

ASSOCIATIONS BETWEEN PARENTAL DEPRESSIVE SYMPTOMS, COPARENTING,
AND BEHAVIOR OUTCOMES IN YOUNG CHILDREN WITH PREVIOUSLY
INCARCERATED FATHERS

by

Alexandria S. Pech

Copyright © Alexandria S. Pech 2017

A Thesis Submitted to the Faculty of the

DEPARTMENT OF FAMILY STUDIES AND HUMAN DEVELOPMENT

In Partial Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

In the Graduate College

THE UNIVERSITY OF ARIZONA

2017

STATEMENT BY AUTHOR

The thesis titled *Associations between Parental Depressive Symptoms, Coparenting, and Behavior Outcomes in Young Children with Previously Incarcerated Fathers* prepared by Alexandria S. Pech has been submitted in partial fulfillment of requirements for a master's degree at the University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this thesis are allowable without special permission, provided that an accurate acknowledgement of the source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the copyright holder.

SIGNED: *Alexandria S. Pech*

APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

Melissa A. Curran

Associate Professor of Family Studies and Human Development

Defense date

December 5, 2016

ACKNOWLEDGEMENTS

First, I would like to thank my thesis advisor, Dr. Melissa Curran. Thank you for the countless pep talks that you have provided over the years especially during difficult moments when I suffered immensely from imposter syndrome. You have been unconditionally supportive of my development as a graduate student and researcher. I am grateful for your mentorship that included your expertise on how to use my voice to negotiate and “ask for it.” I am grateful for your patience as I navigated the program as a first-generation graduate student of color. I am grateful for your dedication to countless edits of my work and for your patience when teaching me SPSS. Without your mentorship and guidance, I would not have completed my first 3 years in the program. Without your mentorship and guidance, I would not have acquired the skillset necessary for the career I desire. For that, I thank you from the bottom of my heart. Second, I would like to thank my committee members: Drs. Melissa Barnett and Katherine Paschall. I want to thank Dr. Barnett for your enthusiasm of my work for children of incarcerated parents. It has been an honor building a relationship with you as your teaching assistant, research assistant and graduate student enrolled in your courses. And, I would like to thank Dr. Paschall for taking on the role of a mentor as I navigated the world of statistics. Your patience and passion for research is something I greatly admire. Having the three of you on my committee has been an honor.

Third, I would like to thank all of my friends and family for being there for me during the lows and highs of the first three years of graduate school. Without your support, I would not have survived this journey. Specifically, to my University of Arizona support system that built me back up at my lowest points and provided me with life-long friendships: Maura Shramko, Melissa Flores, Nila Shakiba, Sei Kim, Olena Kopystynska, Shannon Warren, and Dr. Chandni Parikh. May we always continue to build each other up. I want to thank my compañero/as from the NOPALab for reminding me, that the greatest weapon we have, if we want to survive academia as graduate students of color, is self-love. I want to thank, Dr. Barbara Bloom, my McNair Scholars mentor who has become my life mentor. You encourage me to share my story to humanize others’ lived experiences. Thank you for seeing the power in my story. When I grow up, I want to be just like you.

Dedication

I dedicate this work to my mother, Ernestine L. Rubio. You are the reason I am able to pursue my education without any constraints. When I have been ready to give up, you remind me of my purpose. You sacrifice, so I can walk across this stage. This is your degree as much as it is mine. I dedicate this work to my life partner, Janssen Todd. You are my biggest cheerleader and you always have my back. My happiest of moments in Tucson are all because of you and Dakota. I am so blessed to have you as a partner and best friend. To my sisters, Desiree and Cierra, I hope you know how much I love you and when I have wanted to quit, I often think of you both to help me get back on track. I dedicate this work to the Pech family, especially my Tio Frank Pech and Grandma Irene Pech who love me unconditionally every step of the way. To my Jacquez family and Rubio family, especially my baby cousins, Christina, Ernest, Kaylen, Mariah, Josh and Jacob. Your love keeps me going. I sacrifice not being able to watch you all grow up so that when the day comes and you want to pursue higher education, I will be there for you every step of the way. Further, in the words of J.Cole, I dedicate this work “to all the other children affected by mass incarceration in this nation that sent your pops to prison when he needed education.” I see you, I hear you and I love you. Lastly, I dedicate this work to me. I have not always been the kindest person to myself, but when it is all said and done, I could not have done this work without me.

