Parental Incarceration as a Unique Risk Factor for Delinquency and Psychopathology: Examining Mentorship as a Buffer

Emma Preston

Follow this and additional works at: https://scholarworks.wm.edu/honorstheses

Part of the Clinical Psychology Commons, and the Community Psychology Commons

Recommended Citation

This Honors Thesis is brought to you for free and open access by the Theses, Dissertations, & Master Projects at W&M ScholarWorks. It has been accepted for inclusion in Undergraduate Honors Theses by an authorized administrator of W&M ScholarWorks. For more information, please contact scholarworks@wm.edu.
Parental Incarceration as a Unique Risk Factor for Delinquency and Psychopathology:

Examining Mentorship as a Buffer

A thesis submitted in partial fulfillment of the requirement for the degree of Bachelor of Arts in Psychological Sciences from The College of William and Mary

by

Emma Grace Preston

Accepted for Honors

Dr. Adrian Bravo, Chair

Dr. Meghan Sinton-Miller

Dr. Kelly Crace

Williamsburg, VA
November 12, 2019
Dedication
In honor of Laura S. L. Preston

Acknowledgements
The author gratefully acknowledges the support and initiative of Drs. Adrian Bravo and Meghan Sinton-Miller as well as the ongoing support of Dr. Elizabeth Raposa. A special thanks to Ti Hsu for statistical and emotional support. Finally, the author would also like to acknowledge the support of donors from the William & Mary Charles Center and those friends and family whose support made this thesis possible.
Abstract

Parental incarceration affects millions of children in the United States annually yet researching the impact of parental incarceration is difficult given frequent co-occurring experiences of risk. Race, socioeconomic status, childhood exposure to violence, and childhood abuse are independently linked to parental incarceration and negative adult outcomes. Despite this difficulty, prior research demonstrates relationships between parental incarceration and delinquency and psychopathology in adulthood, therefore an understanding of protective factors that may offset this risk is necessary. Natural mentoring has become an increasingly popular area of study, as natural mentors are often more accessible to at-risk youth. The current study utilized a nationally representative dataset (N = 14,701) to: 1) examine parental incarceration in the context of concurrent exposure to risk and 2) examine natural mentors as buffers of the relationship between parental incarceration and likelihood of arrests, suicidality, and binge-drinking in young adulthood. Results indicated that parental incarceration predicted criminality (OR = 2.06; 95% CI = 1.72, 2.48), suicidal ideation (OR = 1.36; 95% CI = 1.07, 1.72), and binge-drinking (OR = 1.27; 95% CI = 1.02, 1.58) over and above cumulative exposure to risk. Results also demonstrated that an individuals’ closeness with a natural mentor during early adulthood marginally buffered the relationship between parental incarceration and suicidal ideation. These findings indicate that parental incarceration has a strong, independent impact on behavioral and psychological outcomes. The findings are also some of the first to examine natural mentors in the context of incarcerated parents and tentatively suggest that a greater degree of closeness with a non-parental adult could protect against suicidal ideation, but significantly future research is needed.

Keywords: incarceration, mentorship, delinquency, prevention
Introduction

Nearly 2.3 million convicted individuals spent time behind bars in the United States in 2019, and around 10.6 million people are arrested and admitted to jail yearly, resulting in a tremendous impact of mass incarceration on communities across the nation (Zeng, 2018). Yet the impact of mass incarceration goes far beyond the imprisoned individuals, taking a huge toll also on their partners, children, parents, and friends (Sawyer & Wagner, 2019). Approximately 2.7 children in the United States have an incarcerated parent, and if this number included the number of children who have had a parent in prison at some point in their life, this number would be much higher (Barnert & Chung, 2018). Scholars estimate that 7% of all children in the United States have had or currently have a parent in prison (Wakefield & Wildeman, 2018). Moreover, parental incarceration frequently exists alongside numerous other risk factors making the unique impact of this experience difficult to discern (Johnson & Easterling, 2012). Given the high number of children effected by parental incarceration, the current study aims to understand how having a parent in prison impacts risky psychological and behavioral outcomes during adulthood as well as examine factors that may offset this specific risk.

Parental incarceration frequently disrupts key domains of child development, including attachment and family structures. Parental incarceration severely disrupts the attachment bond and, given the nature of forced separation, it is often difficult for parents to rebuild the bond and reconcile with their child (Arditti, 2012). A secure attachment to a parent helps to shape future behavior, relationships, and careers throughout adulthood (Bowlby, 1998). Secure attachment influences the behavior and development of adolescents, with securely attached teens engaging in less risky behaviors and utilizing healthier coping skills compared to insecurely attached teens (Buist, Deković, Meeus, van Aken, 2004; Moretti & Peled, 2004). Likewise, parents can
positively influence child development and emotion regulation by modeling healthy behaviors and providing discipline structure (Kiff, Lengua, & Zalewski, 2011). Unlike other forms of parental separation (i.e. divorce) where a child usually has access to both parents, parental incarceration is forced and limits the child’s access to the parent indefinitely, with some children being unable to see their parent at all due to distance from prisons, prison rules, lack of transportation, etc. (Fishman, 1983; Hariston, 2002; Murray & Murray, 2010). Moreover, parental incarceration also places a burden on the child as they must reconcile their knowledge about and feelings towards their parent and with their parent’s actions that resulted in their arrest/imprisonment (California Department of Corrections and Rehabilitation and Friends Outside, n.d.). In some instances, this results in the child adopting a more negative attitude towards their parent, including deciding that their parent is not moral, safe, trustworthy, etc. (Lander, 2012), a judgement that further separates the child from their parent. However in other instances, the child may remain loyal to their parent and instead begin to distrust their community, law enforcement, and governmental institutions (Lee, Porter, & Comfort, 2014; Reed & Reed, 1997), leading to a complicated relationship between the child and their external environment.

In addition to disrupting the parent/child relationship, parental incarceration also impacts a child’s home life, increasing chaos and instability within the child’s home and makes it difficult for the child to experience healthy development (Murray & Murray, 2010; Poehlmann, 2005). Parental incarceration frequently places a strain on the relationship between the child’s parents, which can in turn increase pressure and confusion in the child and threaten their sense of security (Davies & Woitach, 2008; Hariston, 2002). In some cases, the child’s remaining parent may be unable to care for them or they may not have a remaining parent. Indeed, children of
incarcerated parents are at an increased risk for spending time in the foster care system and experiencing financial difficulties as incarceration frequently removes both a source of income and a caregiver from the child (DeFina & Hannon, 2010; Hariston, 2002). Both of these experiences dramatically threaten the child’s sense of safety and inhibit healthy socioemotional development.

