistics are presented in Tables 3 and 4.

Analytic Strategy

The purpose of this study is to understand the potential relationship between parental incarceration on subsequent adolescent offending through the examination of

several mediators. To address these research questions, a series of regression analyses will be conducted using PROCESS models (Hayes, 2012). In the PROCESS models, which is a macro available in various statistical programs which has a path analysis framework (Edwards & Lambert, 2007), a series of OLS regressions will be conducted. In addition, direct and indirect effects will be calculated. PROCESS allows for a variety of models to be conducted. For the current analyses, an unmoderated mediation model will be conducted which corresponds to PROCESS model 4. Mediators will be allowed to covary meaning that the models will be parallel multiple mediators models. Although PROCESS allows for other specifications to be set, confidence intervals will be set at 95%.

Results

Table 5 presents the correlations among the current study variables³ while Table 6 presents the means for the independent, dependent, and mediating variables in this analysis. About 23% ($n = 490$) of the sample reported that at least one of his or her parents have experienced being in jail or prison. Independent samples t-test were also run to determine if there were any differences across the mediating variables when experiencing parental incarceration (see Table 6). Those with an incarcerated parent had significantly higher levels of antisocial beliefs ($t = -4.18, d = -.27, p < .001$), neutralization of antisocial behavior ($t = -6.28, d = -.34, p < .001$), and delinquent peers ($t = -7.94, d = -.45, p < .001$) compared to those had not experienced parental incarceration. Those with a history of parental incarceration also reported significantly lower school

³ The relationship between maternal attachment/monitoring ($r = .53, p < .001$) as well as between paternal attachment and parental monitoring ($r = .68, p < .001$) was moderate. Collinearity diagnostics determined collinearity is not an issue as the Variance Inflation Factors were each under 5.0.

bonds ($t = 6.21, d = .34, p < .001$), maternal attachment ($t = 5.18, d = .29, p < .001$), paternal attachment ($t = 8.36, d = .49, p < .001$), maternal monitoring ($t = 4.68, d = .31, p < .001$), and paternal monitoring ($t = 8.64, d = .50, p < .001$).

Next, PROCESS models were run without any control variables (see Figure 4, Table 7). As a whole, the model significantly predicts offending ($F_{(9, 2,144)} = 115.73, p < .001$) and predicts approximately 32.7% of the variation in offending. The effect of parental incarceration on offending was not significant ($b = .06, SE = .03, t = 1.74$). Additionally, increases in antisocial beliefs ($b = .01, se = .00, p < .001$), neutralization ($b = .03, se = .00, p < .001$), and delinquent peers ($b = .03, se = .00, p < .001$) increase offending. Increases in school bonds ($b = -.02, se = .01, p < .001$), paternal attachment ($b = -.01, se = .00, p < .05$), and maternal monitoring ($b = -.06, se = .01, p < .001$) lead to less offending. Maternal attachment and paternal monitoring did not predict offending ($b = .01, se = .01, t = 1.18; b = -.01, se = .01, t = -1.53$).

Next, the total, direct and indirect effects of an incarcerated parent on offending were examined prior to the additional of covariates (see Table 8, Figure 4). Indirect effects (the product of paths a' and b' for each mediator) were tested using nonparametric bootstrapping and were significant for all mediators except for maternal attachment and paternal monitoring. The total indirect effects (or the sum of each indirect effect) of parental incarceration on offending is .2334 and is also statistically significant (95% CI, [.186, .283]) while the direct effect of parental incarceration on offending (c') is .0583 and is significant at the .10 level but fails to meet the conventional cutoff of significance at $p < .05$ (95% CI, [-.008, .124]).

PROCESS models were then examined with the addition of covariates (See Figure 5, Table 9). Results were similar to the uncontrolled model in that the model significantly predicted offending ($F_{(17,1893)} = 55.60, p < .001$). As in the uncontrolled model, parental incarceration did not predict offending ($b = .05, se = .04, t = 1.37$) but antisocial beliefs ($b = .01, se = .00, p < .001$), neutralization ($b = .03, se = .00, p < .001$), and delinquent peers ($b = .03, se = .00, p < .001$) significantly and positively predict offending. Further, increases in school bonds ($b = -.02, se = .01, p < .01$), paternal attachment ($b = .01, se = .01, p < .05$), maternal monitoring ($b = -.06, se = .01, p < .001$), and self-control ($b = -.01, se = .00, p < .001$) significantly decreased future offending. Maternal attachment and paternal monitoring did not predict offending ($b = .00, se = .00, t = .54; b = -.01, se = .01, t = -.80$).

Total, indirect, and direct effects were calculated next with control variables as seen in Table 10 and Figure 5. The total indirect effect of parental incarceration on offending (which is the sum of the indirect effects) was significant at (Total Effect = .163, 95% CI, [.118, .209]).⁴ As in the uncontrolled model, the indirect effects (which is the product of a' and b')⁵ were significant for each of the mediators except for maternal attachment and parental monitoring. There were also significant direct effects of parental incarceration on each of the mediators and significant direct effects from the mediators to offending (see Figure 5). Parental incarceration had a positive direct effect on antisocial beliefs ($b = 1.32, se = .40, p < .05$), neutralization of antisocial behavior ($b = 1.17, se =$

⁴ There are two schools of thought on whether this effect must first be significant in order to evaluate further effects. Although significant here, the approach taken is that of Hayes & Rockwood(2017) in that this is not a requirement to evaluate other mediating effects rather than the approach of Baron & Kenny (1986).

⁵ Results shown in tables for total, direct and indirect effects are prior to rounding; however, other tables shown are rounded and will not result in the same product due to rounding of the regression coefficients to the nearest hundredth of a digit.

.26, $p < .001$), and delinquent peers ($b = 1.79$, $se = .30$, $p < .001$). Parental incarceration had a negative direct effect on school bonds ($b = -.68$, $se = .14$, $p < .001$), maternal and paternal attachment ($b = -.80$, $se = .20$, $p < .001$; $b = -1.78$, $se = .24$, $p < .001$), and maternal and paternal monitoring ($b = -.38$, $se = .10$, $p < .001$; $b = -1.16$, $se = .15$, $p < .001$). In turn, the following mediators had a positive direct effect on offending: antisocial beliefs ($b = .01$, $se = .00$, $p < .001$), neutralization ($b = .03$, $se = .00$, $p < .001$), and delinquent peers ($b = .03$, $se = .00$, $p < .001$). Mediators that had a direct negative effect on offending included school bonds ($b = -.02$, $se = .01$, $p < .01$), paternal attachment ($b = -.01$, $se = .00$, $p < .05$), and maternal monitoring ($b = -.06$, $se = .01$, $p < .001$). The direct effect of parental incarceration on offending (c') was not significant (95% CI, $[-.021, .119]$).

Discussion & Conclusion

There is a vast literature that finds that parental incarceration is associated with a host of negative outcomes for children, however, there have been calls for research into the mechanisms behind this process (Murray & Farrington, 2008). This study draws attention to the experiences of adolescents from a community sample who have self-reported a history of parental incarceration.

The findings of this study suggest that a variety of negative outcomes occur following the incarceration of a parent. Parental incarceration results in more antisocial beliefs, neutralization, and antisocial peers. In addition, parental incarceration leads to less school bonds, maternal and paternal attachment, and parental monitoring. Adolescents with lower levels of self-control also commit more crime than their counterparts. Based on the controlled PROCESS models in this analysis, there is also

evidence that parental incarceration has an impact on offending through antisocial beliefs, neutralization, school bonds, delinquent peers, paternal attachment, and maternal monitoring.

Although these findings add to the growing literature about which factors mediate the relationship between parental incarceration and offending, several limitations exist and there are areas for improvement in future research. First, responses for younger children are not captured. Future studies should continue to focus on various developmental periods and the impacts on future negative outcomes for children who experience parental incarceration. In addition, maternal and paternal incarceration was not able to be examined separately. Because research indicates outcomes could differ based on which parent is incarcerated (Wildeman & Turney, 2014) future studies should attempt to examine maternal and paternal incarceration separately should the data allow for such analysis.

Although research on the specific effects of parental incarceration on offending still needs more research, there is far less that is understood about the impact of incarceration of various family members on children (but see Brown, Bell, & Patterson, 2016; Lee, Porter, & Comfort, 2014). Future research should consider how different family members could impact children's future offending. There are also research opportunities in examining whether there are differences in outcomes for children if they experience not only the incarceration of only their mother or only their father but both parents or another combination of multiple family members being incarcerated. Relatedly, the length of jail or prison time was not able to be captured in the current analysis. Future examination should attempt to add this information to determine if the

specific timepoint of a parental incarceration serves as a moderator in the relationship between parental incarceration and future outcomes.

While the current analysis uses self-reported data, official records could provide different information. Future studies should strive to use both self-reported data and official records regarding parental incarceration if available. Future data collection should strive to also capture how much a child knows about their parent's incarceration to see if results differ based on the child's level of knowledge of a parent's incarceration. It is possible that the amount of knowledge a child has about parental or other familial incarceration acts as a moderator between incarceration and offending. In addition, the age of the child could act as a moderator so future studies could explore how the effects of parental incarceration could differ depending on the age of the child.

There is also an opportunity to examine how parental incarceration may differ from other types of parental separation such as military service, divorce, separation, and so on. To that end, living situation should be examined more closely as this could impact the relationship between parental incarceration and offending. It could be that living with a parent that is subsequently incarcerated has different effects on a child compared to a child that has only intermittently lived with their parent or who has never lived their parent. Relatedly, the mediator of parental monitoring needs closer examination because it is unclear at this point whether parental incarceration causes low monitoring or if a parent is simply not monitoring a child closely for other reasons (such as living situation).

Lastly, although the current analysis generally did not show more negative consequences for minority children and females, future research should continue to explore possible social inequities among children of incarcerated parents. It is important

to examine whether already disadvantaged populations such as minority children and children who reside in a lower socioeconomic households experience increased criminality stemming from parental incarceration. If this is the case, this will only compound the current issues with more inequities in our criminal justice system.

In conclusion, this study provided evidence that parental incarceration leads to a host of negative outcomes for children and these effects are mediated by antisocial beliefs, neutralization, school bonds, delinquent peers, paternal attachment, and maternal monitoring. Based on these findings, in addition to the conclusions of previous studies, there is a need to mitigate the negative effects of parental incarceration on children. Specifically, there should be programs available that foster prosocial behaviors in children as this study found that children of incarcerated parents are more likely to develop antisocial beliefs, which increased offending. Additionally, actively working toward fostering prosocial peers is important as delinquent peers was shown to mediate the relationship between parental incarceration and offending. It is also important that caregivers – whether that is the remaining parent or another family member or caregiver – support children as much as possible during and after parental incarceration because parental incarceration led to less school bonds. If there is intervention available to help ensure strong school bonds, this will deter children from offending based on the results of this study.

There should also be attempts to maintain the parent-child relationship as attachment and monitoring has generally been found to decrease future offending. Although parental incarceration in this study decreased parental attachment and monitoring, it was less clear how this then affects offending. That is, parental

incarceration negatively impacted attachment and monitoring, but attachment and monitoring itself did not clearly predict offending when considering both maternal and paternal attachment and monitoring. To truly inform policy changes, there first needs to be more research on “whether, when, and how parental incarceration has adverse impacts on children and families” (Cochran et al. 2018, p. 494) and for whom. Future research should consider whether the impacts of parental incarceration are different for at-risk children versus a community sample.

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Table 1. Percentage of Minor Children with a Parent in State Prison by Gender (2004).

Age of Minor Child	Percentage of Minor Children		
	Total	Male	Female
9 years or younger	52.6%	53.1%	47.4%
10-17 years	47.4%	46.9%	52.6%
Total	100%	100%	100%

Note: Data derived from Glaze, L. E., & Maruschak, L. M. (2008). *Parents in prison and their minor children*. Retrieved from <https://www.bjs.gov/content/pub/pdf/pptmc.pdf>.

Table 2. Percentage of Minor Children with a Parent in Federal Prison by Gender (2004).

Age of Minor Child	Percentage of Minor Children		
	Total	Male	Female
9 years or younger	49.6%	50%	43.8%
10-17 years	50.4%	50%	56.2%
Total	100%	100%	100%

Note: Data derived from Glaze, L. E., & Maruschak, L. M. (2008). *Parents in prison and their minor children*. Retrieved from <https://www.bjs.gov/content/pub/pdf/pptmc.pdf>.

Table 3. Descriptive Statistics for Full Sample: RSVP Study.

<u>Variable</u>	<u>N</u>	<u>Mean</u>	<u>SD</u>	<u>Range</u>
Dependent Variable Variety of Offending (logged)	2,938	.93	.79	0 - 2.83
Independent Variable Parental Incarceration	3,571	.27	.44	0 - 1
Mediators				
Antisocial Beliefs	2,972	18.27	8.03	12 – 48
Neutralization	2,979	13.16	5.23	8 – 32
School Bonds	2,997	15.85	2.85	5 – 20
Antisocial Peers	2,950	6.88	5.76	0 – 22
Maternal Attachment	2,930	15.34	3.71	4 – 20
Paternal Attachment	2,841	13.96	4.62	4 – 20
Maternal Monitoring	2,986	8.44	1.96	2 – 10
Paternal Monitoring	2,859	7.03	2.74	2 - 10
Valid N (listwise)	2,154			

Table 4. Descriptive Statistics for Final Sample: RSVP Study. (N=2,154)

<u>Variable</u>	<u>Mean</u>	<u>SD</u>	<u>Range</u>
Dependent Variable Variety of Offending (logged)	.90	.77	0 - 2.83
Independent Variable Parental Incarceration	.23	.42	0 - 1
Mediators			
Antisocial Beliefs	17.73	7.51	12 – 48
Neutralization	12.84	5.06	8 – 32
School Bonds	16.06	2.65	5 – 20
Antisocial Peers	6.58	5.64	0 – 22
Maternal Attachment	15.48	3.61	4 – 20
Paternal Attachment	14.18	4.47	4 – 20
Maternal Monitoring	8.56	1.86	2 – 10
Paternal Monitoring	7.13	2.70	2 - 10

Table 5. Correlations among Study Variables for RSVP Data, Listwise Deletion. (N= 2,154)

	ASB	Neu	SB	DP	MA	PA	MMon	PMon	PI	O
Antisocial Beliefs (ASB)										
Neutralization (Neu)	.31***									
School Bonds (SB)	-.36***	-.41***								
Delinquent Peers (DP)	.25***	.36***	-.30***							
Maternal Attachment (MA)	-.21***	-.23***	.37***	-.21***						
Paternal Attachment (PA)	-.11***	-.13***	.22***	-.19***	.34***					
Maternal Monitoring (MMon)	-.28***	-.29***	.36***	-.22***	.53***	.20***				
Paternal Monitoring (PMon)	-.16***	-.20***	.27***	-.24***	.26***	.68***	.36***			
Parental Incarceration (PI)	.10***	.14***	-.15***	.18***	-.12***	-.20***	-.11***	-.20***		
Logged Variety of Offending (O)	.32***	.43***	-.35***	.42***	-.25***	-.21***	-.34***	-.26***	.16***	

Note: *** = $p < .001$

Table 6. Independent Sample T-tests for RSVP Study. (N=2,154)

<u>Variable</u>	<u>No Parental Incarceration (n= 1,664)</u>	<u>Parental Incarceration (n= 490)</u>	<u>Test Statistic (t)</u>
Dependent Variable Logged Variety of Offending	.84	1.13	-7.51 [†]
Mediators			
Antisocial Beliefs	17.34	19.06	-4.18***
Neutralization	12.45	14.19	-6.28***
School Bonds	16.27	15.34	6.21***
Antisocial Peers	6.04	8.42	-7.94***
Maternal Attachment	15.72	14.65	5.18***
Paternal Attachment	14.66	12.54	8.36***
Maternal Monitoring	8.67	8.17	4.68***
Paternal Monitoring	7.43	6.13	8.64***

Note: [†] = $p < .10$; *** = $p < .001$

Table 7. PROCESS Model results Explaining Variety of Offending for RSVP Data, Without Controls.