TABLE OF CONTENTS

ABSTRACT.....	8
INTRODUCTION.....	9
REVIEW OF THE LITERATURE.....	10
METHOD.....	23
I. <i>Participants</i>	23
II. <i>Measures</i>	24
ANALYTIC PLAN.....	27
RESULTS.....	28
DISCUSSION.....	31
REFERENCES.....	40
TABLES.....	51
I. <i>Table 1: Descriptive Statistics of Participants</i>	51
II. <i>Table 2: Descriptive Statistics of Main Study Constructs</i>	52
III. <i>Table 3: Correlations of Demographics & Key variables</i>	53
IV. <i>Table 4: Hierarchical Multiple Regression Results</i>	54
FIGURES.....	56
I. <i>Figure 1: Hypothesis 1</i>	56
II. <i>Figure 2: Hypothesis 2</i>	57
III. <i>Figure 3: Hypothesis 3a and 3b</i>	58
IV. <i>Figure 4: Two-way interaction</i>	59
APPENDICES.....	60
I. Appendix A.....	60

List of Tables

TABLES.....	51
I. <i>Table 1: Descriptive Statistics of Participants</i>	51
II. <i>Table 2: Descriptive Statistics of Main Study Constructs</i>	52
III. <i>Table 3: Correlations of Demographics & Key variables</i>	53
IV. <i>Table 4: Hierarchical Multiple Regression Results</i>	54

List of Figures

FIGURES.....56

I. *Figure 1*: Hypothesis 1.....56

II. *Figure 2*: Hypothesis 2.....57

III. *Figure 3*: Hypothesis 3a and 3b.....58

IV. *Figure 4*: Two-way interaction.....59

Abstract

The purpose of the study is to examine young children's internalizing and externalizing behaviors in the context of post paternal incarceration by focusing on both risks (i.e., parental depressive symptoms), protective factors (i.e., coparenting alliance), and their impact considered together. The final sample included 426 previously incarcerated fathers and the biological mothers of their three-year-old children. Using hierarchical multiple regression, I examined three sets of analyses: 1) the association between parental depressive symptoms and children's behavior outcomes, 2) the association between coparenting alliance and children's behavior, 3) the association between parental depressive symptoms and children's behavior as moderated by coparenting alliance. Expectedly, higher paternal depressive symptoms were associated with higher externalizing behavioral problems in children. Unexpectedly, higher maternal depressive symptoms were associated with lower externalizing behavioral problems. Also, unexpectedly, the associations between maternal and paternal coparenting alliance and both child behavioral outcomes were not statistically significant. Further, when mothers reported lower coparenting alliance with their child's father, the negative association between fathers' depressive symptoms and children's internalizing behavioral problems was not attenuated; in fact, children had higher internalizing behavioral problems. My findings suggests father's depressive symptoms are an important point of consideration given the deleterious effects parental depressive symptoms can have on children, and the risks for depressive symptoms among formerly incarcerated fathers. Further, my findings have implications for addressing and treating fathers' depressive symptoms when children are relatively young in order to lower internalizing behavior problems from persisting across and beyond childhood.

Associations between Parental Depressive Symptoms, Coparenting, and Behavior Outcomes in
Young Children with Previously Incarcerated Fathers

The growing number of children with an incarcerated parent is one of the many collateral consequences of mass incarceration (Geller, Garfinkel & Western, 2011). Five million children have experienced a residential parent (e.g., parent living with child) who has gone to jail or prison at some point in their lives, amounting to seven percent of the US population of children (Murphey & Cooper, 2015). Parental incarceration can be as deleterious to children's health as other adverse family experiences including parental death, divorce, witness of parental abuse, household member mental health problem or drug problem (Turney, 2014). Previous research (see Miller, 2007; Nesmith & Ruhland, 2008) focuses extensively on risk factors associated with children of incarcerated parents. Researchers have found elevated rates of behavior problems, such as aggression, ADHD, anxiety, depression, and social problems among these children (Wildeman & Turney, 2014). It is important to acknowledge that some children of incarcerated parents avoid negative outcomes and experience healthy development (Nesmith & Ruhland, 2008), and researchers should aim to understand those protective processes to facilitate and build opportunities for resilient outcomes in children (Hetherington & Stanley-Hagan, 1999).