**Parental Incarceration and High-Risk Behaviors Across Adolescence and Adulthood**

**Delinquency and criminal justice involvement.** Prior research demonstrates a strong relationship between parental incarceration and a host of negative behaviors such as increased risk for delinquency and involvement with the criminal justice system (Davis & Shalfer, 2017; Geller et al., 2012; Turney, 2014). Children, especially boys, with a parent in prison are more likely to engage in aggressive and antisocial behaviors than children without a parent in prison (Geller et al., 2012; Martin, 2017; Wildeman, 2010). Children of incarcerated parents are three times more likely to experience conduct or behavior issues than other children their age (Turney, 2014). Aggression in childhood often leads to social isolation and increased academic and social difficulties later in life, making social interactions and academic success more difficult (Buchmann, 2014). Beyond childhood, children of incarcerated parents are six times more likely to be incarcerated themselves, with those of incarcerated mothers often reporting a younger age of first arrest and more frequent arrests across their lifetime (Kopak & Smith-Ruiz, 2016). The relationship between parental incarceration and criminal justice involvement also exists across racial lines, with boys whose fathers spent time in prison having a greater risk of being arrested before 25, regardless of race (Roettger & Swisher, 2011). Aside from involvement with the criminal justice system, parental incarceration can predict antisocial personalities and decreased life success in men as old as 32, demonstrating the far reaching consequences of having a parent...
in prison (Murray & Farmington, 2005). Therefore, rather than being a corrective measure, parental incarceration often becomes a predictor of future crime and aggression.

Exposure to violent crime and poverty in childhood also predicts involvement with the criminal justice system in adulthood (Jonson-Reid, 1998). Given that parental incarceration often occurs alongside violent crime and/or poverty, determining the strength of the relationship between parental incarceration and child involvement with the criminal justice becomes difficult (DeHart & Altshuler, 2009). The current study will examine the association between parental incarceration and arrests and young adulthood while controlling for other childhood experiences that often co-occur with parental incarceration and predict involvement with the criminal justice system (e.g. exposure to violence and childhood poverty).

Substance use. In addition to predicting a child’s aggressive behaviors and future involvement with the criminal justice system, parental incarceration also predicts an individual’s substance use and abuse across development (Quinn et al., 2019; Simmons, 2000). Adolescents with a history of parental incarceration report experimenting with prescription drugs, engaging in binge drinking, and using alcohol recently at double the amount that teens without such a history report (Davis & Shalfer, 2017). Paternal incarceration also predicts both marijuana and other illegal drug use in both male and female young adults (Roettger, Swisher, Kuhl, & Chavez, 2011). Some researchers posit that increased substance abuse could be a coping mechanism that occurs when children of incarcerated parents are not able to process the trauma of the separation in a healthy way (Reed & Reed, 1997). Others posit that since parental incarceration often occurs for drug-related offenses, children of these parents have easier and earlier access to substances (Greene, Haney, & Hurtado, 2000). However, as mentioned previously, understanding the unique impact of parental incarceration on an individual’s substance abuse is often made difficult
due to the presence of co-occurring risk factors. Paternal incarceration is also positively correlated with poverty, maternal alcohol abuse, and less paternal involvement, all of which also independently predict substance use (Dishion & Loeber, 1985; Englund, Egeland, Olivia, & Collins, 2008; Kaplan-Sanoff, Parker, & Zuckerman, 1991). Likewise, in a longitudinal study of Australian youth, 14-year olds with a history of parental incarceration were 1.68 times more likely to use substances than youth without a history (Kinner et al., 2007). However, when the researchers controlled for socioeconomic status and other home circumstances, the results lost their statistical significance (Kinner et al., 2007). It is therefore possible that other, concurrent risk factors more strongly predict substance use than parental incarceration.

Moreover, much of the research investigating the link between parental incarceration and substance abuse focuses on illegal drug use (Quinn et al., 2019; Simmons, 2000). While this research is necessary and important, it is also important to better understand the link between parental incarceration and alcohol use and abuse given the easy accessibility of alcohol and the numerous links between alcohol abuse and health problems such as cardiovascular disease and hypertension (Beilin & Puddey, 1993). Given the current mixed findings on the predictive role of parental incarceration and substance abuse, and the lack of literature on parental incarceration’s impact on adult alcohol abuse, the current study will investigate the relationship between parental incarceration and binge drinking in young adulthood, controlling for other, often concurrent childhood experiences of risk.

**Social isolation, depressive symptoms, and suicidality.** Parental incarceration is also linked to difficulties in psychosocial functioning and increased risk of depression and suicidality (Gaston, 2016; Swisher & Roettger, 2012). Children with a history of parental incarceration often experience depressive symptoms, PTSD, and social isolation (Lee, Fang, & Luo, 2013;
Simmons, 2000). Witnessing a parent’s arrest, watching the trial, and hearing the verdict can all be particularly traumatic experiences for children (Murray, Loeber, & Pardini, 2012). This trauma is often compounded by the questions, stigma, and judgement that frequently arise from friends, teachers, or other community members (Dawson et al., 2013; Nesmith & Ruhland, 2008). Therefore, parental incarceration often becomes an isolating as well as traumatic experience, with teens of incarcerated parents more likely to experience social isolation than those without a father in prison (Phillips & Gates, 2011; Lee, Fang, & Luo, 2016). Moreover, the upheaval and trauma that often occur alongside parental arrests place children and teens at greater need for social support. When the opposite occurs and children are excluded or bullied instead, depressive symptoms can become more pervasive (Murray 2007; Wilbur et al., 2007; Swisher & Roettger, 2012). Left unresolved, these depressive symptoms can negatively impact adult life, to the point of suicidality.

Prior research indicates that parental incarceration is positively associated with increased suicidality (Davis & Shalfer, 2017), with adults who report a history of parental incarceration, being 1.5 times more likely to report a suicide attempt than those without a history (Thompson, Kingree, & Lamis, 2019). Unfortunately, many children who have a parent in prison are also at an increased risk for experiencing physical, emotional, and/or sexual abuse (Greene, Haney, & Hurtato, 2000) all of which also predict suicidality, and therefore the relationship between parental incarceration and suicidality could be confounded by concurrent experiences of abuse. Since suicide is one of the leading causes of death in the United States, it is important to better understand the relationship between parental incarceration and adult suicide and how other exposure to risk and social support may moderate that relationship (NIMH, 2017). Therefore, the current study will examine the association between parental incarceration and suicidality in
young adulthood alongside other childhood experiences that frequently occur with parental incarceration and independently predict suicidality (i.e. childhood abuse) (Sachs-Ericsson, Rushing, Stanley, & Sheffler, 2015).

The Protective Role of Supportive Relationships for Children of Incarcerated Parents