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	1.06	.14	7.47***
Independent Variable Parental Incarceration	.06	.03	1.74
Mediators			
Antisocial Beliefs	.01	.00	5.67***
Neutralization	.03	.00	10.77***
School Bonds	-.02	.01	-3.61***
Antisocial Peers	.03	.00	12.10***
Maternal Attachment	.00	.00	.54
Paternal Attachment	-.01	.00	-2.56*
Maternal Monitoring	-.06	.01	-6.19***
Paternal Monitoring	-.01	.01	-.80
R ² = .3270, F _(9, 2144) = 115.73, p < .001			

Note: * = p < .05; *** = p < .001

Table 8. Indirect Effects of Parental Incarceration on Offending: RSVP Data Without Controls.

<u>Variable</u>	<u>Effect</u>	<u>LLCI</u>	<u>ULCI</u>	<u>SE</u>
Direct [†]	.0583	-.0075	.1242	.0336
Total [*]	.2334	.1858	.2832	.0247
Mediators				
Antisocial Beliefs	.0196 [*]	.0085	.0338	.0065
Neutralization	.0585 [*]	.0377	.0816	.0113
School Bonds	.0206 [*]	.0080	.0353	.0070
Delinquent Peers	.0772 [*]	.0548	.1028	.0123
Maternal Attachment	-.0027	-.0140	.0077	.0055
Paternal Attachment	.0236 [*]	.0043	.0444	.0102
Maternal Monitoring	.0291 [*]	.0156	.0452	.0077
Paternal Monitoring	.0076	-.0117	.0284	.0100

Note: ^{*} = $p < .05$

Table 9. PROCESS Model results for RSVP Data, With Controls. (N=1,911)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	1.51	.17	8.66***
Independent Variable Parental Incarceration	.05	.04	1.37
Mediators			
Antisocial Beliefs	.01	.00	5.42***
Neutralization	.03	.00	8.67***
School Bonds	-.02	.01	-2.61**
Antisocial Peers	.03	.00	9.97***
Maternal Attachment	.01	.01	1.18
Paternal Attachment	-.01	.00	-2.16*
Maternal Monitoring	-.06	.01	-5.86***
Paternal Monitoring	-.01	.01	-1.53
Controls			
Race			
Black	-.13	.07	-1.76 [†]
Asian	.01	.21	.05
Hispanic	-.15	.16	-.97
Native	-.31	.28	-1.11
White & Black	.01	.12	.04
Other	.17	.18	.93
Gender			
Female	-.01	.03	-.29
Self-Control	-.01	.00	-5.48***
R ² = .33, F _(17, 1893) = 55.60, p < .001			

Note: [†] = p < .10; * = p < .05; ** = p < .01; *** = p < .001

Table 10. Direct and Indirect Effects of Parental Incarceration on Offending: RSVP Data With Controls. (N=1,911)

<u>Variable</u>	<u>Effect</u>	<u>LLCI</u>	<u>ULCI</u>	<u>SE</u>
Direct Effect	.05	-.02	.12	.04
Total Effect	.16*	.12	.21	.02
Indirect Effects				
Mediators				
Antisocial Beliefs	.02*	.00	.03	.01
Neutralization	.04*	.02	.06	.01
School Bonds	.01*	.00	.02	.01
Delinquent Peers	.05*	.03	.07	.01
Maternal Attachment	-.00	-.02	.00	.00
Paternal Attachment	.02*	.00	.04	.01
Maternal Monitoring	.02*	.01	.04	.01
Paternal Monitoring	.01	-.01	.03	.01
Controls: <i>Race</i> Black, Asian, Hispanic, Native White & Black Other <i>Gender</i> Female <i>Self-Control</i>				

Note: * = $p < .05$

Study 1: RSVP Data

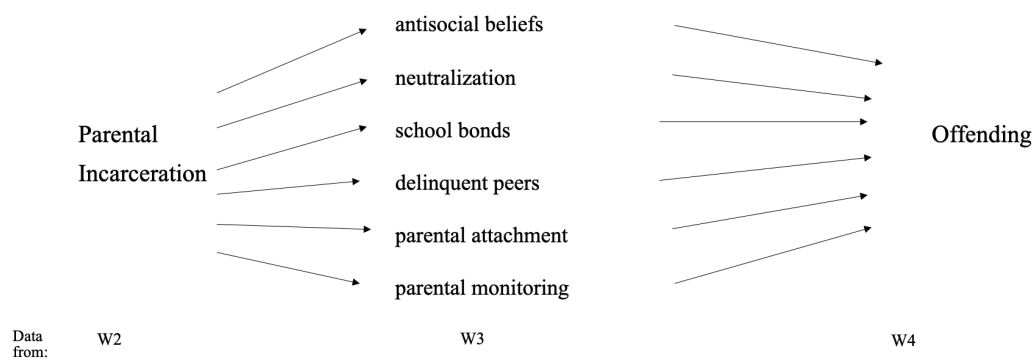


Figure 1. Conceptual Model for Study 1: RSVP Data.

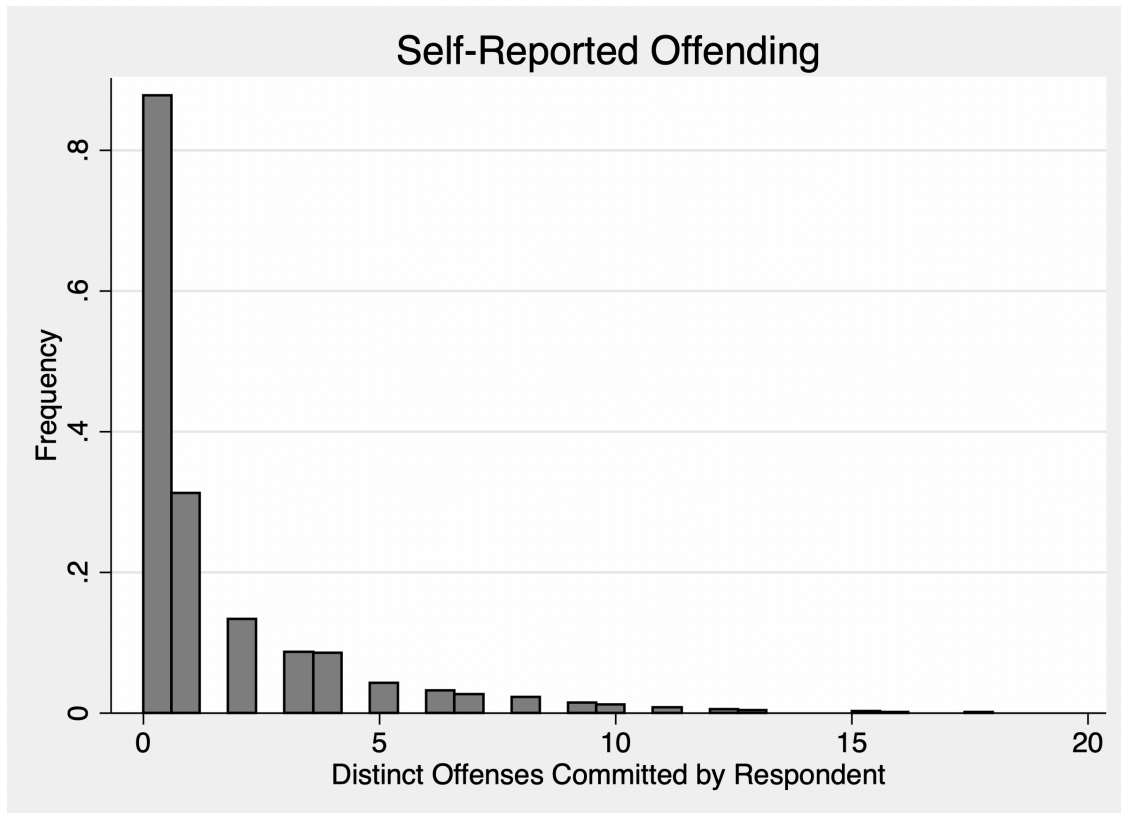


Figure 2. Histogram of Self-Reported Offending: RSVP Data, 18-month Follow-Up Prior to Log Transformation.

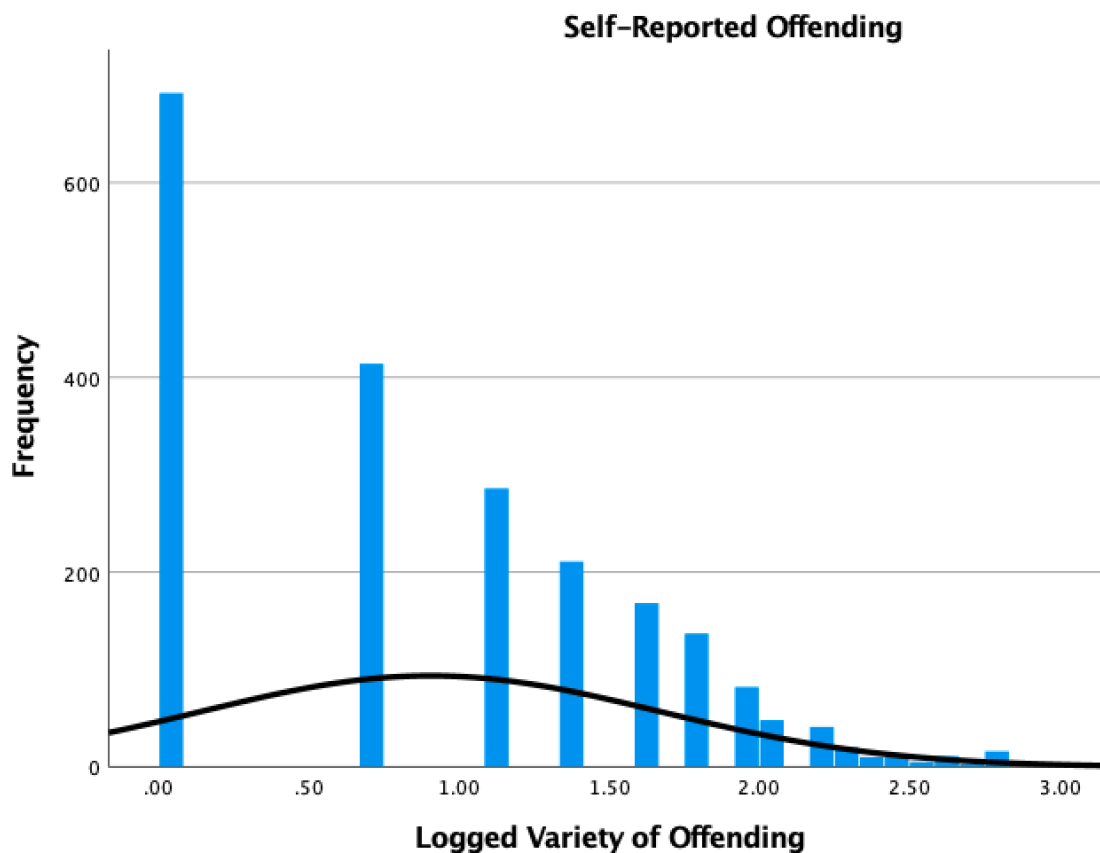


Figure 3. Histogram of Self-Reported Offending: RSVP Data, 18-Month Follow-Up After Log Transformation.

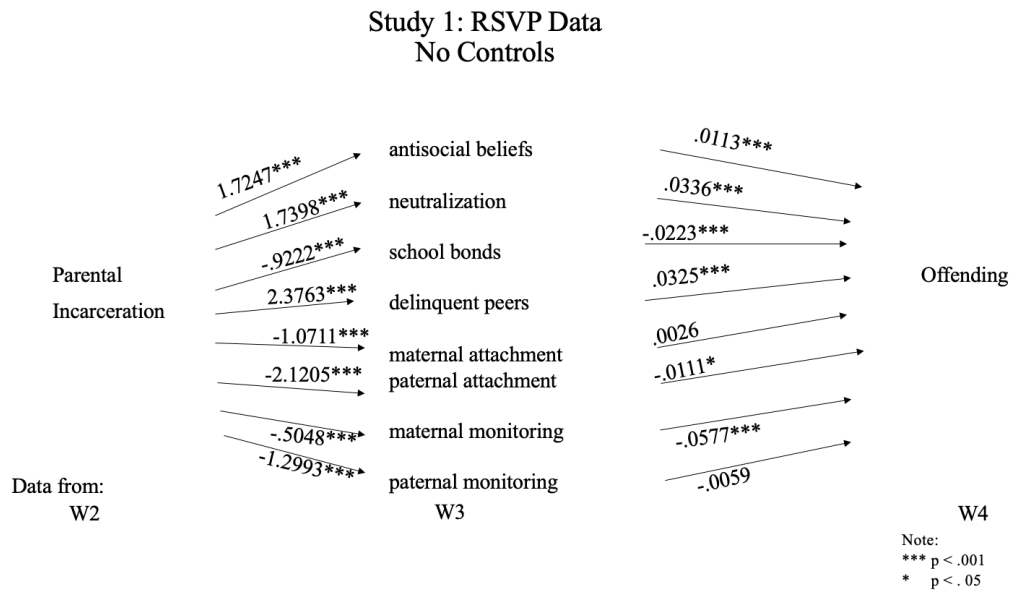


Figure 4. PROCESS Model Results for RSVP Data, Without Controls.