The purpose of the study is to examine young children's behavioral outcomes in the context of paternal post-incarceration by focusing on coparenting alliance as positive family process and a potential source of protection against risk factors such as parental depressive symptoms. The sample for this thesis comes from the Building Strong Families (BSF), a longitudinal dataset that, at baseline, consists of mostly unmarried couples who are expecting their first child together. Specifically, the fathers in my sample are those who served time in jail or prison before the child was born.

The Case of Previously Incarcerated Fathers

Of the 1.6 million inmates in the U.S., nearly 800,000 identify as parents, with 92% of those being fathers (Glaze & Maruschak, 2008). Men are more likely to have longer histories of incarceration compared to women, and more likely to experience their first arrest at a younger age, 19.5 years versus 24.5 years (Kjellstrand, Cearley, Eddy, Foney & Martinez, 2012). On average, men serve longer sentences, 2.2 years, compared to 1.5 years for mothers (Kjellstrand et al., 2012). Researchers have determined that the prevalence for fatherhood is similar for both non-incarcerated and incarcerated men in that 73% of Black men with no history of incarceration were fathers by their late thirties, while almost 70% of incarcerated Black men were also fathers by their late thirties (Western & Wildeman, 2009). The number of children that incarcerated Black men had was also similar for incarcerated White and Latino men. This proportional number of non-incarcerated and incarcerated fathers highlights that there are just as many fathers who are incarcerated as there are non-incarcerated, which warrants the need for current research studies to include previously incarcerated fathers into family research instead of focusing solely on non-incarcerated fathers.

Further, previously incarcerated fathers are important to study because a wealth of research examines stressors faced by men during and post-incarceration, which can impact their mental health. For example, the prison environment in and of itself is a stressor in relation to levels of safety such as the predatory nature of social relationships in prison (Comfort, 2007; Lutze & Murphy, 1999; Schnittker, 2014). After release, previously incarcerated individuals experience reduced labor and economic opportunities, stigma related to second-class citizenship, and lower social standing (Uggen, Manza, & Behrens, 2004). As a result, these experiences of incarceration may expose fathers to stressors over the life course, which have implications for

not only their mental health (i.e., depression; Massoglia, 2008), but also for the mental health of their child's mother (Comfort, 2007).

For example, researchers have examined how both recent and distal paternal incarceration might increase a mother's risk for major depression due to reasons related to reduced coparenting support, financial support, parenting stress and stigma related to a parent going to prison (Wildeman, Schnittker & Turney, 2012). Researchers found that recent paternal incarceration increased a mother's risk of a major depressive episode by 54% compared to mothers with distally incarcerated fathers. The authors defined recent incarceration as the father being incarcerated when his child was between the ages of 3 and 5, and distal incarceration as any incarceration taking place prior to and including the third year interview when the child was three years old. It is important to know that the study did not include distally or previously incarcerated fathers in the main analyses because the authors were not confident in their ability to use this sample due to how their data were structured. As a result of their statistical decision, the authors argued that they do *not* believe that distal paternal incarceration is unrelated or less important to maternal depression than recent paternal incarceration (Wildeman, Schnittker & Turney, 2012). In the current study, I address two gaps in the literature: 1) including previously incarcerated fathers, and 2) an examination of how coparenting alliance interacts with parental depressive symptoms to understand children's behavior outcomes.

For all these reasons, the current study seeks to understand how experiences of post-incarceration (i.e., exposure to prison-related conditions and post-incarceration stressors) might influence the ways previously incarcerated fathers are able to coparent alongside their child's mother as well as how mothers are able to coparent alongside their child's previously incarcerated father. The current study also seeks to understand how experiences of post-

incarceration might influence paternal and maternal depressive symptoms, which can have implications for the child's behavior outcomes and how the family system functions as a whole.