Across studies, social support has been shown to reduce the risk of delinquency and psychopathology for those exposed to a variety of stressors, including parental incarceration (Luther, 2015; Rak & Patterson, 1996). For individuals who lack support from their family and/or close relationships with their parents, social support becomes even more critical. Stable families have the potential to buffer risk of perpetuating violence (Gorman-Smith, Henry, & Tolan, 2004), decrease risk for psychopathology such as depression (Ivanova & Israel, 2005), and increase academic performance (Sun & Li, 2011). Without a stable family or secure parental relationship, social support becomes a way for children to receive positive guidance and nurturance necessary for healthy development and growth (Rak & Patterson, 1996). Social support is particularly important and beneficial for children of incarcerated parents, who are already at an increased risk for delinquency, social isolation, and deviant social networks (Cochran, Siennick, & Mears, 2018; Reed & Reed, 1997). Children with a parent in prison with a strong system of social support frequently have higher self-esteem and are at decreased risk for psychopathology (Parke & Clarke-Stewart, 2002). Peer social support can increase feelings of belonging, minimize shame and isolation, and provide an avenue for self-acceptance (Parke & Clarke-Stewart, 2002). Moreover, prior research indicates that support from group interventions for children of incarcerated parents can be beneficial, as children have a space to connect over similar experiences, experience validation, and process trauma (Lopez & Bahnt, 2010).
Given the unique and risky situation of many children who experience parental incarceration, they have a strong need for social support. Unlike divorce or parental separation, incarceration often remains heavily stigmatized, with children of incarcerated parents frequently feeling shame or secrecy towards their situation (Hagen & Myers, 2003; Murray & Murray, 2010). This stigma in turn becomes a barrier to social support, as children who feel pressured to keep their parental incarceration a secret are often more likely to experience social isolation and shame, which in turn can exacerbate depressive symptoms and decreased self-esteem (Phillips & Gates, 2011). Without a healthy support system, children lack the opportunity to process trauma associated with parental incarceration and the opportunity to bond with peers and other community members (Hagen & Myers, 2003). Furthermore, this lack of social support increases the risk of psychopathology and aggression. Considering that children with a parent in prison are already at an elevated risk for these behaviors and symptoms, a lack of social support could be even more detrimental to their development.

**Mentorship as a Unique Avenue of Social Support**

Mentorship is one promising avenue of social support that has been empirically examined over the past 20 years. Mentorship exists in a variety of contexts and has been shown to positively impact youth in academic, psychosocial, and emotional realms (DeWit, DuBois, Erdem, Larose, & Lipman, 2016; DuBois, Holloway, Valentine, & Cooper, 2002; Rhodes & DuBois, 2008). Theoretical models of youth mentoring posit that a relationship with a supportive, non-parental adult can provide additional opportunity for a child to form a secure attachment, potentially bridging the gap that occurs when a child lacks that support from a parent (Rhodes, Spencer, Keller, Liang, & Noam, 2006). Mentors come from numerous contexts, and many of the most widely utilized and well-documented mentoring relationships exist inside the
context of a formal mentoring program. These formal mentoring programs pair volunteer mentors with referred youth and tend to target outcomes such as social skills or academic improvement (DuBois, Holloway, Valentine, & Cooper, 2002; DeWit, DuBois, Erdem, Larose, & Lipman, 2016). Prior research indicates that formal mentoring programs that target children with incarcerated parents can help facilitate academic engagement and increased interpersonal skills (Bruster, & Foreman, 2012). However, other research suggests that these programs can pose challenges when targeted to children of incarcerated parents, with youth reporting more disappointment in their mentoring relationships than children without an incarcerated parent, as well as high levels of early termination (Jucovy, 2003; Shlafer, Poehlmann, Coffino, & Hanneman, 2009).

Given the above points, recent research has sought to identify ways that youth can be supported in forming more organic, informal mentoring relationships with adults in their own social network. These kinds of naturally occurring mentoring relationships can offer mental, emotional, and behavioral benefits. In contrast to formal mentoring relationships, natural mentoring relationships form organically between a child and an older adult, such as a coach, teacher, or neighbor, and are frequently embedded in a youth’s community or regular routine (Luther, 2015; Southwick et al., 2007). These relationships buffer a host of negative outcomes among youth and young adults exposed to varying types of risk and are often more accessible to underserved youth (Dubois & Silverthorn, 2005; Hurd & Zimmerman, 2014; Rhodes, Ebert, & Fischer, 1992; Southwick et al., 2007; Timpe & Lunkenheimer, 2015). Mentorship may protect against depressive symptoms and foster resilience for individuals exposed to trauma (Rhodes et al., 1992; Southwick et al., 2007; Taylor & Roberts, 1995). A recent meta-analysis demonstrated that natural mentors can positively impact youth in both socioemotional (e.g. self-esteem) and
psychosocial (e.g. decreased aggression and suicidality) realms (Van Dam et al., 2018). Despite these promising outcomes, little research has examined the specific role natural mentors play in the relationship between parental incarceration and dangerous and delinquent youth outcomes.

**Difficulties Associated with the Study of Parental Incarceration**

While parental incarceration has been linked to a host of negative youth, adolescent, and adult outcomes, parental incarceration is also embedded in the context of larger community and social justice issues (Johnson & Easterling, 2012). Thus, children of incarcerated parents are at an increased risk for experiencing stress across numerous contexts, making it difficult to determine the individual impact of parental incarceration (Johnson & Easterling, 2012). In many instances, parental incarceration occurs within the context of racial discrimination. On average, 30% of Black men and 17% of Hispanic men will spend time in prison during their lifetime compared to only 6% of White men, meaning that a disproportionate amount of children at risk for stress and risk related to parental incarceration are a racial minority (The Sentencing Project, 2013). In addition to frequently occurring alongside racial discrimination, incarceration also often occurs in communities impacted by poverty, violent crime, and decreased resources (Bobo, 2009). Children in these communities often view incarceration as an inevitability, increasing their distrust in the justice system and their risk of delinquency (Bobo, 2009). Given the frequent co-occurrence of parental incarceration and childhood exposure to numerous risk factors understanding the unique impact of each risk factor on children can become difficult and challenging; yet children in these communities are some of the most vulnerable to delinquency and psychopathology and in the most need of support. In light of this difficulty, there has been a recent interest in identifying specific high-risk behaviors that are most closely linked with
parental incarceration while also accounting for the broader environment of stressors that frequently accompany parental incarceration.

The Current Study

The current study aimed to discover how natural mentors might buffer negative, long-term, dangerous and delinquent young adult behaviors associated with parental incarceration using data from the National Longitudinal Study of Adolescent to Adult Health (AddHealth). Specifically, the study examined how natural mentors impact (i.e., moderate) the relationship between parental incarceration and likelihood of arrests, binge drinking, and suicidality in the young adult population. Though prior research has established links between parental incarceration and criminal justice involvement, binge drinking, and suicidality, replication of these findings is needed, and little research has been done to understand how mentorship might moderate these relationships. More specifically, the AddHealth dataset provides data on natural mentors, supportive adult figures that may impact a teenager’s life different from a peer or an immediate family member. As mentioned above, this type of support can be particularly influential in a teen’s life. In order to investigate both the relationship between parental incarceration and risky adult outcomes and understand parental incarceration as an experience that often co-occurs with risk, the present study utilized two sets of models.

Non-cumulative risk models. The first set of models, the non-cumulative risk set, included only sex and age as covariates. We hypothesized that 1) in keeping with the prior literature, parental incarceration would be associated with a higher likelihood of each negative outcome. Given the research on mentorship as a promising form of social support, we also hypothesized that 2) reporting a mentor would buffer the relationship between parental incarceration and each outcome. Since current research links strong mentoring relationships to
the most positive outcomes (Grossman & Rhodes, 2002; Van Dam et al., 2018), we also hypothesized that 3) the participants’ level of closeness with their mentor would buffer the relationship between parental incarceration and each negative outcome.