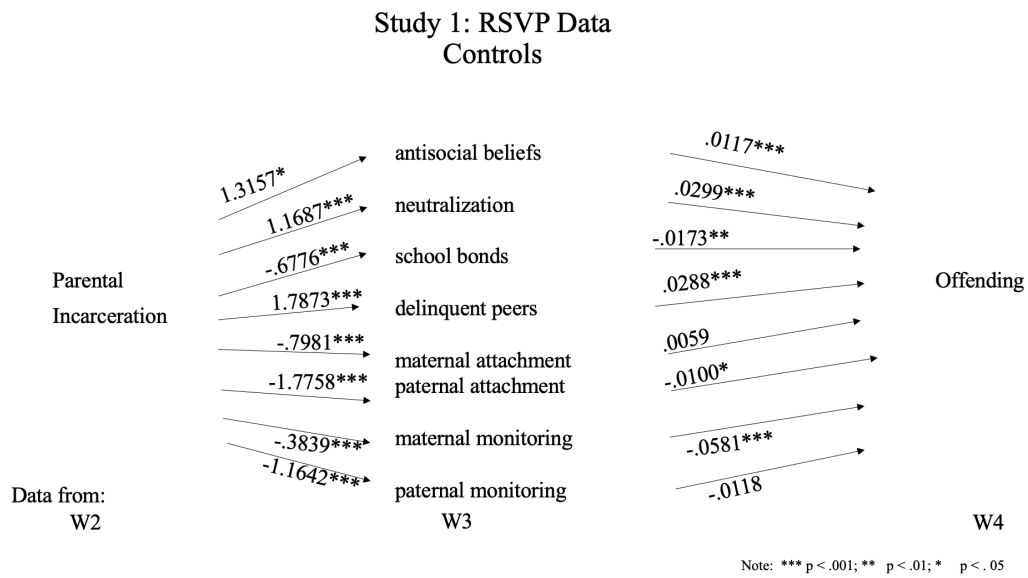


Figure 5. PROCESS Model Results for RSVP Data, With Controls.

III. STUDY 2: AN ANALYSIS OF MEDIATING PATHWAYS BETWEEN PARENTAL INCARCERATION AND ADOLESCENT OFFENDING

Keywords: delinquency, antisocial behavior, mediation. families, parenting

Abstract

The United States is a leader in the number of individuals that are held in jails and prison. An often-overlooked population affected by this are their children. Parental incarceration leads to a host of deleterious effects (Cochran, Siennick, & Mears, 2018; Dallaire, Ciccone, & Wilson, 2012; Foster & Hagan, 2013; Murray, Loeber, & Pardini, 2012) which can impact childrens' lives at home and school, including peer associations, parent-child attachment and monitoring, and school bonds. This study seeks to identify the ways by which how these processes may unfold.

Introduction

Despite gradual declines in the United States prison population over the past decade (Maruschak & Minton, 2020), the United States continues to incarcerate a greater proportion of people than any other developed country (Walmsley, 2016). The reason the United States continues to be the leader in the number of people imprisoned is complex, but involves changes in sentencing, additional emphasis on punishment rather than rehabilitation, politicization, and the 'commercialization' of crime control (Pizarro, Stenius, & Pratt, 2006). In the shadows of the vast number of imprisoned individuals are their families, most of whom are already experiencing issues such as poverty and living in crime ridden neighborhoods. Specifically, "the unseen victims of the prison boom" (Petersilia, 2005, p. 34) are the children of incarcerated parents. Children who experience parental incarceration face multiple risk factors prior to parental incarceration, including neglect and abuse (Dannerbeck, 2005, Phillips et al., 2006) and their risk for

antisocial behavior triples (see Murray & Farrington, 2008) with numerous studies linking parental incarceration to criminal behavior (Johnson 2009; Hjalmarsson & Lindquist, 2011; Hjalmarsson & Lindquist 2012). While select studies have not found a significant effect of parental incarceration on child development (Billings, 2017; Kinner, Alati, Najman, & Williams, 2007), the majority of research indicates that parental incarceration is positively associated with antisocial behavior as well as other negative outcomes for children (Murray & Farrington, 2008). Children of incarcerated parents exhibit more conduct problems (Bor, McGee, & Fagan, 2004; Geller, Garfinkel, Cooper & Mincy, 2009; Aaron & Dallaire, 2010; Murray & Farrington, 2005; Murray & Farrington, 2008), use more drugs and alcohol and are more likely to receive public assistance (Geller et al. 2009). Furthermore, adolescents with an incarcerated parent are more likely to drop out of school (Trice & Brewster, 2004) compared to children who do not have a history of parental incarceration. In addition, offending is clustered within families, suggesting there is an inter-generational transmission of crime that occurs (Glueck & Glueck, 1950), even among adolescents with many protective factors in place (Dobbie, Grönqvist, Niknami, Palme, & Priks, 2018). Disentangling the effects of parenting on adolescent behavior remains difficult because children of incarcerated parents are typically already at a disadvantage prior to their parent's incarceration (Dannerbeck, 2005).

Parental Incarceration and Conduct Problems

The research on parental incarceration identifies several negative outcomes for children, including serving as a risk factor for child abuse and neglect (Bor, McGee, & Fagan, 2004) as well as placing children at an increased likelihood for delinquency

(Bryant, Rivard, Addy, Hinkle, Cowan, & Wright, 1995; Stanton, 1980; Murray & Farrington, 2005; Hoeve et al., 2009; Hoeve et al., 2012; Huebner & Gustafson 2007; Bor, Loeber & Stouthamer-Loeber, 1986; McGee, & Fagan 2004; Stanton, 1980; Trice & Brewster, 2004; Farrington et al., 2001;). However, future research is needed in order to ensure the literature is adding to parental incarceration. For example, Bor, McGee, & Fagan (2004) found a significant correlation between parental imprisonment and child delinquency ($r = .08$). However, it is unclear whether parental incarceration refers to the child's biological father or another male figure. The original measure asked mothers if their "partner" had been imprisoned. Therefore, there is a possibility that the incarceration reported by the biological mother may have preceded the birth of the child or may refer to a different person other than the child's biological father.

In addition, Moerk (1973) also focused on incarcerated fathers and found that 58% of boys with an incarcerated father reported conduct problems. However, the outcome measure was unclear, making it difficult to determine what type of conduct problems boys with incarcerated fathers exhibited. Further, the sample size was small, calling in to question the reliability of the results. Also relying on a small sample size, Stanton (1980) found negative consequences for youth with mothers who were involved with the criminal justice system. Many children with a mother in jail had trouble with the police, school, or neighbors (42%). Only 24% of children with a mother on probation reported similar troubles. However, some mothers on probation had a previous incarceration, making it difficult to isolate the effects on conduct problems for children with mothers on probation versus children with incarcerated mothers. Due to this issue

as well as the small sample size, the conclusions from this study are preliminary and uncertain.

Trice and Brewster (2004) also examined the effects of maternal incarceration on adolescents on school, home, and community behavior. Questionnaires were given to the incarcerated mothers, the child's current caretaker, as well as to that child's same-sex best friend's parents (as a comparison group), for a total of 151 questionnaires filled out by incarcerated mothers, 47 questionnaires filled out by caregivers, and 41 questionnaires filled out by their same-sex best friend's parents. Adolescents with an incarcerated mother were more likely to drop out of school (36% versus the 9% national drop-out rate at the time), less likely to be compliant at home (i.e., abide by a curfew and complete household chores) compared to their best friends, and more likely to be arrested within the past year (34%) compared to their best friends (15%). However, whether their best friends also experienced the incarceration of a parent was not asked.

Considering adolescents who were involved with the Department of Juvenile Justice and had a history with either social services or a clinic, Bryant et al. (1995) found a large effect of parental imprisonment on youth offending, predicting both minor offending and serious offending among a sample of 180 youths. Specifically, 60% of minor offenders and 36% of serious offenders had a parent who had been incarcerated. Only 31% of children had a parent who was incarcerated but had not committed any offense themselves. As is the case with many studies examining parental incarceration, it is unclear if the parents' incarceration preceded the child's birth or not.

Murray and Farrington (2005) also considered the effects of parental incarceration on children, focusing on a life course perspective. In this study, 48% of males who

experienced parental incarceration at the ages of birth through 10 years old were convicted of an offense compared to 25% of males who were separated from their parents for other reasons.

There are various reasons why children seem to be entrapped in a life of crime and to discuss them all is beyond the scope of this paper. However, there are several possible mediators or environmental risk factors that may impact adolescent offending through parental incarceration, which will be discussed next.

Mediators: Parental Incarceration and Antisocial Behavior

The incarceration of a parent can have negative impacts on children because parental influence during childhood is important for child development (Fagan, Day, Lamb, & Cabrera, 2014). It is possible that parental incarceration can alter antisocial beliefs and the child's perceptions of punishment. In fact, the negative consequences following the incarceration of a parent are generally more consequential for families who have fewer resources to overcome this adverse experience (Mustin, 1994), placing at-risk children at an even higher risk for offending. Although few studies have examined this area, there is research that suggests parental incarceration affects "identity endorsement" as described in Finkeldey, Longmore, Giordano, and Manning (2020) who found that young adults of incarcerated parents who had low emotional independence were more likely to identify themselves as "troublemakers" and partiers. Although for an at-risk sample of adolescents, parental incarceration may be considered normal and part of their subculture (see Schneller, 1978), it is also possible that values and belief systems of adolescents could change as noted by Saunders (2018) who found that children of adolescents began to think of themselves as "bad people", making it important to

consider how antisocial beliefs could mediate the relationship between parental incarceration and future offending.

In addition, parental incarceration impacts different aspects of school for adolescent children. Parental incarceration puts children at risk of school failure (Murray & Farrington, 2008), a lower likelihood of entering college (Foster & Hagan, 2009; Hagan & Foster, 2012), dropping out of school (Trice & Brewster, 2004), failing classes (Trice & Brewster, 2004; Murray & Farrington, 2008), and having lower grade averages (Hagan & Foster, 2012). Parental incarceration is associated with decreased levels of school readiness (Haskins, 2014) and poor attendance (Stanton, 1980). In addition, Cochran, Siennick, and Mears (2018) found that children with incarcerated parents are less engaged in school, finding lower participation in school clubs, more trouble with their peers and teachers, and lack a sense of belonging at school, similar to Saunders (2018) who found evidence of adolescents excluding themselves from conventional school activities in order to hide information about their parent's incarceration. While previous literature suggests school bonds are affected negatively by parental incarceration, more research is needed on this particular mediator as research has newly emerged focusing on school connectedness.

In addition, parental monitoring and parental attachment are two mediators to consider when examining the relationship between parental incarceration and adolescent offending as these are two of the most important factors for development in adolescents (Gottfredson & Hirschi, 1990; Loeber & Dishion, 1983; Loeber & Stouthamer-Loeber, 1987). If a strong parent-child bond exists, it is likely adolescents will refrain from crime. However, if bonds are weak, conduct problems should be expected. However, the

effects on the parent-child bond and attachment are complex when a parent is incarcerated. It is possible that incarceration leads to weaker child-parent bonds due to the separation, although some studies have reported that students can still feel close to their parents during their incarceration (Hagan & Foster, 2012). Also, monitoring will presumably be impacted when a parent is incarcerated. It is plausible that less monitoring from a parent will result in an increase in antisocial behavior, but this is a potential mechanism that warrants further examination. Kjellstrand and Eddy (2011) found that effective parenting mediated the relationship between parental incarceration and antisocial behavior, however there are few examinations of how parental incarceration impacts antisocial behavior. Examining each aspect of parenting is beyond the scope of this study however this study seeks to clarify how parental bonds and parental monitoring mediate the relationship between parental incarceration and subsequent offending.

Children of parents who are incarcerated may also associate with delinquent others. Because at-risk youth may have already withdrawn from interaction with prosocial settings and others to avoid rejection (Link, 1982; Link et al. 1989), the association with delinquent peers may not be as evident in this sample compared to a community sample. However, the current study will build on prior examination to see how delinquent peers could serve as a mediator between parental incarceration and adolescent offending. It could still be possible that in an at-risk sample, adolescents associate with delinquent peers as a form of self-reliance (Saunders, 2018). In other words, to gain a new sense of belonging, adolescents may associate with delinquent others to avoid bullying and shame as found in Boswell (2002) and Chui (2010).

Current Study

Despite the growing evidence regarding the negative implications for children with a history of parental incarceration, there are unanswered questions about the specific effects of parental incarceration on youth. This study will add to the existing literature by examining various potential mediators in an at-risk sample to assess how the negative consequences of parental imprisonment occur. If the precursor to the problems that arise for children following parental incarceration can be identified, the research on the collateral consequences of parental incarceration on children will become more compelling. Therefore, this study seeks to identify potential precursors to conduct problems at a time where children are transitioning into adults and encountering important life changes. Specifically, the current study will attempt to add to the current literature by examining whether certain mechanisms mediate the effect of parental incarceration on adolescent offending. In particular, the effect of parental incarceration on antisocial beliefs, perceptions of punishment, school bonds, and the parent child relationship will be examined (see Figure 6).

Research Questions

The research questions for Study 2 are stated below.

Research Question 1: Using an at-risk sample of adolescents, is parental incarceration associated with adolescent offending?

Research Question 2: It is hypothesized that after controlling for demographics and self-control, parental incarceration will be associated with:

Research Question 2.1: increased antisocial beliefs;

Research Question 2.2 more neutralization of antisocial behavior;

Research Question 2.3: decreased involvement in school;

Research Question 2.4: more antisocial peers;

Research Question 2.5: decreased parental bonds (i.e., less attachment);

Research Question 2.6: decreased parental monitoring.

Research Question 3: It is hypothesized that after controlling for demographics and self-control, each of the following will be associated with adolescent offending:

Research Question 3.1: increased antisocial beliefs;

Research Question 3.2: more neutralization of antisocial behavior;

Research Question 3.3: decreased involvement in school;

Research Question 3.4: more antisocial peers;

Research Question 3.5: decreased parental bonds (i.e., less attachment);

Research Question 3.6: decreased parental monitoring.

Research Question 4: Do the following factors serve as mediators between parental incarceration and adolescent offending:

Research Question 4.1: increased antisocial beliefs;

Research Question 4.2: more neutralization of antisocial behavior;

Research Question 4.3: decreased involvement in school;

Research Question 4.4: more antisocial peers;

Research Question 4.5: decreased parental bonds (i.e., less attachment);

Research Question 4.6: decreased parental monitoring.

Methods

The Pathways to Desistance Study (the “Pathways Study”) data are used for the current study (Schubert, Mulvey, Steinberg, Cauffman, Losoya, Hecker, Chassin, &

Knight, 2004). Data collection for the Pathways Study originally occurred between November 2000 and April 2010 in order to examine the desistance process among 1,354 adolescent offenders as they entered adulthood. Participants were between the age of 14 and 17 at the time of their offense and were adjudicated of serious criminal offenses, predominantly including felonies, but also including misdemeanor weapon, property, and sexual assault offenses⁶. Participants were adjudicated through juvenile and adult courts in Maricopa County, Phoenix, Arizona (N = 654), and Philadelphia County, Pennsylvania (N = 700). After receiving informed consent from both the adolescent and their parent/guardian, baseline interviews were conducted. For youths who were involved in the juvenile system, baseline interviews were conducted within 75 days of the adolescents' adjudication hearing. For those adolescents who were in the adult system, baseline interviews were conducted within 90 days of either 1) their decertification hearing for Philadelphia participants (at which point a hearing was held to determine if their case should remain in the adult system or be transferred back to juvenile court) or 2) their arraignment hearing for Arizona participants⁷. Baseline interviews were approximately two-hour sessions that explored the adolescent's background, community context, personal relationships, individual functioning and overall development and attitudes. Follow-up interviews were then conducted at six-month intervals for the next three years. Subsequently, annual interviews were conducted with each participant,

⁶ In order to avoid an overrepresentation of drug offenders, the proportion of male offenders with a drug charge was capped at 15% during the enrollment process, which occurred between November 2000 and January 2003. Of the participants approached for inclusion in the study, 20% declined to participate.