Families as Systems within the Criminal Justice System

In the last two decades the U.S. incarceration rate has shown a clear linear trend upward since 1980 to 2006 (Pratt, 2008) with small increases in 2014 (Kaeble, Glaze, Tsoutis & Minton, 2015), therefore families with an incarcerated parent have had to adapt to structural inequalities set forth by mass incarceration such as, housing and financial instability, high recidivism rates, and systemic racism as seen in the disproportionate number of incarcerated Black and Latino men compared to incarcerated White men (Durose, Cooper, & Snyder, 2014; Geller, Garfinkel & Western, 2011; Wakefield & Uggen, 2010). Further, the U.S. prison boom has altered family dynamics where we have seen a rise in single motherhood (Turney, 2014), economic inequality for men, and an overall concentration of childhood disadvantage, especially among Black children and children of parents with lower educational attainment (Wildeman, 2009). Taken together, these structural inequalities can place families at risk for experiencing stress (Green, Ensminger, Robertson & Juon, 2006), thus parents may engage in less effective parenting practices (McLanahan & Percheski, 2008; Wildeman, 2010), which can contribute to parental depressive symptoms (Braman, 2004), which can ultimately impact children's behavior outcomes.

Theoretical Framework: Family Systems

From the perspective of *family systems* (Cox & Paley, 1997; Kantor & Lehr, 1975), I draw upon three main constructs: 1) organizational complexity, 2) hierarchical structure and subsystems, and 3) adaptive self-organization.

First, families are organizationally complex (Kantor & Lehr, 1975) and to understand family processes, the family unit is better understood as a whole system rather than the sum of its parts (Cox & Paley, 1997). For example, it is common for researchers to exclude fathers from child development studies and exclusively rely on maternal reports of child development because of the financial, social and psychological barriers in recruiting fathers (Macfadyen, Swallow, Santacroce, & Lambert, 2011). To address these barriers, researchers have spent a considerable amount of time testing various recruitment strategies to get fathers to participate in child development studies (Doyle, Weller, Daniel, Mayfield & Goldston, 2016). A family systems perspective acknowledges that family members mutually influence each other such that one person's actions not only affects the individual, but all members in the family system, including romantic partners, parents, and the children (Cox & Paley, 1997). Rather than make previously incarcerated fathers the focal point in this present study, it is better to look at how the entire family functions as a system to understand behavior outcomes in three-year-old children. Therefore, I include reports from both fathers and mothers children's behavior problems and perceptions of coparenting alliances, in addition to self-reports of parental depressive symptoms. In particular, I examine how coparenting alliances and parental depressive symptoms can mutually influence children's behavior outcomes.

Second, family systems are organized into hierarchies in which the larger family system consists of smaller subsystems (i.e., parent–parent and parent–child subsystem; Cox & Paley, 1997). To ensure that parental and/or romantic partner interactions do not negatively influence parent–child interactions or vice-versa, subsystems must establish clear, but flexible, boundaries or rules (Minuchin, 1974). For example, Cox and Paley (1997) argue that while linked, the coparenting relationship is separate from the romantic subsystem and the parent–child subsystem.

The coparenting relationship is known as the executive subsystem, which can potentially explain child outcomes above and beyond parenting quality (Minuchin, 1974; Karreman, Van Tuijl, Van Aken & Deković, 2008). Further, researchers have shifted their examination away from how coparenting can have correlational effects on children's outcomes and instead focus on how coparenting can have interactive effects in relation to children's behavior outcomes (Shope-Sullivan, Weldon, Cook, Davis & Buckley, 2009). Therefore, because the coparenting relationship is the executive subsystem within the hierarchical structure of the family system, relegating the subsystems below as lower in ranking, but not in importance, the current study focuses on coparenting alliance by examining its interactive role with parental depressive symptoms in relation to children's externalizing and internalizing behavior problems. My hypotheses are centered around the hierarchical structure of families because the coparenting relationship holds higher order above all other subsystems. As I focus on child behavior outcomes as the outcome variable, it is not enough to examine only one member of the family system (e.g., previously incarcerated fathers); instead it is important to understand how interactions within and across subsystems impact child behavior outcomes (i.e., both fathers' and mothers' reports of coparenting alliance and depressive symptoms). I return to the impacts for these children in a later section of this thesis.