**Cumulative risk models.** Since parental incarceration tends to co-occur with a variety of other stressful environments, an additional set of models were conducted that co-varied for stressful contexts frequently linked to parental incarceration. In the United States, being a racial minority is often associated with increased risk for involvement with the criminal justice system, frequently due to racial profiling and/or systematic poverty and decreased access to education due to systemic inequalities throughout the nation (Bobo, 2009; Williams, Priest, & Anderson, 2016). Likewise, parental socioeconomic status frequently predicts delinquency in adulthood (Yoshikawa, 1994). Childhood exposure to violence (i.e. witnessing violence, perpetuating violence, or being the victim of violence) is itself a traumatic event and is linked to both increased delinquency and psychopathology in adulthood (Jonson-Reid, 1998). Finally, childhood abuse (i.e. sexual, physical, and emotional) can have a significant negative impact on a child’s development and is also associated with delinquency and psychopathology in adulthood (Crittenden, Claussen, & Sugarman, 1994). While each of these experiences can powerfully (and negatively) shape a child’s development and adult behaviors, each of these experiences is also connected to parental incarceration (Christian, 2009; DeHart & Altshuler, 2009; Greene, Haney, & Hurtado, 2000; Rabuy & Kopf, 2015). Therefore, in order to determine the unique relationship between parental incarceration and each risky outcome, as well as more specifically understand the role of mentors, we included minority status, parental education, childhood family income, childhood exposure to violence, and childhood abuse as covariates in the risk models. We hypothesized that 4) parental incarceration would continue to be associated with each negative
behavioral outcome, 5) having a mentor would continue to buffer this relationship, and more specifically 6) that the participants’ level of closeness with their mentor would buffer each relationship.

Method

Procedure

Participants. Data from this study were drawn from the National Longitudinal Study of Adolescent to Adult Health (Add Health). This study analyzed data from Waves I, III, and IV. Wave I assessed individuals (N = 20,745) in grades 7-12 and will be used in this study to establish statistical weights and childhood exposure to most risk (parental incarceration and abuse were assessed retroactively at Wave IV). Wave III assessed the individuals (N = 15,170) at ages 18-26 and asked a series of questions regarding natural mentors. Wave IV (N = 15,701) assessed the individuals at ages 24-32 and included measures assessing parental incarceration, number of arrests, binge drinking, and suicidality in early adulthood.

In order to accurately control for the clustering model of data collection utilized by AddHealth and ensure accurate use of sampling weights, participants with missing or incomplete data were excluded from analysis. In this sample of participants selected for these analyses (N=14,701), the average age of participants at Wave IV (age 24-32) was 28.28 (SD = 1.74). Roughly half of the participants were female (50.5%) and White/non-Hispanic (51.6%). Over half of the participants did not have a parent with a college degree (66.3%), 11.6% reported experiencing childhood poverty, and more than one fourth of participants experienced community violence during childhood (26.2%). Parental incarceration and childhood abuse were both assessed retroactively at Wave IV, and 11.9% of respondents reported a history of parental
incarceration and 16.4% reported experiencing some physical, emotional, or sexual abuse in childhood. 55% of the 20,745 participants reported having a mentor. Of the participants who reported on their mentor status (N=12,184), 8,783 provided data on their current level of closeness with their mentor, and the average level of closeness was 2.61 (SD = 1.3). Within the sample, 21.2% reported at least one arrest, and 12.9% reported binge drinking at least once in the prior 30 days. Further, 5% of respondents indicated seriously contemplating suicide within the previous 12 months, and 1.1% reported attempting suicide at least once in the prior year. A complete report of demographic information can be found in Table 1.

**Measures**

**Parental incarceration.** At Wave IV, participants were asked if their biological mother or father had spent time in prison. Individuals received a “1” if they reported least one parent spending time in prison and a “0” if neither parent spent time in prison.

**Mentors.** At Wave III, participants were asked “Other than your parents or step-parents, has an adult made an important positive difference in your life at any time since you were 14 years old?” Individuals received a “1” if they reported the presence of a mentor and a “0” if they did not report a mentor’s presence.

**Mentor closeness.** At Wave III, if participants reported having a mentor, they were also asked “How close do you feel (to that person) these days?”. Respondents answered on a 0-4 scale, with 0 meaning “Not at all” and 4 meaning “Very close”. Differences in mentor closeness helped us differentiate between individuals who received a time-limited act of support and individuals who had more ongoing social support.

**Risk.** For the purposes of the aims of the study, several other childhood experiences of risk that frequently co-occur with parental incarceration were included.
Race/ethnicity. At Wave I, participants self-reported whether they identified with a racial/ethnic minority group (i.e. Black, Hispanic/Latino, etc.) or as European American/white. An individual who reported any ethnicity or race other than white was coded as a 1 and an individual who reported only white was coded as a 0. Of all the respondents, 49.9% identified as a racial minority.

Parental education. At Wave I, participants were asked “How far in school” each of their resident parents went. Individuals who reported a college degree for neither parent received a “1”, and individuals who reported a college degree for at least one parent received a “0”.

Family income. At Wave I, administered in 1994, the poverty line for a family of four in the United States was $14,800. An individual whose parent reported a household income at or below $14,800 received a “1” for childhood exposure to poverty, and an individual whose parent reported a household income above $14,800 received a “0”.

Abuse. Three types of childhood abuse were assessed retrospectively at Wave IV, emotional, physical, and sexual. Participants answered each question on a 1-6 scale, with 1 meaning “One time”, 2 meaning “Two times”, 3 meaning “three to five times”, 4 meaning “five to 10 times”, 5 meaning “10 times or more”, and 6 meaning “This has never happened”.

To assess emotional abuse, participants were asked, “Before your 18th birthday, how often did a parent or other adult caregiver say things that really hurt your feelings or made you feel like you were not wanted or loved?” To assess physical abuse, participants were asked “Before your 18th birthday, how often did a parent or adult caregiver hit you with a fist, kick you, or throw you down on the floor, into a wall, or down stairs?” To assess sexual abuse, respondents were asked, “How often did a parent or other adult caregiver touch you in a sexual way, force you to touch him or her in a sexual way, or force you to have sexual relations?”.
In order to create an accurate measure of total childhood exposure to abuse, a total abuse variable was created using the method outlined by LeTendre and Reed (2017). Participants who reported more than 10 instances of verbal abuse, two instances of physical abuse, or one instance of sexual abuse received a “1” and participants with less than this threshold received a “0”.

**Exposure to violence.** Childhood exposure to violence was assessed with a battery of questions at Wave I. In order to accurately measure the impact of childhood exposure to violence, a total exposure to violence variable was calculated using the method outlined by Farrel and Zimmerman (2017). Individuals who reported “witnessing the shooting or stabbing of another”, having “a knife or gun pulled on you”, being “shot at”, being “stabbed”, or being “jumped” received a “1”, and individuals who reported none of these instances received a “0”.

**Arrests.** At Wave IV, participants were asked “Have you ever been arrested”. Individuals who responded “yes” received a “1” and individuals who responded “no” received a “0”.

**Serious suicidal ideation.** At Wave IV, participants were asked “During the past 12 months, have you ever seriously thought about committing suicide?”. Individuals who responded “yes” received a “1” and individuals who responded “no” received a “0”.

**Suicide attempts.** At Wave IV, participants were asked “During the past 12 months how many times have you actually attempted suicide?”. Individuals who responded “no” received a “0”, and individuals who marked one or more times received a “1”.