⁷ During the recruitment period, there were no waive-back provisions in Arizona law. During the adult arraignment hearing, participants in Arizona had already been formally charged and entered a plea of guilty or not guilty at this phase of the process.

following participants for a total of seven years. Furthermore, a release interview was conducted with each participant upon release from any residential facility.

At the six-month time period, the retention rate was approximately 93%, with 1,262 out of 1,354 adolescents completing an interview. By the 36-month follow up interview, retention rates decreased to about 91%, with 1,238 completed interviews out of 1,354. Lastly, by the 84-month follow up interview, retention rates were about 84% (1,134 completed interviews out of 1,354). Approximately 3.2% of adolescents (or 46 adolescents) dropped out the study, refusing to participate. Another 3.5% (or 48 adolescents) have missing data due to dying during the course of the study (29 from Philadelphia and 19 from Phoenix).

Sample for Analysis

In order to capture subjects during adolescence as well as to ensure temporal ordering, this study examines data from the baseline interviews, and 12-month, and 18-month follow up interviews for the primary analyses. Data from the baseline interview were used to measure control variables and parental incarceration while data from the 12-month follow up interview were used to measure the mediating variables. Lastly, data from the 18-month follow up were used to measure offending. Supplemental analyses were conducted using a combined 12-84 month follow up interview. Control variables and parental incarceration in the supplemental analyses remained to be measured from the baseline interviews while the mediating variables continued to be measured from the 12-month follow-up interview.

Dependent Variable: Offending

The dependent variable in this study is the number of distinct offenses the respondent affirms to participating in during the recall period (e.g., Over the recall period, have you purposefully destroyed or damaged property that did not belong to you?) and is measured at both the 18-month follow up (for short term offending) and a combined 12–84-month follow-up time period (for long term offending). While the full self-reported offending measure originally contained 24 items, two items (specifically, questions involving forced sex and murder) are masked for confidentiality and, consequently, are not included in the present analysis. After accounting for the two items that are unavailable, the final variety index for the primary analysis consists of 22 items ($\alpha = .84$) with the average participant reporting participation in approximately 1.5 distinct offenses ($sk = 7.13$) (See Figure 7). After taking the natural log, the average score is .59 ($sk = .98$) (see Figure 8). Supplementary analyses were also done using the natural log self-reported variety of offending combined from starting at the 12-month follow up period to the 84-month follow up period in order to examine long term offending. The average score for this time period is 4.59 ($sk = .52$) (see Figure 9).

Independent Variable: Parental Incarceration

Data from the baseline interviews were used to measure maternal and paternal incarceration⁸. Respondents were first asked whether anyone in their family had been arrested or been in jail or prison. Most adolescents (78.1% or 1,058) reported someone in

⁸ Data from the 6 month and 12 month follow up interviews were not used due to the low number of biological parents arrested or jailed during the recall period. Nine adolescents reported the arrest or jailing of their biological father at the 6 month follow up interviews, while 5 adolescents reported the arrest or jailing of their biological father at the 12 month follow up. Additionally, no mothers were arrested or jailed during the recall periods for both the 6 month and 12 month interviews.

their family had been arrested and had been in either jail or prison (65.9% or 892). Follow up questions as to how many family members were arrested or jailed were asked of those who reported a familial history. Most adolescents reported only one family member with a history of arrest or jail. Adolescents were then asked to identify the relationship of each family member who had been arrested or jailed. Approximately 17.9% (n = 242) of respondents reported their biological mother has a history of either arrest or being in jail, while about 35.1% (n = 475) reported their biological father had been arrested or jailed. Few adolescents (9.4% or 127) reported that both of their biological parents had a history of either arrest or being in jail, while most (56.4% or 764) indicated neither biological parent had ever been arrested or jailed.

Mediators

Antisocial Beliefs

At the 12-month follow up interview, moral thinking was used to measure adolescents' attitudes about the treatment of others. This measure was based on The Mechanisms of Moral Disengagement (Bandura, Barbarnelli, Caprara, & Pastorelli, 1996) and consists of the mean of 32 items. In order to be included in this scale, data were required for 24 out of the 32 original items. Responses were on a 3-point Likert scale ranging from "Disagree" to "Agree", with higher scores indicating a greater level of moral detachment. Items in the measure included those related to moral justification, euphemistic language, advantageous comparison, displacement of responsibility, diffusion of responsibility, distorting consequences, attribution of blame, and dehumanization. Items included statements such as "It is alright to beat someone who bad mouths your family", "Kids cannot be blamed for using bad words when all their

friends do it”, and “Teasing someone does not really hurt them”. This scale has good internal consistency (.91). However, the CFA analysis done by the original researchers for a single factor solution was less ideal (NFI = 0.810, NNFI = 0.855, CFI = 0.865, and RMSEA = 0.038). At the 12-month follow up, the average score for moral disengagement was 1.53 (SD = .36), indicating an overall low level of moral disengagement among youth.

Neutralization of Antisocial Behavior

Data from the 12-month follow-up interviews were used to measure certainty of punishment using the mean of 7-items which asked the respondent how likely they thought it was that they’d be caught and arrested for the following crimes: fighting, robbery with a gun, stabbing someone, breaking into a store or home, stealing clothes from a store, vandalism, and auto theft. Responses ranged from ‘0’, meaning no chance, to ‘10’, indicating absolute certainty they would be caught. As individual items are not available, internal consistency per the original researchers is .91. The most common score was a 10 (n = 102), followed by 0 (n = 74) with the average score being 5.31 (SD = 2.92).

School Bonds

The 12-month follow up interview data were used to measure school bonds. These items were modeled after the work of Cernkovich and Giordano (1992) and are the mean of 7 items such as “Schoolwork is very important to me”. A 5-point Likert scale was used, ranging from 1 “Strongly Disagree” to 5 “Strongly Agree”. Higher scores indicate a greater degree of commitment to academics. Since some youth in this study were in an institution for three or more months during the recall period (between the 6-

month and 12-month follow up interviews), the answers given by these youth correspond to their institutional school. All other youth responses relate to their community school.

At the 12-month follow up, data are missing for 26.4% of the original sample because 19.1% ($n = 259$) youth were not enrolled in school during the recall period and others missed the interview. Of those with valid data, approximately 55.56% of youth were in public school at the follow up interviews, while most reported being in an institution school (44.44%). Youth in a community school had an average school bonds score of 3.74 ($SD = .65$) ($\alpha = .86$) while youth in an institutional school had an average score of 3.75 ($SD = .64$) ($\alpha = .80$). The measures were combined as one measure in this analysis for an average score of 3.74.

Parenting

Parental Monitoring

The parental monitoring measure was created using data from the 12-month follow up interviews and was adapted from the Parental Monitoring inventory (Steinberg, Dornbusch, & Darling, 1992). The parental monitoring measure consists of four items including questions such as, “How often do you have a set time to be home on weekend nights?” The scale was based on a 4-point Likert scale ranging from 1 “Never” to 4 “Always” and are coded so that higher scores indicate a higher degree of parental monitoring. On average, youth report a parental monitoring score of 2.70 ($SD = .93$), with scores ranging from 1 to 4.

Parental Attachment

The attachment measure for this study was created using data from the 12-month interviews and was adapted from The Quality of Parental Relationships Inventory

(Conger, Ge, Elder, Lorenz, & Simons, 1994). Both maternal and paternal warmth had similar internal consistency ($\alpha = .92$; NFI: .95; NNFI: .94; CFI: .95; RMSEA: .08; $\alpha = .95$; NFI: .96; NNFI: .95; CFI: .96; RMSEA: .11) and both consist of the mean of 9 items. In order to be scored, valid data were required in 7 of the 9 items. Questions included "How often does your father tell you he loves you?" and "How often does your mother let you know she really cares about you?" Responses were given on a 4-point Likert scale ranging from "Always" to "Never" but were then recoded so that higher scores indicate a more supportive parental relationship. Adolescents reported a greater degree of maternal warmth ($\bar{x} = 3.14$, $SD = .71$, $\alpha = .92$) when compared to paternal warmth ($\bar{x} = 2.73$, $SD = .88$, $\alpha = .95$). This measure may or may not tap into biological relationships and may include parental relationships with another parental figure (i.e., any adult that has the responsibility of caring for the adolescent).

Antisocial Peers

Antisocial peers is measured using the 12-month follow-up interview data ($\alpha = .89$). These items are a subset of the items used by the Rochester Youth Development Study (Thornberry, Lizotte, Krohn, Farnworth, and Jang, 1994) and are used to assess antisocial activity among the adolescent's peers. Questions asked included "How many of your friends have sold drugs?" and "How many of your friends have gotten drunk once in a while?" The final scale contains 12 items to which participants respond on a 5-point Likert scale ranging from "None of them" to "All of them". In order to be scored, data must have been valid in 9 of the 12 items. Scores ranged from 1 to 5 with the average score being 2.32 ($SD = .93$).

Control Variables

This analysis includes several control variables including race, gender, and self-control using baseline data. Most of the sample consisted of Black offenders ($n = 561$, 41.43%), followed by Hispanic offenders ($n = 454$, 33.53%), White offenders ($n = 274$, 20.24%) and those who identified as Other ($n = 65$, 4.80%). Due to the majority of the respondents being Black, they serve as the reference category. The sample consisted of 184 females (13.59%) and 1,170 males (86.41%). Females serve as the reference group for gender.

Self-control is also used as a control variable and is taken from the Weinberger Adjustment Inventory (WAI; Weinberger & Schwartz, 1990) which was used to assess an individual's behavior within the context of consideration of others ($\alpha = .73$, NFI = .98, CFI = .99, RMSEA = .04), impulse control ($\alpha = .76$, NFI = .95, CFI = .95, RMSEA = .07), and suppression of aggression ($\alpha = .78$, NFI = .96, CFI = .97, RMSEA = .06). Respondents reported how often their behavior matched a series of statements over the past six months such as "I say the first thing that comes into my mind without thinking about it", "Doing things to help other people is more important to me than almost anything else", and "People who get me angry better watch out". Responses in each subscale ranged from 1 (False) to 5 (True). Higher scores on each of the subscales indicate more positive behavior (i.e., more impulse control, more suppression of aggression or greater temperance, and greater consideration of others).

Descriptive Statistics

Tables 11 and 12 present the descriptive statistics for all variables used in the analysis for the current study before and after listwise deletion.

Analytic Strategy

Using an at-risk sample of youth, the current study will examine whether certain factors serve as mediators between parental incarceration and subsequent adolescent offending. A series of regression analyses will be conducted using PROCESS models (Hayes, 2012) using SPSS. In running the PROCESS models, which has a path analysis framework (Edwards & Lambert, 2007), a series of OLS regressions will be conducted and confidence intervals will be set at 95%. PROCESS allows for a variety of models to be conducted. For the current analyses, an unmoderated mediation model will be conducted which corresponds to PROCESS model 4. Mediators will also be allowed to covary meaning that the models will be parallel multiple mediators models.

Results

Approximately 44% of the full sample reported experiencing parental incarceration (see Tables 11 and 12). The correlations among the current study variables are presented in Table 13. Independent samples t-test are presented in Table 14. Youth with an incarcerated parent had significantly higher levels of offending in the long term ($t = -6.54, p < .001$) but not in the short term ($t = -.77, p > .05$). Youth with a history of parental incarceration also had significantly higher levels of paternal attachment ($t = -1.67, p < .10$) but failed to meet significance at the .05 level. There were no other significant differences in adolescents based on parental incarceration.

Next, analyses were done for the 18-month follow-up period. PROCESS model results for the uncontrolled models are displayed in Table 15. In addition, the total, direct and indirect effects of an incarcerated parent on offending were examined prior to the additional of covariates (see Table 16). There were no significant findings in the

PROCESS models or in any of the decomposition of effects. Controlled PROCESS models were then examined (see Table 17) with decomposition of the effects (see Table 18). As expected (based on the previous results), there were no significant findings in the PROCESS model nor any of the effects.

Analyses were then completed using the 12–84-month follow-up period.

PROCESS models were ran first followed by the total, indirect, and direct effects (see Figure 10). As seen in Table 19, parental incarceration predicts offending ($b = 1.19, p < .05$). No other variables significantly predicted offending and no indirect effects were significant (see Table 20). When adding in controls, parental incarceration continues to significantly predict offending ($b = .94, p < .05$) (see Table 21, see Figure 11). In addition, school bonds and self-control significantly predict less offending (respectively, $b = -.80, p < .10, b = -.67, p < .001$). When decomposing these effects, the direct effect of parental incarceration on offending remains significant (see Table 22).

For completeness, each mediator was examined separately (i.e., individually) with and without controls and each failed to predict offending in any of the supplemental analyses for both the 18-month follow up (see Tables 27 and 28) and the 12-84 month follow up period (see Tables 23 and 24). Parental incarceration continued to significantly predict offending in each model ($p < .001$). Likewise, the direct effect of parental incarceration on offending was significant in each separate model (see Tables 23 and 24) while the indirect effects were not. In the uncontrolled model, there was also a direct effect of parental incarceration on school bonds ($DE = .08, p < .10$) and paternal attachment ($DE = .17, p < .05$) which remained significant in the controlled model.

Due to a skip pattern in which children were not asked about parental monitoring if they reported not living with their parent, this measure was subsequently dropped from the analysis. Once parental monitoring is dropped, parental incarceration and being female positively predict offending, while stronger school bonds, higher levels of self-control, and being Black or Hispanic negatively predict offending (see Tables 25 and 26).

Each mediator was also examined separately for the 18-month follow-up period, with and without controls (see Tables 27 and 28). While results remained largely the same, there were no significant direct effects in these analyses. Parental incarceration continued to positively predict offending with direct effects on school bonds and paternal attachment. When paternal monitoring was dropped, there were no significant results (unlike the 12–84-month follow-up) (see Tables 29 and 30).⁹

Discussion & Conclusion

Parental incarceration is associated with a host of negative outcomes for children including an intergenerational transmission of crime (Besemer, Van der Geest, Murray, Bijleveld, and Farrington, 2011; Mears and Siennick 2016; Murray, Bijleveld, Farrington, and Loeber, 2014). Although there is evidence showing the association between parental incarceration and future offending, less is known about the specific mechanisms that underlie this association. This study draws attention to the experiences of at-risk adolescents who have had a history of parental incarceration, with a specific focus on the mechanisms that link parental incarceration with adolescent offending.

⁹ Additional supplementary analyses were run but not discussed here and are available in the Appendix section as there were no notable changes or differences. This additional analysis includes dropping mediators and adding in mediators one at a time (depending on the sample size).