Finally, families as systems have the capacity to reorganize and adapt in response to external challenges impacting how the family functions (Cox & Paley, 1997). To understand how the family system responds to transitions, it is imperative that researchers examine individual responses in addition to developmental patterns in the father–mother as well as the parent–child subsystems (Cox & Paley, 1997). The current study has a sample of parents with three-year-old children, which situates these families in a transition to parenthood. Researchers

have characterized this transition as a process of adaptive self-organization for the family system as the birth of a child can impact family subsystems (i.e., coparenting relationships and parent-child relationships) as well as individual functioning (i.e., parental depressive symptoms; Cox & Paley, 1997). For example, I include fathers' and mothers' reports of coparenting alliance as well as fathers' and mothers' depressive symptoms to understand the impact on their child's behavior outcomes. Previous researchers have also developed a similar research design using constructs of both mother and father reports of depressive symptoms in relation to the how the transition to parenthood impacts the family system (Cox, Paley, Burchinal & Payne, 1999).

Impact of Paternal Incarceration on Child Behavior Problems

Researchers have analyzed the impact of paternal incarceration on children's behavior problems (Haskins, 2015; Wildeman & Turney, 2014). In discussing child behavior problems, I refer to two different outcomes: externalizing behaviors and internalizing behaviors.

Externalizing behaviors are characterized as acts of aggression, impulsivity and hyperactivity, to name a few (Olson, Sameroff, Kerr, Lopez and Wellman, 2005; Peterson & Zill, 1986). Researchers have argued that in the context of family stress and dysfunction, externalizing problems are likely to be found in and to persist into middle childhood (Campbell, Shaw & Gilliom, 2000); Jacobvitz, Hazen, Curran, & Hitchens, 2004). Externalizing behaviors as early as toddlerhood and preschool increase the risk for children's later maladjustment upon school entry (Campbell, Shaw & Gilliom, 2000).

Internalizing behaviors are inner directed and manifest into symptoms of depression, anxiety, social isolation, withdrawal, sad affect, shame and frustration (Haskins, 2015; Madigan, Atkinson, Laurin & Benoit, 2013; Peterson & Zill, 1986). Children with internalizing problems are often unable to form good peer relationships because they engage in isolating behaviors

(Fanti & Henrich, 2010). Exposure to maternal depression and negative family contexts are associated with high levels of internalizing behavior problems across development (Fanti & Henrich, 2010).

Internalizing and externalizing behavior problems are often co-occurring at high rates (i.e., 50-75%; Connell & Goodman, 2002), and considered severe when the behaviors occur frequently, affect multiple domains of functioning and environments (e.g., home and school) with different people (i.e., parents, teachers, peers; Achenbach, Howell, Quay & Conners, 1991; Campbell, Shaw & Gilliom, 2000).

Various studies have examined the link between parental incarceration (i.e., sometimes current and sometimes previous incarceration) and elevated child behavior problems. For example, researchers have studied the effects of current maternal and paternal incarceration using behavior reports from nonincarcerated caregivers and found that paternal incarceration, compared with no paternal incarceration, was associated with higher levels of multiple behavior problems (Wildeman & Turney, 2014). Behavior reports from teachers showed that paternal incarceration was associated with higher levels of oppositional, hyperactivity, ADHD, social, self-control, internalizing and externalizing problems in 9-year-old children in comparison to children who have never experienced paternal incarceration (Wildeman & Turney, 2014). This study is important in demonstrating the many negative developmental outcomes for children who are currently experiencing paternal incarceration. Specific to previously incarcerated fathers, Craigie (2011) found that fathers' history of incarceration was associated with higher levels of physically aggressive behaviors in 5-year-old boys (Wildeman, 2010). Other research shows differences between patterns with internalizing versus externalizing symptoms for children of incarcerated fathers. In one study, paternal incarceration had a statistically significant effect on

their child's externalizing behavior at age 5, but there was no significant effect on children's internalizing behavior (Craigie, 2011).

Taken together, the negative association between current paternal incarceration and child behavior problems (i.e., internalizing and externalizing) are well documented and in lesser cases for past incarceration. In the current study, I will extend the literature on children's behavior outcomes by examining whether patterns are equally as negative for internalizing versus externalizing behavior problems for a sample of children with previously incarcerated fathers.