**Binge drinking.** At Wave IV, participants were asked “Think of all the times you have had a drink during the past 30 days. How many drinks did you usually have each time? A "drink" is a glass of wine, a can or bottle of beer, a wine cooler, a shot glass of liquor, or a mixed drink”. According to the National Institute of Alcohol Abuse and Alcoholism, binge drinking is considered four or more drinks for women or five or more drinks for men in a single setting (i.e. 
2 hours) (National Institute on Alcohol Abuse and Alcoholism, n.d.). Therefore, in order to create a measure of binge drinking, men who responded with five or more drinks and women who responded with four or more drinks received a “1” and men who reported less than five drinks and women who reported less than four drinks received a “0”.

Analytic procedure

Data cleaning and variable creation were conducted using SPSS software and regression and moderation analyses were run using Stata. All analyses were run with logistic regression and age and sex were entered as covariates in every model. In order to accurately control for the clustering design of the Add Health dataset, and scale the results accurately based on the sampling design of the study, statistical weights were used in all analyses (Bell et al., 2012), and participants who had missing data or sample weights were excluded from analyses (Timpe & Lunkenheimer, 2015; Raposa, Erickson, Hagler, & Rhodes, 2018). Simple slopes were calculated to examine the significant moderation effects of mentor presence (N=12,184) and mentor closeness (N=8,783) on the relationship between parental incarceration and each outcome in both models.

Results

Descriptives and Correlations

Descriptive statistics and correlations for key variables are reported in Table 1. Parental incarceration was significantly correlated to likelihood of being arrested before age 24, seriously contemplating suicide and/or attempting suicide at least once within the previous year and engaging in binge drinking at least once within the prior 30 days. Parental incarceration was also significantly correlated to a history of childhood abuse, childhood exposure to community violence, childhood poverty, low parental education, and minority status. Presence of a mentor
was significantly correlated with decreased arrests and decreased suicide attempts, and among individuals who reported having a mentor, mentor closeness was significantly correlated with decreased report of arrests and decreased suicidal ideation.

**Main Effects of Parental Incarceration on High-risk Behaviors (Non-Cumulative Risk Models)**

When accounting for an individual’s age and sex, parental incarceration was significantly associated with a higher likelihood of that individual engaging in high-risk behaviors in adulthood (see Table 2). Specifically, individuals with a history of parental incarceration had elevated risk for being arrested before age 24 ($OR = 2.45; 95\% CI = 2.10, 2.86$), endorsing serious suicidal ideation in the past year ($OR = 1.52; 95\% CI = 1.25, 1.86$), attempting suicide within the previous year ($OR = 1.73; 95\% CI = 1.04, 2.86$), and reporting at least one instance of binge drinking in the past 30 days ($OR = 1.54; 95\% CI = 1.30, 1.83$).

**The Moderating Role of Mentoring on Risk Associated with Parental Incarceration**

When co-varying for age and sex, being able to identify at least one naturally-occurring mentor during adolescence did not statistically moderate the relationships between parental incarceration and young adults’ likelihood of being arrested before age 24 ($OR = 0.92; 95\% CI = 0.73, 1.17$), serious suicidal ideation within the previous year ($OR = 1.18; 95\% CI = 0.79, 1.75$), likelihood of attempting suicide within the previous year ($OR = 0.56; 95\% CI = 0.27, 1.14$), or binge drinking within the prior 30 days ($OR = 1.19; 95\% CI = 0.86, 1.63$) (see Table 3). Amongst those individuals who were able to identify a mentor during adolescence, having a closer relationship with that mentor did not significantly buffer any of the relationships between parental incarceration and negative adult outcomes (see Table 4).
Controlling for Broader Contexts of Stress in Predicting High-Risk Behaviors (Cumulative Risk Models)

Given the research indicating the frequent comorbidity of parental incarceration and other stressful early life experiences, a following set of analyses were run that included a range of other early life stressors in order to more accurately examine the unique effects of parental incarceration (See Table 5. When included in analysis with these other predictors, parental incarceration continued to be a significantly associated with a higher likelihood of being arrested before age 24 \((OR = 2.06; 95\%\ CI = 1.72, 2.48)\), higher likelihood of seriously contemplating suicide within the previous year \((OR = 1.36; 95\%\ CI = 1.07, 1.72)\), and higher likelihood of engaging in binge drinking within the prior 30 days \((OR = 1.27; 95\%\ CI = 1.02, 1.58)\). However, parental incarceration did not significantly predict likelihood of attempting suicide at least once within the previous year \((OR = 1.52; 95\%\ CI = 0.92, 2.52)\). It is important to note that other adversities also appeared to play a key role in risk for high risk behaviors, with some consistently predicting risk as or more strongly than parental incarceration (see Table 5).

The Impact of the Mentor in the Broader Context of Stress

When examining parental incarceration alongside the suite of risk factors discussed above, results showed that report of a mentor did not significantly moderate any of the relationships between parental incarceration and externalizing outcomes (see Table 6). The individual’s reported closeness with their mentor did not significantly moderate the relationships between parental incarceration and arrests \((OR = 0.98; 95\%\ CI = 0.87, 1.09)\), suicide attempts \((OR = 1.00; 95\%\ CI = 0.67, 1.51)\), or binge drinking \((OR = 0.89\ 95\%\ CI = 0.77, 1.03)\) (see Table 7).
The buffering impact of mentor closeness approached marginal significance in the relationship between parental incarceration and serious suicidal ideation \((OR = 0.81, 95\% \text{ CI} = 0.65, 1.02, p = 0.07)\). Exploratory simple slopes analysis revealed that individuals who reported parental incarceration and higher levels of current closeness with their mentor (one standard deviation above the mean) were less likely to engage in serious suicidal ideation \((b = 0.04, 95\% \text{ CI} = 0.003, 0.07)\) than individuals who reported parental incarceration and lower levels of closeness with their mentor (one standard deviation below the mean) \((b = -0.004, 95\% \text{ CI} = -0.03, 0.03)\), (see Figure 1).

**Discussion**

This study leveraged a nationally representative data set of youth followed longitudinally from adolescence through adulthood to explore the unique relationship between parental incarceration and risk of delinquency and suicidality in young adulthood, as well as whether natural mentors buffer that risk. Our findings indicate that parental incarceration was independently associated with dangerous and delinquent behaviors in early adulthood. The findings also suggest that a greater degree of closeness with a non-parental adult could protect against suicidal ideation, but significantly future research is needed.

**Parental Incarceration (Non-cumulative Risk Models)**

When co-varying for age and sex, parental incarceration predicted an increased likelihood of being arrested, seriously contemplating suicide, attempting suicide, and engaging in binge drinking during or prior to the age of 24. Results also demonstrated that neither the presence nor the closeness of a mentor significantly buffered any of relationships between parental incarceration and adverse outcomes. While these findings support the prior literature linking
parental incarceration with increased risk for delinquency and psychopathology in adulthood (Kopak & Smith-Ruiz, 2016; Roettger et al., 2011; Swisher & Roettger, 2012), they also contradict literature linking natural mentors to increased psychological and behavioral outcomes (Van Dam et al., 2018) and suggest that parental incarceration may be an experience of risk particularly difficult to offset.