The findings of this study provide mixed support that parental incarceration impacts future offending for an at-risk population of youth. First examining a shorter time period for offending (i.e., measuring parental incarceration at the baseline interviews, mediators at the 12-month follow up and offending at the 18-month follow up, for a total of 1.5 years), results indicated no significant relationship between parental incarceration and offending. When accounting for a longer period of time (from baseline to the 84-month interview, for a total of 7 years) however, parental incarceration predicted offending in both uncontrolled and controlled PROCESS models. In addition, children with more school bonds and higher levels of self-control offended less than their counterparts. Supplementary analysis also indicated that females were more likely to offend compared to males, as found in other studies (Friedman & Esselstyn, 1965; Murray & Farrington, 2007).

Limitations

There are limitations to this study that should serve as opportunities for future research. First, an important consideration for future research would be to consider the length of jail/prison time that a parent is incapacitated, which was not captured with this data. The jail/prison length should be used in future studies to determine whether sentence length affects negative outcomes for children.

Relatedly, the current analysis depended on self-reported data regarding parental incarceration and was supplemented and validated through official records. While this shows the child had actual knowledge of their parents' incarceration or arrest, future data collection should strive to also capture how much a child knows about parental incarceration and used in conjunction with other indicators such as official records versus

self-reports from children to see if results differ based on the child's knowledge of a parent's incarceration. To that end, jail and prison could have different impacts on a child as they both have different lengths of anticipated incapacitation and likely have different impacts on children. Future studies should attempt to examine jail versus prison and/or sentence length as potentially impacting the effects of parental incarceration on offending.

In addition, the current analyses focused on adolescents. While this time period is important, future studies should also consider the impact of parental incarceration on younger children and how or if there are mediators that impact this relationship. The age of a child could impact the relationship between parental incarceration and offending and different age children could experience mediators in different ways.

This study did not have the ability to examine maternal and paternal incarceration separately, which could lead to different results. However, the sample sizes were insufficient when this was examined and therefore maternal and paternal incarceration were not examined separately. Because research indicates outcomes could differ based on which parent is incarcerated (Wildeman & Turney, 2014), future studies need to examine the impacts of both of these if the sample size is big enough to allow for such analysis. There could be different outcomes based on if only one parent is incarcerated or whether both have a history of parental incarceration.

It is also the case that parental incarceration might be different from other forms of separation such as parents who are in the military, widowed or separated. To that end, living situation should be explored in more depth in future studies. For instance, it could be that parental incarceration is less consequential in terms of negative consequences if

the parent and child never lived together versus living with the parent who is later incarcerated. This could be related to monitoring as well. Low parental monitoring and attachment could be related to parental incarceration or could differ simply due to a parent living in a different household than the child.

Relatedly, issues with timing need further exploration; that is, when the parent was incarcerated could affect future outcomes for children. Further, these effects could differ depending on age and gender of the child.

In conclusion, this study provided limited evidence that parental incarceration impacts future offending for an at-risk sample of adolescents and did not find evidence that any of the proposed factors mediate this relationship. Due to the homogeneity in this sample, future studies should continue to evaluate whether mediators could be different for an at-risk versus a community sample. Although the relationship between parental incarceration and future offending are well-established, the mechanisms behind how this process unfold are still unclear especially when attempting to examine adolescents who already have a high number of risk factors. Future research should continue to explore potential mechanisms to inform policy decisions and attempt to decrease future offending by targeting those areas more closely.

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Table 11. Descriptive Statistics for Pathways Study Prior to Listwise Deletion.

<u>Variable</u>	<u>N</u>	<u>Mean</u>	<u>SD</u>	<u>Range</u>
Dependent Variable Variety of Offending (logged, 18-months)	1,220	.59	.73	0 – 2.94
Dependent Variable Variety of Offending (logged, 12-84 months)	1,193	4.20	3.36	0 – 13
Independent Variable Parental Incarceration	1,354	.44	.50	0 – 1
Mediators				
Antisocial Beliefs	1,260	1.53	.36	1 – 3
Neutralization	1,246	5.31	2.92	0 – 10
School Bonds	906	3.74	.63	1.14 – 5
Antisocial Peers	1,244	1.83	.83	1 – 5
Maternal Attachment	1,060	3.14	.71	1 – 4
Paternal Attachment	555	2.73	.88	1 – 4
Parental Monitoring	526	2.70	.93	1 – 4

Table 12. Descriptive Statistics for Pathways Study after Listwise Deletion. (N=181)

<u>Variable</u>	<u>Mean</u>	<u>SD</u>	<u>Range</u>
Dependent Variable Variety of Offending (logged, 18-months)	.52	.71	2.48
Dependent Variable Variety of Offending (logged, 12-84 months)	4.00	3.46	13.00
Independent Variable Parental Incarceration	.46	.50	1.00
Mediators			
Antisocial Beliefs	1.52	.36	1.66
Neutralization	6.22	2.63	10.00
School Bonds	3.73	.60	3.43
Antisocial Peers	1.67	.69	3.83
Maternal Attachment	3.06	.69	2.78
Paternal Attachment	2.58	.88	3.00
Parental Monitoring	2.83	.88	2.75

Table 13. Correlations Among Study Variables for Pathways Study. (N=171)

	ASB	NEU	SBonds	DPeers	MA	PA	PMon	PI	O1	O2
Antisocial Beliefs (ASB)										
Neutralization (NEU)	-.25***									
School Bonds (SBonds)	-.31***	.16***								
Delinquent Peers (DPeers)	.34***	-.24***	-.20***							
Maternal Attachment (MA)	-.19***	.03	.27***	-.04						
Paternal Attachment (PA)	-.27***	.08†	.26***	-.04	.47***					
Parental Monitoring (PMon)	-.30***	.22***	.29***	-.23***	.28***	.25***				
Parental Incarceration (PI)	.01	-.02	.05	-.03	-.01	.07	-.06			
Offending, 18 months (O1)	.01	-.01	-.03	.02	.01	.09*	-.03	.02		
Offending, 12-84 months (O2)	.03	-.00	-.04	.00	-.04	.05	.02	.19***	.02	

Note: † = $p < .10$; * = $p < .05$; *** = $p < .001$

Table 14. Independent Sample T-tests for Pathways Study.

<u>Variable</u>	<u>No Parental Incarceration</u>	<u>Parental Incarceration</u>	<u>Test Statistic (<i>t</i>)</u>
Dependent Variable Variety of Offending (logged, 18-months)	.58	.61	-.77
Dependent Variable Variety of Offending (logged, 12-84 months)	3.64	4.92	-6.54***
Mediators			
Antisocial Beliefs	1.53	1.53	-.21
Neutralization	5.38	5.23	.85
School Bonds	3.72	3.78	-1.42
Antisocial Peers	1.85	1.81	.91
Maternal Attachment	3.15	3.14	.19
Paternal Attachment	2.67	2.79	-1.67†
Parental Monitoring	2.74	2.64	1.30

Note: † = $p < .10$; *** = $p < .001$

Table 15. PROCESS Model results for Pathways Study predicting offending at 18-Month Follow-Up, Without Controls. (N=190)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	1.17	.54	2.17*
Independent Variable Parental Incarceration	-.11	.11	-1.06
Mediators			
Antisocial Beliefs	-.17	.16	-1.03
Neutralization	-.02	.02	-1.04
School Bonds	-.06	.09	-.66
Antisocial Peers	.11	.08	1.42
Maternal Attachment	-.08	.09	-.90
Paternal Attachment	.07	.07	.94
Parental Monitoring	-.03	.06	-.50
R ² = .04, F _(8, 181) = .84			

Note: * = p < .05

Table 16. Indirect Effects of Parental Incarceration on Offending: Pathways Data Predicting Offending at 18-Month Follow-Up, Without Controls. (N=190)

<u>Variable</u>	<u>Effect</u>	<u>LLCI</u>	<u>ULCI</u>	<u>SE</u>
Direct	-.11	-.32	.10	.11
Total	.04	-.02	.11	.03
Indirect Effects				
Mediators				
Antisocial Beliefs	.01	-.02	.04	.01
Neutralization	.01	-.01	.06	.02
School Bonds	-.00	-.03	.02	.01
Delinquent Peers	.00	-.03	.04	.02
Maternal Attachment	.01	-.02	.05	.02
Paternal Attachment	.00	-.02	.04	.01
Parental Monitoring	.01	-.02	.05	.02

Table 17. PROCESS Model results for Pathways Study Predicting Offending at 18-Month Follow-Up, With Controls. (N=190)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	1.08	.61	1.77 [†]
Independent Variable Parental Incarceration	-.11	.11	-1.02
Mediators			
Antisocial Beliefs	-.17	.17	-1.07
Neutralization	-.02	.02	-.97
School Bonds	-.07	.09	-.75
Antisocial Peers	.12	.08	1.45
Maternal Attachment	-.07	.09	-.76
Paternal Attachment	.07	.07	.99
Parental Monitoring	-.04	.06	-.55
Controls			
Black	-.16	.14	-1.15
Hispanic	-.02	.15	-.11
Other	-.21	.38	-.56
Female	.16	.17	.93
Self-control	.00	.03	.10
R ² = .23, F _(13, 176) = .74, p=.72			

Note: [†]=p < .10

Table 18. Indirect Effects of Parental Incarceration on Offending: Pathways Data Predicting Offending at 18-Month Follow-Up, With Controls. (N=190)

<u>Variable</u>	<u>Effect</u>	<u>LLCI</u>	<u>ULCI</u>	<u>SE</u>
Direct	-.11	-.32	.10	.11
Total	.03	-.03	.11	.04
Mediators				
Antisocial Beliefs	.00	-.02	.04	.01
Neutralization	.01	-.01	.06	.02
School Bonds	.00	-.03	.02	.01
Delinquent Peers	-.00	-.04	.04	.02
Maternal Attachment	.01	-.02	.04	.01
Paternal Attachment	.00	-.02	.04	.01
Parental Monitoring	.01	-.02	.05	.02
Controls: <i>Race</i> Black, Hispanic, Other <i>Gender</i> Female Self-Control				

Table 19. PROCESS Model results for Pathways Study Predicting Offending at 12–84-Month Follow-Up, Without Controls. (N=190)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	5.17	2.63	1.96 [†]
Independent Variable Parental Incarceration	1.19	.51	2.33 [*]
Mediators			
Antisocial Beliefs	-.71	.83	-.86
Neutralization	-.11	.10	-1.13
School Bonds	-.47	.44	-1.08
Antisocial Peers	.26	.40	.64
Maternal Attachment	.01	.45	.03
Paternal Attachment	.26	.36	.73
Parental Monitoring	.27	.31	.88
R ² = .24, F (8,181) = 1.32			

Note: [†] = p < .10; ^{*} = p < .05

Table 20. Indirect Effects of Parental Incarceration on Offending: Pathways Data Predicting Offending at 12–84-Month Follow-up, Without Controls. (N=190)

<u>Variable</u>	<u>Effect</u>	<u>LLCI</u>	<u>ULCI</u>	<u>SE</u>
Direct	1.19*	.18	2.20	.51
Total	.06	-.29	.43	.18
Indirect Effects				
Mediators				
Antisocial Beliefs	.04	-.07	.23	.08
Neutralization	.06	-.08	.28	.09
School Bonds	-.04	-.19	.08	.06
Delinquent Peers	-.03	-.21	.09	.07
Maternal Attachment	-.00	-.11	.08	.04
Paternal Attachment	.04	-.10	.23	.08
Parental Monitoring	-.03	-.19	.08	.07

Note: * = $p < .05$

Table 21. PROCESS Model Results for Pathways Study Predicting Offending at 12–84-Month Follow-Up, With Controls. (N=190)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	10.77	2.66	4.05***
Independent Variable Parental Incarceration	.94	.46	2.04*
Mediators			
Antisocial Beliefs	-.31	.76	-.41
Neutralization	-.07	.09	-.80
School Bonds	-.80	.40	-1.97†
Antisocial Peers	-.02	.37	-.04
Maternal Attachment	.23	.40	.57
Paternal Attachment	.30	.32	.94
Parental Monitoring	.25	.28	.90
Controls			
Black	-1.00	.58	-1.73†
Hispanic	-.06	.62	-.09
Other	-1.02	1.87	-.54
Female	1.32	.71	1.86†
Self-control	-.67	.11	-6.17***
R ² = .51., F _(13,176) = 4.73, p < .001			

Note: † = p < .10; * = p < .05; *** = p < .001

Table 22. Indirect Effects of Parental Incarceration on Offending: Pathways Data Predicting Offending at 12–84-Month Follow-Up, With Controls. (N=190)

<u>Variable</u>	<u>Effect</u>	<u>LLCI</u>	<u>ULCI</u>	<u>SE</u>
Direct	.95*	.03	1.86	.46
Total	.01	-.32	.34	.34
Indirect Effects				
Mediators				
Antisocial Beliefs	.02	-.09	.18	.06
Neutralization	.04	-.09	.21	.07
School Bonds	-.06	-.24	.12	.08
Delinquent Peers	.00	-.15	.15	.07
Maternal Attachment	-.01	-.13	.07	.05
Paternal Attachment	.05	-.07	.22	.07
Parental Monitoring	-.03	-.20	.07	.06
Controls: <i>Race</i> Black, Hispanic, Other <i>Gender</i> Female <i>Self-control</i>				

Note: * = $p < .05$

Study 2: Pathways Data

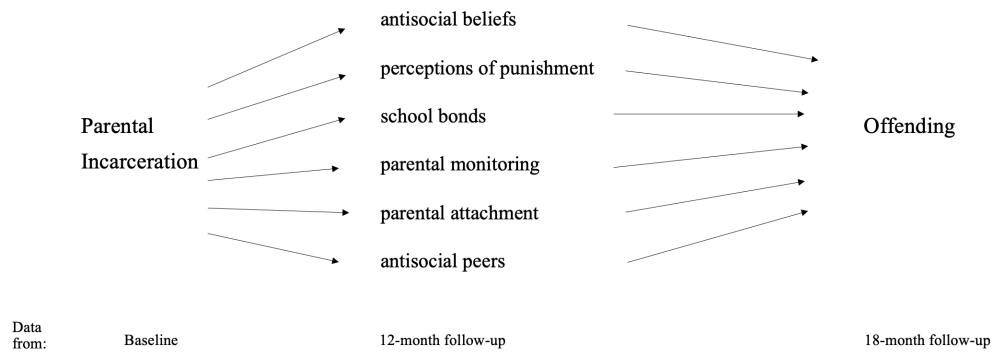


Figure 6. Conceptual Model for Study 2: Pathways Data.

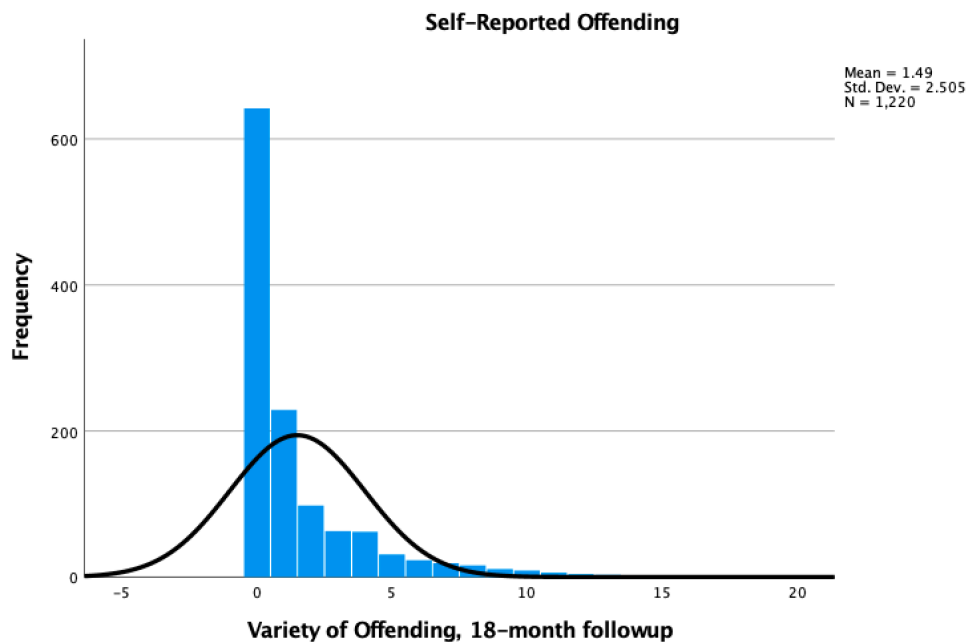


Figure 7. Histogram of Self-Reported Offending: Pathways Data, 18-Month Follow-Up, Prior to Logging.

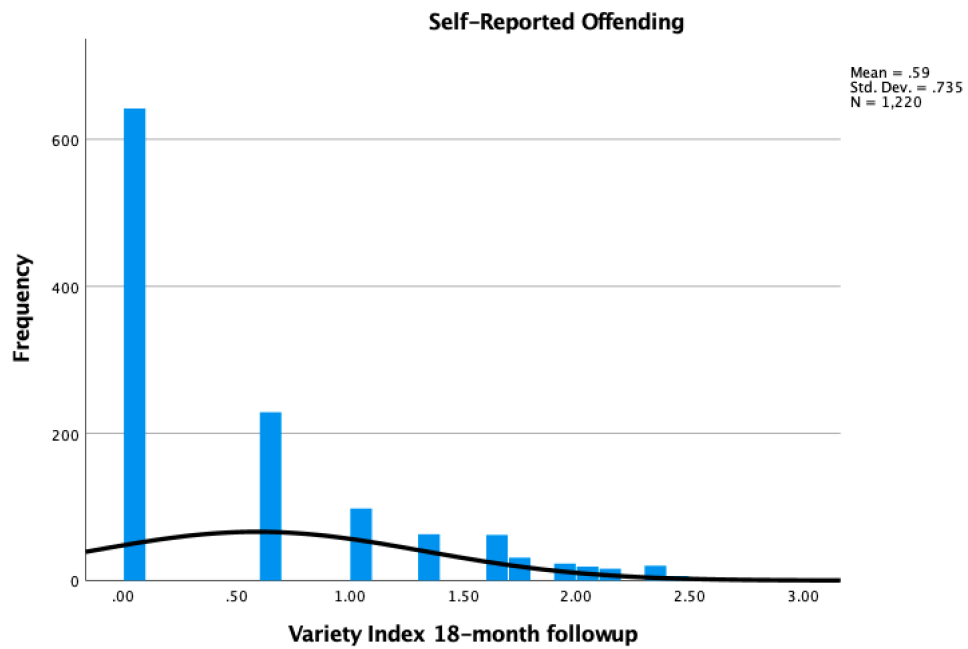


Figure 8. Histogram of Self-Reported Offending: Pathways Data, 18-Month Follow-Up, Logged.

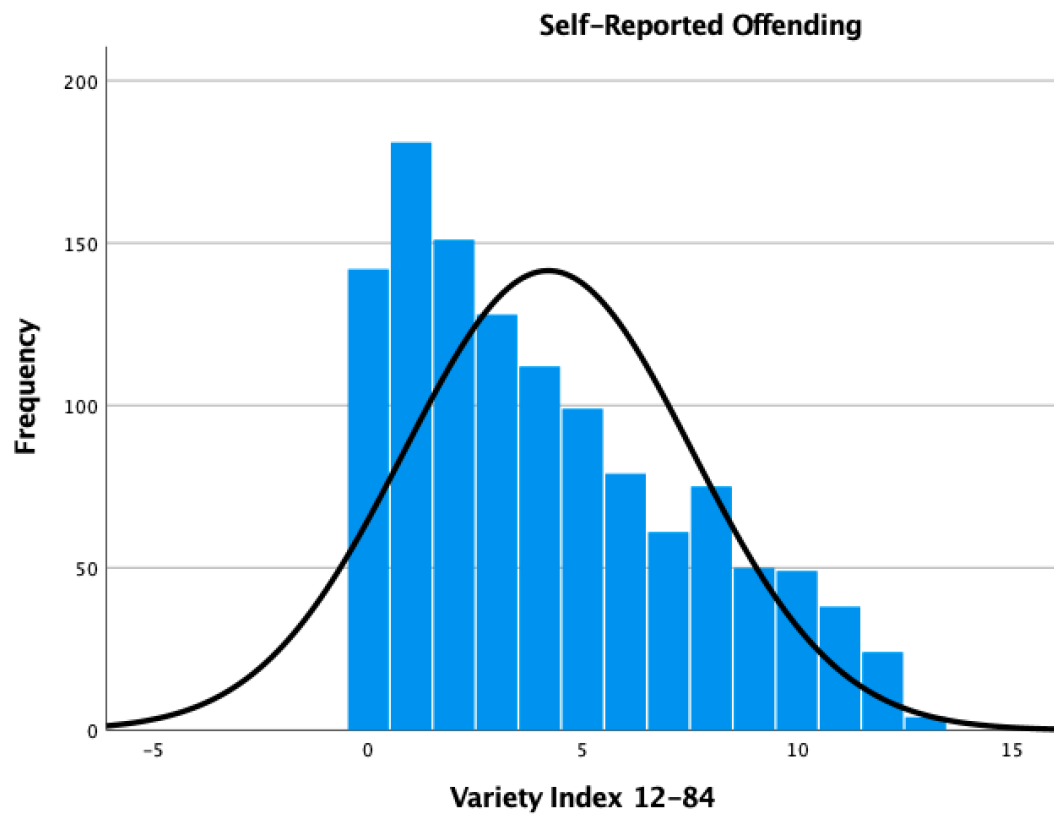


Figure 9. Histogram of Self-Reported Offending: Pathways Data, 12-84-Month Follow-Up, Logged.

Study 2: Pathways Data No Controls

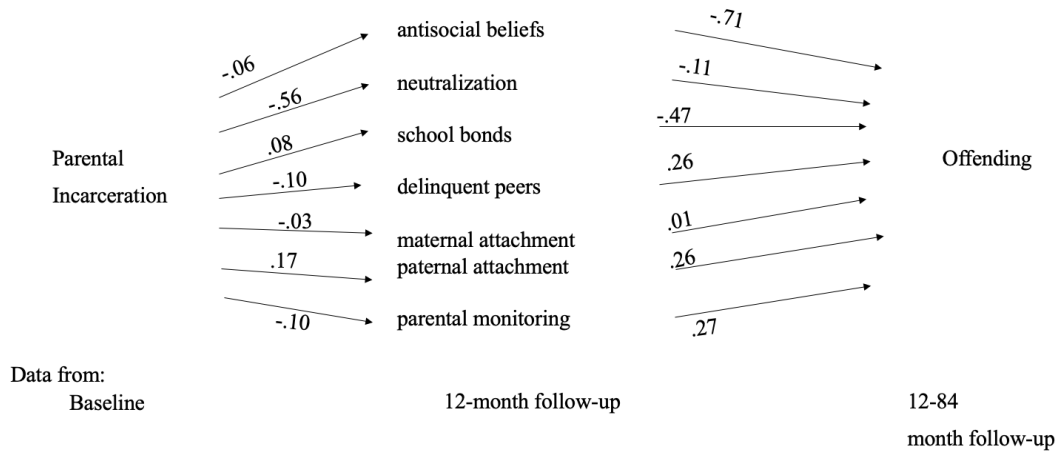


Figure 10. PROCESS Model Results for Pathways Data at 12-84-Month Follow-Up, Without Controls.

Study 2: Pathways Data Controls

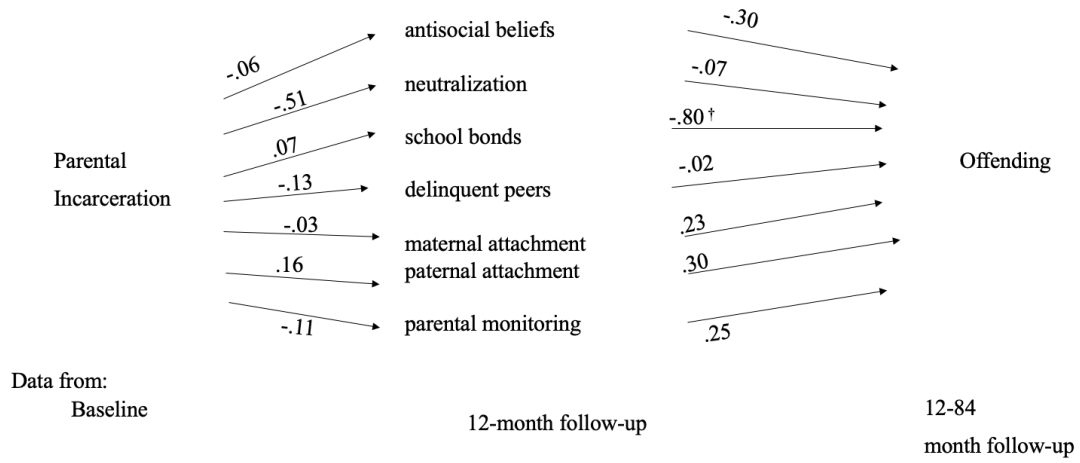


Figure 11. PROCESS Model Results for Pathways Data at 12-84-Month Follow-Up, With Controls.

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>	<u>Sample Size</u>	<u>Model Information</u>	<u>DE of X on Y/ IE of Mediator</u>	<u>DE of X on Mediator</u>
Constant	7.33	.64	11.43***				
IV: PI	.98	.18	5.28***	1,110	R= .45, $F_{(7, 1102)} = 40.42$, p < .001	.98***	.00
M: Antisocial Beliefs	.24	.25	.97			.00	
Constant	7.75	.55	14.21***				
IV: PI	.97	.19	5.22***	1,098	R= .45, $F_{(7, 1090)} = 39.95$, p < .001	.97***	-.12
M: Neutralization	-.00	.03	-.03			.00	
Constant	8.88	.89	10.02***				
IV: PI	.96	.22	4.36***	798	R=.45, $F_{(7, 790)} = 28.07$, p < .001	.96***	.08 [†]
M: School Bonds	-.27	.17	1.62			-.02	
Constant	7.62	.56	13.56***				
IV: PI	.97	.19	5.23***	1,096	R=.46, $F_{(7, 1088)} = 40.95$, p < .001	.97***	-.08
M: Delinquent Peers	.11	.11	1.04			-.01	
Constant	8.15	.71	11.56***				
IV: PI	.90	.20	4.39***	940	R=.44, $F_{(7, 932)} = 31.43$, p < .001	.90***	.01
M: Maternal Attachment	-.06	.14	.44			-.00	
Constant	7.18	.86	8.32***				
IV: PI	.94	.27	3.45***	496	R=.47, $F_{(7, 488)} = 19.55$, p < .001	.94***	.18*
M: Paternal Attachment	.20	.15	1.28			.04	
Constant	7.59	.92	8.21***				
IV: PI	1.06	.29	3.64***	469	R=.47, $F_{(7, 461)} = 18.59$, p < .001	1.06***	-.09
M: Parental Monitoring	.14	.15	.88			-.01	

Note: IV= Independent Variable; PI=Parental Incarceration; M=Mediator; DE=Direct Effect; IE=Indirect Effect
 * = p < .05; *** = p < .001
 Controls: *Race* Black, Hispanic, Other; *Gender* Female; Self-Control

Table 25. PROCESS Model Results for Pathways Study Predicting Offending at 12-84-Month Follow-Up, Full Model with Parental Monitoring Dropped, Without Controls. (N=330)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	5.22	1.87	2.79**
Independent Variable Parental Incarceration	1.22	.38	3.20**
Mediators			
Antisocial Beliefs	-.51	.62	-.82
Neutralization	.01	.07	.14
School Bonds	-.36	.33	-1.10
Antisocial Peers	.04	.26	.16
Maternal Attachment	.00	.32	.01
Paternal Attachment	.13	.26	.50
R ² = .19, F _(7, 322) = 1.77, p < .10			

Note: * = p < .05; ** = p < .01; *** = p < .001. The direct effect of parental incarceration on offending was 1.22 (p < .05). The direct effect of parental incarceration on paternal attachment was .16 (p < .10). Indirect effects were not significant.

Table 26. PROCESS Model Results for Pathways Study Predicting Offending at 12-84-Month Follow-Up, Full Model with Parental Monitoring Dropped, With Controls. (N=330)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	11.00	1.90	5.78***
Independent Variable Parental Incarceration	.84	.34	2.43*
Mediators			
Antisocial Beliefs	-.33	.55	-.60
Neutralization	-.02	.06	-.31
School Bonds	-.69	.30	-2.34*
Antisocial Peers	-.13	.23	-.56
Maternal Attachment	.14	.28	.48
Paternal Attachment	.26	.23	1.13
Controls			
Black	-1.23	.45	-2.76**
Hispanic	-.78	.46	-1.70†
Other	-1.10	1.21	-.91
Female	1.96	.50	3.90***
Self-control	-.64	.08	-7.93***
R ² = .50, F _(12, 317) = 8.75, p < .001			

Note: † = p < .10; * = p < .05; ** = p < .01; *** = p < .001. The direct effect of parental incarceration on offending was .84 (p < .05). The direct effect of parental incarceration on paternal attachment was .16 (p < .10). Indirect effects were not significant.