**Parental Incarceration Co-Varying for Other Stressors (Cumulative Risk Models)**

The cumulative risk models controlled for racial minority, parental education, childhood poverty, childhood exposure to violence and childhood abuse, variables that have been linked independently to at least one negative behavioral outcome tested and parental incarceration. Results demonstrated that parental incarceration continued to predict a higher likelihood of being arrested before 24, seriously contemplating suicide within the year prior, and engaging in binge drinking during the last month. That parental incarceration continued to predict both risk for delinquency and serious suicidal ideation supports recent research indicating that parental incarceration is a unique risk factor that has a far-reaching impact (Kopak & Smith-Ruiz, 2016; Swisher & Roettger, 2012; Thompson, Kingree, & Lamis, 2019). Additionally, an individual’s current level of closeness with their mentor had a marginally significant buffering effect on the relationship between parental incarceration and serious suicidal ideation, with individuals reporting greater levels of mentor closeness during emerging adulthood being less likely to seriously contemplate suicide during early adulthood.

The cumulative risk model also yielded an unexpected finding: parental incarceration no longer predicted the likelihood of attempting suicide within the previous year. This loss of statistical significance highlights the interconnected nature of childhood exposure to risk and strengthens the theoretical understanding of parental incarceration as one of many related risk
factors in childhood (Greene, Haney, & Hurtato, 2000). This finding also expands prior literature that examined parental incarceration in the context of childhood risk, which found that parental incarceration lost its predictive relationship with childhood substance abuse when socioeconomic status and home circumstances were added into the model (Kinner et al., 2007). While further research in this area is needed, in both studies, the relationship between an adverse outcome and parental incarceration lost significance with the addition of other risk factors. These findings suggest that other factors may explain more variability than parental incarceration, and therefore future research is needed to pinpoint precise experiences of risk that accurately predict adverse outcomes.

It is also interesting to note that while parental incarceration no longer significantly predicted suicide attempts, it did predict suicidal ideation, and the only other risk factor to significantly predict suicidal ideation was childhood abuse. This finding suggests that parental incarceration may be an experience of risk with particularly strong ties to suicidality.

Historically, much of research related to parental incarceration has focused on externalizing outcomes of youth, such as involvement with the criminal justice system and substance abuse (Murray & Farmington, 2005; Roettger & Swisher, 2011; Roettger, Swisher, Kuhl, & Chavez, 2011; Kopak & Smith-Ruiz, 2016). While these externalizing outcomes are important to understand, our findings support newer research linking parental incarceration to severe and risky internalizing behaviors (Davis & Shlafer, 2017). Furthermore, since suicide is one of the leading causes of death among young adults in the United States, these findings provide valuable insight into determining particularly vulnerable populations of young adults.
Mentorship

Contrary to our hypothesis, the presence of a mentor during adolescence did not significantly buffer any of the relationships between parental incarceration and adverse outcomes in young adulthood in either the simple or the cumulative risk models. These findings suggest that a naturally-occurring, or informal, mentoring relationship is not enough to buffer the relationship between parental incarceration and delinquency or psychopathology. Given that relationships with caring, non-parental adults are frequently lauded as a form of social support for teens at risk, these findings were surprising. However, it may be that a teacher, coach, or other supportive adult made an important, one-time difference (i.e. helped them pass a class, deal with a difficult emotional situation, provided them with a reference, etc.) but did not provide active, ongoing social support. Prior mentoring research indicates that in order for mentoring relationships to generate lasting socioemotional, psychological, or behavioral effects, the relationship must last for a significant period of time and include emotional closeness (Grossman & Rhodes, 2002; Whitney, Hendricker, & Offut, 2011; Van Dam et al., 2018). Additionally, this lack of significance also suggests that a single caring relationship is ineffective in the face of entrenched social inequalities (e.g. racism and poverty). Children of incarcerated parents are some of the most vulnerable children in the United States and no one relationship, no matter how supportive, can completely counteract the adverse impact of systemic inequality and consistent exposure to risk in childhood and adolescence.

It was more surprising that current levels of closeness with a mentor did not significantly protect against any of the adverse outcomes in either the simple or risk models. A possible explanation for this finding lies in the method of assessment. The type of mentor was not included in our analyses, only mentor presence and mentor closeness were assessed. Therefore, a
mentor could be a professional or academic mentor who an individual may rely on for instrumental support, but not engage with on an emotional level. Prior research demonstrates that emotional closeness is important for natural mentoring relationships to generate lasting psychological and behavioral success (DuBois, Holloway, Valentine, & Cooper, 2002). Likewise, duration of mentorship also plays a large role in ensuring lasting success, and duration was not included in present analyses (Grossman & Rhodes, 2002). Moreover, as mentioned earlier, it is also possible that while a mentor may be impactful and important, they are simply unable to counteract the cumulative exposure to risk experienced by children of incarcerated parents. In light of these possibilities, future research is needed to determine if parental incarceration is an experience of risk particularly impervious to the benefits of natural mentors, or if more specific experiences of mentorship (e.g. emotional closeness, long-lasting relationships, type of mentor) not assessed in these analyses can effectively provide support.

Mentor closeness did marginally buffer the positive association between parental incarceration and suicidal ideation. This finding should be interpreted with caution until replicated in future studies. However, it indicates that in some cases a close, supportive relationship may offset suicide-related risk associated with parental incarceration. This finding is particularly salient given the prior research linking parental incarceration and suicidality in adulthood (Davis & Shalfer, 2017; Thompson, Kingree, & Lamis, 2019), provides insight to the potential ability of social support to offset this risk, and highlights the need for increased research in this area. Moreover, since this relationship did not gain significance until after we controlled for other types of childhood risk, this finding suggests that closeness of social support may be most relevant to the unique stress of having a parent in jail. This finding also supports prior research indicating that social support plays a strong role in buffering risk of
psychopathology, specifically suicidality (Kleiman, Riskind, Schaefer, & Weingarden, 2012; Kleiman & Liu, 2013), and extends this research more specifically to parental incarceration, a traditionally understudied experience of risk.

Furthermore, since mentor closeness marginally buffered the relationship between parental incarceration and suicidal ideation (and did not moderate any other, externalizing outcome) in the cumulative risk model, the results tentatively suggest that natural mentors during adolescence may be particularly beneficial to children of incarcerated parents experiencing or predisposed to internalizing rather than externalizing symptoms. Prior research links parental incarceration to social isolation and depressive symptoms in adolescence (Trout, 1980; Tuiksu et al., 2014), both of which in turn, predict suicidal ideation in adulthood (Harrington et al., 1994; Joiner et al., 2009). Therefore parental incarceration may have both a direct and indirect relationship to adult suicidality. The significant buffering effect of mentor closeness on suicidal ideation suggests that natural mentors may have a powerful and long-lasting impact on individuals with parents in prison prone to internalizing symptoms. Despite these interesting implications, significant future research is needed to fully understand this marginal effect.