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>	<u>Sample Size</u>	<u>Model Information</u>	<u>DE of X on Y/ IE of Mediator</u>	<u>DE of X on Mediator</u>
Constant	.56	.10	5.60***	1,133	R= .02, F _(2, 1130) = .25, p=.78	.03 .01	.01
IV: PI	.03	.04	.62				
M: Antisocial Beliefs	.02	.06	.33				
Constant	.60	.05	11.93***	1,120	R= .02, F _(2, 1117) = .20, p=.82	.02 -.18	-.18
IV: PI	.02	.04	.48				
M: Neutralization	-.00	.01	-.40				
Constant	.66	.16	4.27***	807	R= .04, F _(2, 804) = .61, p=.54	.04 .05	.08 [†]
IV: PI	.04	.05	.80				
M: School Bonds	-.03	.04	-.80				
Constant	.56	.06	9.85***	1,120	R= .02, F _(2, 1117) = .27, p=.76	.02 -.03	-.08
IV: PI	.02	.04	.55				
M: Delinquent Peers	.01	.03	.50				
Constant	.57	.11	5.09***	954	R= .01, F _(2, 951) = .08, p=.92	-.00 -.03	-.00
IV: PI	-.00	.05	-.05				
M: Maternal Attachment	.01	.03	.40				
Constant	.35	.11	3.25**	504	R= .11, F _(2, 501) = 2.87, p<.10	.09 .10	.10*
IV: PI	.09	.06	1.35				
M: Paternal Attachment	.07	.04	1.91 [†]				
Constant	.70	.11	6.32***	471	R= .05, F _(2, 468) = .54, p=.58	-.06 -.10	-.10
IV: PI	-.06	.07	-.82				
M: Parental Monitoring	-.03	.04	-.69				

Note:
IV= Independent Variable; PI=Parental Incarceration; M=Mediator; DE=Direct Effect; IE=Indirect Effect; [†]p < .10; * = p < .05; *** = p < .001

[illegible]

Table 29. PROCESS Model Results for Pathways Study Predicting Offending at 18-Month Follow-Up, Full Model with Parental Monitoring Dropped, Without Controls. (N=335)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	.42	.39	1.06
Independent Variable Parental Incarceration	.09	.08	1.20
Mediators			
Antisocial Beliefs	-.04	.12	-.33
Neutralization	-.01	.01	-.65
School Bonds	-.03	.07	-.42
Antisocial Peers	.07	.05	1.26
Maternal Attachment	-.01	.07	-.19
Paternal Attachment	.07	.05	1.46
R ² = .02, F _(7, 327) = .97, p=.46			

Note: The direct effect of parental incarceration on offending was .09 (p=.23). All other direct/indirect effects were not significant.

Table 30. PROCESS Model Results for Pathways Study Predicting Offending at 18-Month Follow-Up, Full Model with Parental Monitoring Dropped, With Controls. (N=335)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	.60	.45	1.31
Independent Variable Parental Incarceration	.09	.08	1.15
Mediators			
Antisocial Beliefs	-.04	.13	-.29
Neutralization	-.01	.01	-.61
School Bonds	-.03	.07	-.46
Antisocial Peers	.07	.05	1.31
Maternal Attachment	-.01	.07	-.18
Paternal Attachment	.07	.05	1.45
Controls			
Black	-.06	.11	-.57
Hispanic	-.01	.11	-.05
Other	-.16	.28	-.55
Female	-.12	.12	-1.02
Self-control	-.00	.02	-.25
R ² = .03, F _(12, 322) = .72, p=.74			

IV. DISCUSSION AND CONCLUSION

The current examination broadly focused on the effects of parental incarceration on adolescent offending using a community sample of adolescents (Study 1: RSVP Data) and an at-risk sample of adolescents (Study 2: Pathways Data). More specifically, the two studies focused on the intervening mechanisms between parental incarceration and offending. More specifically, the focus was if and how the effect of parental incarceration on future offending operated through antisocial beliefs, neutralization of antisocial behavior, antisocial peers and decreases school bonds, parental bonds, and parental monitoring.

The results for Study 1 were largely as anticipated. Increases in antisocial beliefs, neutralizations, and delinquent peers significantly and positively predicted offending while increases in school bonds, paternal attachment, maternal monitoring, and self-control significantly decreased future offending. The unexpected result was that parental incarceration did not significantly predict offending. All indirect effects were significant (with the exception of maternal attachment and paternal monitoring) and the direct effects from parental incarceration to each of the mediators and from the mediators to offending generally operated in the expected direction. Parental incarceration increased antisocial beliefs, neutralization, and delinquent peers which each in turn increased offending. Likewise, parental incarceration decreased school bonds, maternal/paternal attachment, and maternal/paternal monitoring. In turn, school bonds decreased offending, maternal attachment had no effect, paternal attachment decreased offending, and maternal monitoring decreased offending.

These findings are important as they show that parental incarceration serves as a negative life experience for a community sample of adolescents. It is important moving forward to identify these mechanisms as a point of intervention to attempt to minimize the chances an adolescent will offend following the incarceration of a parent. In particular, the beliefs and the peer network an adolescent has after the incarceration of a parent is particularly important to decrease future delinquent behavior. It is also critical to maintain school bonds following a parental incarceration as although school bonds decreased after parental incarceration, it still served to decrease offending. Parental attachment and monitoring also remains important even if a parent has been incarcerated.

Study 2 found less evidence that parental incarceration impacts offending as expected perhaps due to this being a relatively homogenous sample of adolescent offenders. There were no significant findings using the 18-month follow-up period (see Tables 15 and 16) and only parental incarceration and self-control predict offending in the fully controlled PROCESS model results at the 12–84-month follow-up (see Table 21). Parental incarceration increased offending while self-control decreased offending. School bonds also decreased offending, while being female increased offending, but these were at the .10 significance level. When running only one mediator at a time using the 12–84-month follow-up, parental incarceration continued to predict offending in all models but the mediators (or the only other predictor in this case) continued to fail to predict offending (see Table 23 and 24). Effects were not significant for any other mediators. Due to potential issues with parental monitoring, this predictor was dropped and once dropped in the 12-84 month-controlled model, school bonds and self-control significantly predicted less offending while being female significantly predicted more

offending (see Table 26). Additional supplementary analyses are available in the Appendix section.

While these studies add to the current literature regarding how parental incarceration affects offending more broadly, specifically the current studies provide the first comprehensive analysis on the potential mediators between parental incarceration and adolescent offending using two different samples. However, there are limitations to both studies that should be addressed in future studies. First, the current analyses were limited to the examination of parental incarceration in general. Specifically, maternal and paternal incarceration were not examined separately. Current research largely focuses on paternal incarceration as children are more likely to experience the incarceration of a father opposed to a mother. The lifetime risk of imprisonment for men is much higher for men than women (Bonczar, 1997), despite slight changes in this disparity that have occurred over time. Examining whether there are differences in one's mother, father, or both being incarcerated should be considered in future analyses. There are also opportunities in examining whether the incarceration of different family members have on negative outcomes for children. For example, does the incarceration of a sibling, aunt, or uncle have impacts on outcomes for children. If so, in what way and does this unfold in a different process than it would for parents? That is, do the mechanisms by which future offending occur operate differently depending on the relationship between the child and the incapacitated person?

It is also important to note that the amount of time that has passed after a parent was incarcerated was not accounted for in the present studies. This should be a point of examination in the future as the amount of time that has passed since a parent being

incarceration in addition to sentence length may have differential effects on child outcomes. The proximity of parental incarceration may also play a role on outcomes for children. Although some studies have shown that a more recent arrest is more consequential in terms of increasing family conflict (see Aaron & Dallaire, 2010), more research is needed in other potential adverse effects. That is, how age along with proximity of a parental arrest, could affect the relationship between parental incarceration and offending. Although the adjustment of children after an incarcerated parent returns home has been shown to take several years (see Murray & Farrington, 2005), the time period before that (specifically, what negative outcomes occur during the parent's incarceration) needs to be examined more thoroughly. In addition, whether these effects may compound over time should be examined. In the current analysis, age was limited to, however, all developmental periods require examination as results are currently inconsistent on whether age plays a role in whether children reach differently to parental incarceration (see Murray & Farrington, 2008). Age should be a central focus in future examinations as a potential moderating factor.

Importantly however, it may not be the age of the child that is the determining factor behind the effects of parental incarceration. Instead, as previously suggested by Turney & Wildeman (2015) it could be due to the background of individual families. For mothers with a low propensity for imprisonment, children experienced detrimental effects. However, for mothers with a high propensity for imprisonment, there were null effects. Their findings are consistent with the results of the current studies (Turney & Wildeman, 2015). Specifically negative effects were found for the children of mothers who were arguably least likely to experience incarceration (Study 1: RSVP Data) but

there were very few effects of parental incarceration on children found for the children whose parents have a propensity to be incarcerated (Study 2: Pathways Data). At odds with these findings however is research indicating paternal incarceration may benefit certain children in terms of reducing antisocial behavior. Specifically, Jafee, Moffitt, Caspi & Taylor (2003) found that the more time fathers with high levels of antisocial behavior spent with their children, the more conduct problems their children exhibited. It could be that maternal and paternal incarceration has different effects or it could be that it is the relationships themselves that are impacting future behavior. Due to the complexity of these relationships, more research is needed on how parental incarceration impacts different children throughout the life course and through which mechanism.

To that end, quality of care and the quality of parent-child relationship (i.e., attachment) should be examined further in relation to how these factors could mediate the relationship between parental incarceration and offending because the current studies presented mixed results and the data regarding this was limited in Study 2. Parental monitoring should also be examined carefully in future research. Although the current studies examined parental monitoring broadly, future research should examine whether parental monitoring is low (if it is low) due to parental incarceration itself or due to other factors. There could be other reasons parental monitoring is low other than incarceration itself. For example, is monitoring low due to the absence of an incarcerated father or other type of paternal absence? As noted by Lamb (1997), the absence of a father has negative outcomes in and of itself including the emotional distress experienced by single mothers, economic changes in a household, and perceptions of abandonment (in the case

of divorce or separation). Thus, there are various that should be examined to better understand these complex parental effects.

Relatedly, there are research opportunities in examining how parental incarceration might be different from other forms of separation. For example, parental incarceration is just one form of parental separation that could have adverse outcomes. There is literature showing children from divorced homes (Price & Kunz, 2003) are more delinquent. There is also research indicating those in military families lead to an increase in children's internalizing behavior (Aranda, Middleton, Flake & Davis, 2011, Reed, Bell, & Edwards, T. C. 2011). In general, children who are raised in a traditional, two-parent household have a lower risk of delinquency than their counterparts (Free, 1991; Wells & Rankin, 1991). However, a comparative analysis examining the different types of separation could be done to further examine how different types of separation may disrupt the family balance and subsequently lead to negative outcomes for children.

Underlying many of these suggestions for future research is the amount of involvement a parent has with their child. If the data allow for it, living situation should be examined rather than assuming that parents lived with their children prior to their incarceration. Even if a parent did not live with their child/children however, the family arrangements or different living situation should be considered if available. The living situation of a family could affect the relationship between parental incarceration and future outcomes. Future research should attempt to examine how different living situations such as divorced parents, single parents, military families, and so forth could impact outcomes for children who experience an incarcerated parent.

Furthermore, much of the existing literature, including the present analyses, focused on parental incarceration in general. Jail versus state and federal prison may have different experiences for parents and their children, so different types of imprisonment should be considered in future research.

It was beyond the scope of the current analyses; however, social exclusion should also be examined in future studies and among various populations. Social exclusion involves the denial of participation in otherwise “normatively prescribed activities” while at the same time, restricting access to “information, resources, sociability, recognition, and identity, eroding self-respect and reducing capabilities to achieve personal goals” (Silver, 2007, p.1). Seeing how this process unfolds for youth and especially at-risk youth (and whether there are differential effects on those populations) needs to be explored. If there are effects on children, we need to avoid multilevel systemic social exclusion especially for at-risk children-- that is deliberate policy changes should be made to actively work against perpetuating the effects of parental incarceration on children.

Future policy should also re-examine inmate contact with family members. While meant to punish the offender, there are effects on children that are likely unintentional but should be considered. Given the findings of Study 1, visitation with an incarcerated parent and their child should be facilitated as much as possible to benefit the child and perhaps break an intergenerational cycle of violence, however the results of Study 2 did not find parental incarceration to have negative outcomes for children. Given that some studies have found that providing ample opportunities for family contact during a parent’s incarceration leads to positive results (see Mowen & Visser, 2016) and others have found that in-prison contact could be intimidating and disruptive (Chui, 2010;

Oldrup, 2018; Saunders, 2017), it should remain a point of research as to how different children are impacted by parental contact. Regardless however, parents should be provided resources while incarcerated to maintain their well-being and in turn, try to keep family functioning high upon their release. For a community sample of adolescents (Study 1), providing family contact would likely foster positive relationships during and after parental incarceration but for at-risk children (Study 2) where the parent-child relationship may be more fragile, the impact of parental contact (and attachment) is less clear.

Importantly, and as in found in the current examination, parental incarceration does not impact adolescents uniformly. That is, some adolescents may be more prone to experience deleterious effects from experiencing parental incarceration (Study 1: RSVP Data) compared to adolescents who face multiple risk factors already (Study 2: Pathways Data). Due to the differential effects of parental incarceration on negative outcomes for children, policy implications should not be applied broadly but tailored as much as possible to individual circumstances. Ultimately, there is more research to be done on these differences. As discussed above, the two studies presented here present largely different findings and should continue to be expanded on if data allows.

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APPENDIX SECTION

Appendix A. Self-reported Delinquency Items at Baseline: Pathways Data.

Item	No	Yes	Missing*	Total
1. Destroy/damage property	629	722	3	1,354
2. Set fire	1,118	233	3	1,354
3. Broke in to steal	910	441	3	1,354
4. Shoplifted	467	884	3	1,354
5. Bought/received/sold stolen property	582	769	3	1,354
6. Used check/credit card illegally	1,211	140	3	1,354
7. Stole car or motorcycle	928	423	3	1,354
8. Sold marijuana	668	683	3	1,354
9. Sold other drugs	832	519	3	1,354
10. Carjacked	1,229	122	3	1,354
11. Drove drunk or high	790	561	3	1,354
12. Paid for sex	1,296	54	4	1,354
13. Shot someone (hit the victim)	1,177	162	15	1,354
14. Shot at someone (no hit)	1,017	332	5	1,354
15. Robbery with weapon	1,053	297	4	1,354

*Missing data includes missed items, responses of ‘don’t know’ and refusals to answer.

Appendix B. Self-reported Variety of Offending at 18-month Follow-up: Pathways Data.

Item	No	Yes	Total
1. Destroy/damage property	1,106	121	1,227
2. Set fire	1,222	6	1,228
3. Broke in to steal	1,191	35	1,226
4. Shoplifted	1,163	65	1,228
5. Bought/received/sold stolen property	1,054	173	1,227
6. Used check/credit card illegally	1,205	23	1,228
7. Stole car or motorcycle	1,190	38	1,228
8. Sold marijuana	1,088	140	1,228
9. Sold other drugs	1,101	127	1,228
10. Carjacked	1,226	2	1,228
11. Drove drunk or high	1,065	163	1,228
12. Paid for sex	1,219	9	1,228
13. Shot someone (hit the victim)	1,215	10	1,225
14. Shot at someone (no hit)	1,185	43	1,228
15. Robbery with weapon	1,193	35	1,228
16. Robbery with no weapon	1,148	80	1,228
17. Beat up someone (causing serious injury)	1,141	87	1,228
18. In a fight	826	402	1,228
19. Beat someone up as part of a gang	1,173	55	1,228
20. Carried a gun	1,083	145	1,228
21. Entered car in order to steal	1,185	43	1,228
22. Went joyriding	1,158	69	1,227

Table 31. Correlations among Study Variables for Pathways Study. Pairwise Deletion.

		ASB	NEU	SB	DP	MA	PA	PM	PI	O1	O2
Antisocial Beliefs (ASB)		1,260									
Neutralization (NEU)	Correlation N	-.25*** 1,246									
School Bonds (SB)	Correlation N	-.31*** 905	.16*** 897								
Delinquent Peers (DP)	Correlation N	.34*** 1,244	-.24*** 1,232	-.20*** 891							
Maternal Attachment (MA)	Correlation N	-.19*** 1,060	.03 1,053	.27*** 777	-.04 1,049						
Paternal Attachment (PA)	Correlation N	-.23*** 555	.08† 552	.26*** 399	-.04 551	.47*** 515					
Parental Monitoring (PM)	Correlation N	-.30*** 525	.22*** 525	.29*** 419	-.23*** 525	.28*** 500	.25*** 276				
Parental Incarceration (PI)	Correlation N	.01 1,260	-.02 1,246	.05 906	-.03 1,244	-.01 1,060	.07 555	-.06 526			
Offending, 18 months (O1)	Correlation N	.01 1,133	-.01 1,120	-.03 807	.02 1,120	.01 954	.09* 504	-.03 471	.02 1,220		
Offending, 12-84 months (O2)	Correlation N	.03 1,111	-.00 1,099	-.04 799	.00 1,097	-.04 941	.05 496	.02 470	.19*** 1,193	.02 1,070	1,193

Note: †= $p < .10$; ** = $p < .01$; *** = $p < .001$

Table 32. Correlations among Study Variables for RSVP Data, Pairwise Deletion.

		ASB	Neu	SBonds	DPeers	MA	PA	MMon	PMon	PI	Off
Antisocial Beliefs (ASB)		2,972									
Neutralization (Neu)	<i>r</i>	.31***									
	<i>N</i>	2,933									
School Bonds (SBonds)	<i>r</i>	-.37***	-.44***								
	<i>N</i>	2,928	2,930								
Delinquent Peers (DPeers)	<i>r</i>	.24***	.37***	-.31***							
	<i>N</i>	2,896	2,897	2,903							
Maternal Attachment (MA)	<i>r</i>	-.22***	-.24***	.36***	-.21***						
	<i>N</i>	2,861	2,867	2,881	2,837						
Paternal Attachment (PA)	<i>r</i>	-.12***	-.15***	.22***	-.20***	.35***					
	<i>N</i>	2,778	2,780	2,798	2,759	2,781					
Maternal Monitoring (MMon)	<i>r</i>	-.29***	-.31***	.38***	-.24***	.54***	.20***				
	<i>N</i>	2,916	2,923	2,937	2,892	2,915	2,797				
Paternal Monitoring (PMon)	<i>r</i>	-.17***	-.21***	.26***	-.24***	.27***	.68***	.36***			
	<i>N</i>	2,794	2,796	2,813	2,774	2,798	2,835	2,814			
Parental Incarceration (PI)	<i>r</i>	.11***	.14***	-.14***	.19***	-.13***	-.21***	-.13***	-.21***		
	<i>N</i>	2,858	2,866	2,879	2,836	2,821	2,732	2,873	2,750		
Variety of Offending (Logged) (Off)	<i>r</i>	.30***	.43***	-.36***	.41***	-.26***	-.21***	-.34***	-.25***	.20***	
	<i>N</i>	2,537	2,548	2,558	2,521	2,494	2,422	2,548	2,435	2,827	2,938

Note: *** = $p < .001$

Table 33. PROCESS Model results for Pathways Study predicting offending at 12-84 - month follow-up, full model with Parental Monitoring and Paternal Attachment dropped, without controls. (N=676)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	4.28	1.30	3.30**
Independent Variable Parental Incarceration	1.25	.26	4.74***
Mediators			
Antisocial Beliefs	-.02	.41	-.04
Neutralization	.01	.05	.30
School Bonds	-.16	.23	-.70
Antisocial Peers	.07	.17	.39
Maternal Attachment	-.03	.20	-.17
R ² = .18, F _(6, 669) = 3.85, p < .001			

Note: † = p < .10; * = p < .05; ** = p < .01; *** = p < .001. The direct effect of parental incarceration on offending was 1.25 (p < .001). Indirect effects were not significant.

Table 34. PROCESS Model results for Pathways Study predicting offending at 12-84-month follow-up, full model with Parental Monitoring and Paternal Attachment dropped, with controls. (N=675)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	8.58	1.36	6.32***
Independent Variable Parental Incarceration	.91	.24	3.71***
Mediators			
Antisocial Beliefs	-.04	.38	-.11
Neutralization	.01	.04	.33
School Bonds	-.21	.21	-1.02
Antisocial Peers	.10	.16	.62
Maternal Attachment	.09	.18	.51
Controls			
Black	-.88	.32	-2.72**
Hispanic	-.44	.33	-1.31
Other	-.33	.65	-.51
Female	1.63	.35	4.63***
Self-control	-.57	.06	-9.70***
R ² = .44., F _(11, 663) = 14.42, p < .001			

Note: ** = p < .01; *** = p < .001. The direct effect of parental incarceration on offending was .91 (p < .001). Indirect effects were not significant.

Table 35. PROCESS Model results for Pathways Study predicting offending at 12-84 - month follow-up, full model with Parental Monitoring, Paternal Attachment, and School Bonds dropped, without controls. (N=926)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	3.61	.83	4.33***
Independent Variable Parental Incarceration	1.27	.22	5.72***
Mediators			
Antisocial Beliefs	.15	.34	.44
Neutralization	.02	.04	.48
Antisocial Peers	.10	.14	.67
Maternal Attachment	-.13	.16	-.82
R ² = .19, F _(5, 920) = 6.84, p < .001			

Note: *** = p < .001. The direct effect of parental incarceration on offending was 1.27 (p < .001). The direct effect of parental incarceration on delinquent peers was -.10 (p < .10). Indirect effects were not significant.

Table 36. PROCESS Model results for Pathways Study predicting offending at 12-84 - month follow-up, full model with Parental Monitoring, Paternal Attachment, and School Bonds dropped, with controls. (N=925)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	7.39	.94	7.87***
Independent Variable Parental Incarceration	.94	.21	4.54***
Mediators			
Antisocial Beliefs	.14	.31	.44
Neutralization	.02	.04	.63
Antisocial Peers	.15	.13	1.16
Maternal Attachment	-.02	.14	-.17
Controls			
Black	-.63	.27	-2.29*
Hispanic	-.35	.28	-1.24
Other	-.24	.53	-.46
Female	1.68	.29	5.71***
Self-control	-.55	.05	-11.34***
R ² = .44, F _(10, 914) = 21.98, p < .001			

Note: * = p < .05; *** = p < .001. The direct effect of parental incarceration on offending was .94 (p < .001). The direct effect of parental incarceration on delinquent peers was -.10 (p < .10). Indirect effects were not significant.

Table 37. PROCESS Model results for Pathways Study predicting offending at 18-month follow-up, full model with Parental Monitoring and Paternal Attachment dropped, without controls. (N=684)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	.72	.29	2.50*
Independent Variable Parental Incarceration	.01	.06	.12
Mediators			
Antisocial Beliefs	-.08	.09	-.85
Neutralization	-.00	.01	-.48
School Bonds	-.04	.05	-.75
Antisocial Peers	.03	.04	.84
Maternal Attachment	.02	.04	.56
R ² = .00, F _(6, 677) = .39, p=.89			

Note: * = p < .05. The direct effect of parental incarceration on offending was .09 (p=.25). All other direct/indirect effects were not significant.

Table 38. PROCESS Model results for Pathways Study predicting offending at 18-month follow-up, full model with Parental Monitoring and Paternal Attachment dropped, with controls. (N=683)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	1.02	.33	3.10*
Independent Variable Parental Incarceration	-.00	.06	-.05
Mediators			
Antisocial Beliefs	-.07	.09	-.77
Neutralization	-.00	.01	-.44
School Bonds	-.04	.05	-.78
Antisocial Peers	.03	.04	.79
Maternal Attachment	.02	.04	.55
Controls			
Black	-.01	.08	-.10
Hispanic	-.01	.08	-.19
Other	-.33	.15	-2.18*
Female	-.14	.09	-1.60
Self-control	-.02	.01	-1.24
R ² = .02, F _(11, 671) = 1.00, p = .45			

Note: * = $p < .05$. The direct effect of parental incarceration on offending was .01 ($p = .91$). The direct effect of parental incarceration on maternal attachment was -.09 ($p < .10$). Indirect effects were not significant.

Table 39. PROCESS Model results for Pathways Study predicting offending at 18-month follow-up, full model with Parental Monitoring, Paternal Attachment, and School Bonds dropped, without controls. (N=940)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	.51	.19	2.71*
Independent Variable Parental Incarceration	-.01	.05	-.13
Mediators			
Antisocial Beliefs	.03	.08	.45
Neutralization	-.00	.01	-.23
Antisocial Peers	.01	.03	.23
Maternal Attachment	.02	.03	.51
R ² = .00, F _(5, 934) = .14, p=.98			

Note: * = $p < .05$. The direct effect of parental incarceration on offending was -.00 ($p=.96$). Indirect effects were not significant.

Table 40. PROCESS Model results for Pathways Study predicting offending at 18 - month follow-up, full model with Parental Monitoring, Paternal Attachment, and School Bonds dropped, with controls. (N=938)

<u>Variable</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	.67	.23	2.89**
Independent Variable Parental Incarceration	-.01	.05	-.27
Mediators			
Antisocial Beliefs	.03	.08	.45
Neutralization	-.00	.01	-.27
Antisocial Peers	.01	.03	.24
Maternal Attachment	.02	.03	.50
Controls			
Black	-.05	.07	-.73
Hispanic	-.04	.07	-.52
Other	-.32	.12	-2.54*
Female	-.04	.07	-.50
Self-control	-.01	.01	-.72
R ² = .01, F _(10, 927) = .80, p = .62			

Note: * = p < .05; ** = p < .01. The direct effect of parental incarceration on offending was -.01 (p = .90). Indirect effects were not significant.

Table 41. Successive PROCESS Model Results for Pathways Study Predicting Offending at 18-Month Follow-Up.

<u>Variable</u>	<u>N</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	1,133	.56	.10	5.60***
Parental Incarceration		.03	.04	.62
Antisocial Beliefs		.02	.06	.33
Constant	1,120	.59	.12	4.93***
Parental Incarceration		.02	.04	.48
Antisocial Beliefs		.01	.06	.14
Neutralization		-.00	.01	-.36
Constant	1,109	.58	.12	4.70***
Parental Incarceration		.02	.04	.40
Antisocial Beliefs		-.00	.07	-.04
Neutralization		-.00	.01	-.24
Delinquent Peers		.01	.03	.45
Constant	940	.51	.19	2.71**
Parental Incarceration		-.01	.05	-.13
Antisocial Beliefs		.03	.08	.45
Pun3		-.00	.01	-.22
Delinquent Peers		.01	.03	.23
Maternal Attachment		.02	.03	.51
Constant	684	.72	.29	2.50*
Parental Incarceration		.01	.06	.12
Antisocial Beliefs		-.08	.09	-.84
Neutralization		-.00	.01	-.48
Delinquent Peers		.03	.04	.84
Maternal Attachment		.02	.04	.56
School Bonds		-.04	.05	-.75
Constant	335	.42	.39	1.06
Parental Incarceration		.09	.08	1.20
Antisocial Beliefs		-.04	.12	-.33
Neutralization		-.01	.01	-.65
Delinquent Peers		.07	.05	1.26
Maternal Attachment		-.01	.07	-.19
School Bonds		-.03	.07	-.42
Paternal Attachment		.07	.05	1.46

Constant	190	1.17	.54	2.16*
Parental Incarceration		-.11	.11	-1.06
Antisocial Beliefs		-.17	.16	-1.03
Neutralization		-.02	.02	-1.04
Delinquent Peers		.11	.08	1.42
Maternal Attachment		-.08	.09	-.90
School Bonds		-.06	.09	-.66
Paternal Attachment		.07	.07	.94
Parental Monitoring		-.03	.06	-.50

Note: * = $p < .05$; ** = $p < .01$; *** = $p < .001$

Table 42. Successive PROCESS Model Results for Pathways Study Predicting Offending at 12-84-Month Follow-Up.*

<u>Variable</u>	<u>N</u>	<u>b</u>	<u>SE</u>	<u>t</u>
Constant	1,111	3.22	.44	7.27***
Parental Incarceration		1.28	.20	6.37***
Antisocial Beliefs		.27	.28	.99
Constant	1,099	3.16	.54	5.83***
Parental Incarceration		1.27	.20	6.30***
Antisocial Beliefs		.29	.29	1.02
Neutralization		.01	.04	.26
Constant	1,087	3.21	.56	5.70***
Parental Incarceration		1.29	.20	6.33***
Antisocial Beliefs		.27	.30	.90
Neutralization		.01	.04	.17
Delinquent Peers		.00	.13	.01
Constant	926	3.61	.83	4.33***
Parental Incarceration		1.27	.22	5.72***
Antisocial Beliefs		.15	.34	.44
Neutralization		.02	.04	.48
Delinquent Peers		.10	.14	.67
Maternal Attachment		-.13	.16	-.82
Constant	676	4.28	1.30	3.30**
Parental Incarceration		1.25	.26	4.74***
Antisocial Beliefs		-.02	.41	-.04
Neutralization		.01	.05	.30
Delinquent Peers		.07	.17	.39
Maternal Attachment		-.03	.20	-.17
School Bonds		-.16	.23	-.70
Constant	330	5.22	1.87	2.79**
Parental Incarceration		1.22	.38	3.20**
Antisocial Beliefs		-.51	.62	-.82
Neutralization		.01	.07	.14
Delinquent Peers		.04	.26	.16
Maternal Attachment		.00	.32	.01
School Bonds		-.36	.33	-1.10
Paternal Attachment		.13	.26	.50

Constant	190	5.17	2.63	1.96
Parental Incarceration		1.19	.51	2.33*
Antisocial Beliefs		-.71	.83	-.86
Neutralization		-.11	.10	-1.13
Delinquent Peers		.26	.40	.64
Maternal Attachment		.01	.45	.03
School Bonds		-.47	.44	-1.08
Paternal Attachment		.26	.36	.73
Parental Monitoring		.27	.31	.88

Note: † = $p < .10$; * = $p < .05$; ** = $p < .01$; *** = $p < .001$

* The direct effects were significant and were as follows:

1st Model: DE = 1.28***

2nd Model: DE = 1.27***

3rd Model: DE = 1.29***

4th Model: DE = 1.27***

5th Model: DE = 1.25***

6th Model: DE = 1.22**

7th Model: DE = 1.19*

No indirect effects were significant.