Limitations

Several limitations of the study should be noted. The present study only assessed whether participants had a mentor at Wave III. Since Wave III reported mentorship since the age of 14 among individuals ages 18-26, it is possible that some participants gained a mentor after this time period, and that this mentor then influenced respondents’ early adulthood behavior. This could be a particular confound for younger individuals in the cohort. Although many mentors arise in high school early adolescence in the form of teachers or coaches, time spent in higher education programs and/or job experiences frequently provide individuals with more
opportunities to find natural mentors. In particular, mentorship on college campuses has become increasingly popular, with more and more professors, upperclassmen, and graduate students recognizing the benefits of investing in young adults and building meaningful relationships with them (Nugent, Childs, Jones, & Cook, 2004; Cramer & Prentice-Dunn, 2007; Brooms & Davis, 2017). Likewise, many professional settings build mentorships into their corporate structure, with coworkers and supervisors frequently becoming natural mentors in the workplace (Abbajay, 2013; Mikkonen, Pylvas, Rinatala, Nokelainen, & Postreff, 2017). The younger members of the cohort may have had less access to natural mentors than the older members of the cohort and therefore it is possible that these individuals gained a mentor prior to the Wave IV (ages 24-32). However, despite this limitation, measuring mentorship since 14, during the developmental window of emerging adulthood, can also be viewed as a strength. Mentors during this time have the opportunity to help shape emerging adults’ views on relationships with others and themselves, positive behaviors, and healthy coping skills (Van Dam et al., 2018). Furthermore, by addressing both mentor presence since 14 but current mentor closeness at ages 18-26, this method of assessment allows us to better understand both the role of social support during the adolescent years and the impact of a close relationship during emerging adulthood.

Another limitation of the study lies in the measurement of parental incarceration and exposure to abuse in childhood. Both parental incarceration and exposure to childhood abuse were assessed retroactively at Wave IV, whereas all other risk variables were assessed at Wave I. Given the sensitive nature of both questions, it follows that they would be assessed retroactively for ethical reasons. However, since parental incarceration was assessed retroactively and was associated with every negative outcome, we are unable to make causal inferences about its impact. Future research is needed to more firmly establish the causal relationship between
parental incarceration and negative outcomes in young adulthood. Additionally, the measures used in this study were single items designed to measure exposure to various traumas, rather than severity, context, or duration of parental incarceration, childhood abuse, or childhood exposure to violence. However, by utilizing these simplistic measures, we were able to leverage a high powered, nationally representative dataset. Future research is needed to examine which, if any, specific aspects of parental incarceration (and other childhood traumas) more strongly predict psychopathology and delinquency in adulthood.

**Conclusion**

Despite these limitations, this study provides valuable insight into the role of parental incarceration in the development of high-risk young adult outcomes and the potential power of social support to moderate these associations. Our findings support the current literature linking parental incarceration to a variety of risky outcomes (Wildeman, 2010; Geller et al., 2012; Martin, 2017; Thompson, Kingree, & Lamis, 2019) and demonstrate that parental incarceration is a unique risk factor that frequently co-occurs alongside other types of childhood risk but exerts an independent effect. These findings also highlight the association between parental incarceration and suicidal ideation and demonstrate the need for future research to examine the relationship between parental incarceration and suicidality and other dangerous, risky internalizing behaviors. Furthermore, our findings are some of the first to examine natural mentors in relation to parental incarceration and demonstrate that in many instances close, supportive relationships are not enough to counteract childhood exposure to stressful life circumstances. These findings also tentatively indicate that close, supportive natural mentoring relationships *could* positively impact emerging adults who with a history of parental incarceration experiencing internalizing symptoms. Future research is needed to examine more
specific mechanisms of natural mentorship and social support in predictive models in order to more accurately understand and deliver support to those impacted by incarcerated parents.


Appendix

Table 1. Demographics and correlations of key study variables (N = 20,745)

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>% Yes</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age (Wave IV)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Female</td>
<td>50.50%</td>
<td>-0.06**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Minority</td>
<td>49.40%</td>
<td>0.06**</td>
<td>0.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Low parental education</td>
<td>66.30%</td>
<td>0.07**</td>
<td>0.02**</td>
<td>0.08***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Childhood poverty</td>
<td>11.60%</td>
<td>0.02*</td>
<td>0.01</td>
<td>0.20***</td>
<td>0.23***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Parental incarceration</td>
<td>11.90%</td>
<td>-0.03**</td>
<td>0.01</td>
<td>0.05***</td>
<td>0.13***</td>
<td>0.13***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Childhood exposure to violence</td>
<td>26.20%</td>
<td>0.07**</td>
<td>-0.18***</td>
<td>0.15***</td>
<td>0.09***</td>
<td>0.09***</td>
<td>0.09***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Childhood abuse</td>
<td>16.40%</td>
<td>0.00</td>
<td>0.06***</td>
<td>0.00</td>
<td>0.04***</td>
<td>0.04***</td>
<td>0.14***</td>
<td>0.08***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Report of mentor</td>
<td>55%</td>
<td>-0.04**</td>
<td>0.33***</td>
<td>-0.08***</td>
<td>-0.10***</td>
<td>-0.07***</td>
<td>-0.02*</td>
<td>-0.04***</td>
<td>0.03**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Arrests</td>
<td>21.20%</td>
<td>0.00</td>
<td>-0.27***</td>
<td>0.02*</td>
<td>0.06***</td>
<td>0.06***</td>
<td>0.13**</td>
<td>0.19***</td>
<td>0.08***</td>
<td>-0.03***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Serious suicidal ideation</td>
<td>5%</td>
<td>-0.02*</td>
<td>0.02**</td>
<td>-0.02</td>
<td>0.01</td>
<td>0.01</td>
<td>0.05***</td>
<td>0.03***</td>
<td>0.14***</td>
<td>-0.01</td>
<td>0.06***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Suicide attempts (12 mo)</td>
<td>1.10%</td>
<td>-0.00</td>
<td>0.01</td>
<td>-0.01</td>
<td>0.02**</td>
<td>0.02*</td>
<td>0.03***</td>
<td>0.02*</td>
<td>0.05***</td>
<td>-0.02**</td>
<td>0.04***</td>
<td>0.30***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Binge drinking (30 days)</td>
<td>12.90%</td>
<td>-0.04**</td>
<td>0.10***</td>
<td>-0.07***</td>
<td>0.10***</td>
<td>0.05***</td>
<td>0.06</td>
<td>0.07***</td>
<td>0.03*</td>
<td>-0.04</td>
<td>0.21***</td>
<td>0.03*</td>
<td>0.04***</td>
<td></td>
</tr>
<tr>
<td>14. Mentor closeness</td>
<td></td>
<td>-0.01</td>
<td>0.11**</td>
<td>0.08**</td>
<td>0.06**</td>
<td>0.06**</td>
<td>0.03**</td>
<td>0.00</td>
<td>-0.03**</td>
<td>--</td>
<td>-0.03*</td>
<td>-0.04**</td>
<td>0.00</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Correlation for variables 2-13 (excluding 9) were conducted using cross tabulated phi models to account for categorical variable type. Average age was 28.28 (SD = 1.74, range = 23.28-34.69). Average mentor closeness (N = 8,783) was 2.61 (SD=1.3, range = 1-4).

* p < .05
** p < .01
*** p < .001
Table 2 Main effects of parental incarceration, sex, and age on key outcomes

<table>
<thead>
<tr>
<th></th>
<th>Arrests</th>
<th>Serious Suicidal Ideation</th>
<th>Suicide Attempts</th>
<th>Binge Drinking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR(SE)</td>
<td>CI (95%)</td>
<td>OR(SE)</td>
<td>CI (95%)</td>
</tr>
<tr>
<td>Parental Incarceration</td>
<td>2.45 (.19)</td>
<td>2.10-2.86</td>
<td>1.52 (.15)</td>
<td>1.25-1.86</td>
</tr>
<tr>
<td>Sex</td>
<td>0.28 (.01)</td>
<td>0.25-0.3</td>
<td>1.13 (.12)</td>
<td>0.91-1.41</td>
</tr>
<tr>
<td>Age</td>
<td>0.98 (.02)</td>
<td>0.95-1.02</td>
<td>0.99 (.03)</td>
<td>0.93-1.05</td>
</tr>
</tbody>
</table>
Table 3. Summary of effects of parental incarceration and mentor presence on risky adult outcomes in the simple models

<table>
<thead>
<tr>
<th></th>
<th>Arrests</th>
<th>Suicidal Ideation</th>
<th>Suicide Attempts</th>
<th>Binge Drinking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Parental Incarceration (PI)</td>
<td>2.43</td>
<td>1.98-2.996</td>
<td>1.27</td>
<td>0.97-1.94</td>
</tr>
<tr>
<td>Mentor Presence (MP)</td>
<td>0.90</td>
<td>0.8-0.998</td>
<td>0.89</td>
<td>0.74-1.07</td>
</tr>
<tr>
<td>PI x MC</td>
<td>0.92</td>
<td>0.73-1.17</td>
<td>1.18</td>
<td>0.79-1.75</td>
</tr>
</tbody>
</table>
Table 4. Summary of effects of parental incarceration and mentor closeness on risky adult outcomes in the simple models

<table>
<thead>
<tr>
<th></th>
<th>Arrests</th>
<th>Suicidal Ideation</th>
<th>Suicide Attempts</th>
<th>Binge Drinking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Parental Incarceration (PI)</td>
<td>2.06</td>
<td>1.96-3.46</td>
<td>2.05</td>
<td>1.34-3.12</td>
</tr>
<tr>
<td>Mentor Closeness (MC)</td>
<td>1.01</td>
<td>0.97-1.06</td>
<td>0.89</td>
<td>0.83-0.96</td>
</tr>
<tr>
<td>PI x MC</td>
<td>0.94</td>
<td>0.85-1.04</td>
<td>0.91</td>
<td>0.78-1.06</td>
</tr>
</tbody>
</table>
### Table 5. Main effects of parental incarceration and co-occurring risk factors on key outcomes in the cumulative risk models

<table>
<thead>
<tr>
<th></th>
<th>Arrests</th>
<th>Serious Suicidal Ideation</th>
<th>Suicide Attempts</th>
<th>Binge Drinking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (SE)</td>
<td>CI (95%)</td>
<td>OR (SE)</td>
<td>CI (95%)</td>
</tr>
<tr>
<td>Parental Incarceration</td>
<td>2.06 (.19)</td>
<td>1.72-2.48</td>
<td>1.36 (.16)</td>
<td>1.07-1.72</td>
</tr>
<tr>
<td>Sex</td>
<td>0.27 (.02)</td>
<td>0.24-0.31</td>
<td>1.02 (.12)</td>
<td>0.80-1.29</td>
</tr>
<tr>
<td>Age</td>
<td>0.96 (.02)</td>
<td>0.93-1.00</td>
<td>0.97 (.04)</td>
<td>0.90-1.05</td>
</tr>
<tr>
<td>Low Parental Education</td>
<td>1.23 (.08)</td>
<td>1.08-1.41</td>
<td>0.98 (.13)</td>
<td>0.76-1.28</td>
</tr>
<tr>
<td>Childhood Poverty</td>
<td>1.28 (.11)</td>
<td>1.07-1.54</td>
<td>1.17 (.17)</td>
<td>0.88-1.55</td>
</tr>
<tr>
<td>Childhood Abuse</td>
<td>1.43 (.10)</td>
<td>1.25-1.64</td>
<td>2.38 (.20)</td>
<td>2.00-2.82</td>
</tr>
<tr>
<td>Childhood Exposure to Violence</td>
<td>1.92 (.14)</td>
<td>1.67-2.23</td>
<td>1.08 (.14)</td>
<td>0.84-1.39</td>
</tr>
<tr>
<td>Minority Status</td>
<td>1.02 (.08)</td>
<td>0.87-1.20</td>
<td>1.00 (.14)</td>
<td>0.77-1.31</td>
</tr>
</tbody>
</table>
Table 6. Summary of effects of parental incarceration and mentor closeness on risky adult outcomes in the cumulative risk models

<table>
<thead>
<tr>
<th></th>
<th>Arrests OR</th>
<th>95% CI</th>
<th>Suicidal Ideation OR</th>
<th>95% CI</th>
<th>Suicide Attempts OR</th>
<th>95% CI</th>
<th>Binge Drinking OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Incarceration (PI)</td>
<td>2.14</td>
<td>1.66-2.75</td>
<td>1.08</td>
<td>0.71-1.63</td>
<td>1.72</td>
<td>0.86-3.46</td>
<td>1.04</td>
<td>0.75-1.45</td>
</tr>
<tr>
<td>Mentor Presence (MP)</td>
<td>0.97</td>
<td>0.86-1.10</td>
<td>0.87</td>
<td>0.70-1.08</td>
<td>0.70</td>
<td>0.45-1.09</td>
<td><strong>0.78</strong></td>
<td><strong>0.67-0.91</strong></td>
</tr>
<tr>
<td>PI x MC</td>
<td>0.87</td>
<td>0.65-1.16</td>
<td>1.21</td>
<td>0.75-1.93</td>
<td>0.70</td>
<td>0.29-1.64</td>
<td>1.23</td>
<td>0.84-1.78</td>
</tr>
</tbody>
</table>
Table 7. Summary of effects of parental incarceration and mentor closeness on risky adult outcomes in the cumulative risk models

<table>
<thead>
<tr>
<th></th>
<th>Arrests</th>
<th></th>
<th>Suicidal Ideation</th>
<th>Suicide Attempts</th>
<th>Binge Drinking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>OR</td>
<td>95% CI</td>
<td>b</td>
</tr>
<tr>
<td>Parental Incarceration (PI)</td>
<td></td>
<td>--</td>
<td>1.98</td>
<td>1.43-2.75</td>
<td>--</td>
</tr>
<tr>
<td>Mentor Closeness (MC)</td>
<td></td>
<td>--</td>
<td>1.01</td>
<td>0.96-1.06</td>
<td>--</td>
</tr>
<tr>
<td>PI x MC</td>
<td></td>
<td>--</td>
<td>0.98</td>
<td>0.87-1.09</td>
<td>--</td>
</tr>
<tr>
<td>Effect of PI at low (1 SD below mean) MC</td>
<td></td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>0.04</td>
</tr>
<tr>
<td>Effect of PI at high (1 SD above mean) MC</td>
<td></td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-0.004</td>
</tr>
</tbody>
</table>

Effect of PI x MC had a marginally significant p value of 0.07
Figure 1. Mentor Closeness Buffers Relationship between Parental Incarceration and Suicidal Ideation