Impact of Maternal and Paternal Depressive Symptoms on Child Behavior Problems

Depressive symptoms can be categorized into three domains: mood, cognitive and physical symptoms (American Psychiatric Association, 2013) and include depressed mood, feelings of guilt, worthlessness, helplessness, hopelessness, loss of appetite and sleep disturbance (Radloff, 1977). For expectant and/or new parents, elevated rates of depression and depressive symptoms are particularly concerning given links to lower parental sensitivity (Klausli & Owen, 2009), as well as greater negative, and lower positive, parenting (Wilson & Durbin, 2010). Further, researchers have used the family systems perspective to examine how maternal postpartum depression indirectly influences paternal postpartum depression via the quality of the spousal relationship (Don & Mickelson, 2012). Parental postpartum depression affects children's health, cognitive, socio-emotional and parent-child relationships (Letourneau et al., 2012).

Differences between depression and depressive symptoms can be found in the following sources: Goodman et al. (2011), Radloff (1977), and Whisman (2001). In this review of the literature, I use both terms based on the language used by authors within this literature review, however, my focus in the current study is on depressive symptoms for both mothers and fathers. The prevalence of depressive symptoms is documented by the Fragile Families and Child

Wellbeing Study (FFCWS), which has followed 5,000 children with a majority born to unmarried parents. Researchers from FFCWS have found that approximately 21% of mothers and 14% of fathers of three-year old children met the diagnostic criteria for depression (Meadows, McLanahan & Brooks-Gunn, 2007).

Further, researchers have documented the associations between parental depressive symptoms and child behavior problems in that when parents report higher depressive symptoms, they also report higher behavior problems in their children. In particular, the association between higher *maternal* depression and child behavior problems has received much empirical investigation (Goodman et al., 2011). Researchers conducted a meta-analysis using 193 studies to test the association between maternal depression and children's behavioral and emotional problems (i.e., internalizing and externalizing behavior, general psychopathology, negative and positive affect). Maternal depression was strongly associated with children's internalizing problems and externalizing problems in comparison to other behavior problems (Goodman et al., 2011). These findings suggest that externalizing and internalizing behavior problems are more affected by maternal depression in comparison to various child behavior outcomes. Researchers have longitudinally examined postpartum maternal depressive symptoms and behavior problems in children (Luoma et al., 2001) and found that postpartum maternal depressive symptoms predicted higher externalizing problem scores in 8-year-old children. In another study, depression in mothers was associated with adverse effects for their 3.5-year-old children's behavior development (Ramchandani, Stein, O'Connor, Heron, Murray, & Evans, 2008).

Researchers have also examined *paternal* depressive symptoms and its association with child behavior problems. Independent of maternal postnatal depression, depressive symptoms in fathers were associated with later psychiatric disorders in their children (Ramchandani et al.,

2008). Specifically, 3.5-year-old boys with depressed fathers were at an increased risk for conduct problems compared to non-depressed fathers (Ramchandani et al., 2008). Further, a meta-analysis of 23 studies was conducted to examine associations between paternal depressive symptoms and children's psychopathology outcomes (i.e., child's internalizing and externalizing behavior). The mean effect sizes between paternal depressive symptoms and internalizing and externalizing symptoms were .24 and .19, respectively (Kane & Garber, 2004), which suggest that there is a significantly positive association between paternal depressive symptoms and children's behavior outcomes (Kane & Garber, 2004).

Previous research has examined the impact of *maternal versus paternal* depressive symptoms on child behavior problems specific to internalizing and externalizing symptoms. Researchers conducted a meta-analysis using 134 studies and found that maternal depressive symptoms were more strongly related to children's internalizing behavior problems than paternal depressive symptoms (Connell & Goodman, 2002). Further, researchers found that paternal depression, in comparison to maternal depression was more strongly related to externalizing behavior problems for girls (Connell & Goodman, 2002).

Finally, in no studies to my knowledge have researchers examined links between maternal or paternal depressive symptoms and child behavior problems for children of previously incarcerated fathers. Researchers have examined associations between incarceration and depression among formerly incarcerated men, and found that these men reported more difficulty forming and maintain close relationships, their social life and home maintenance (Schnittker, 2014). Further, researchers have investigated how discrimination might be a pathway linking incarceration to psychological distress (i.e., depression) in a sample of 172 formerly incarcerated men (Turney, Lee & Comfort, 2013). Discrimination related to men's

criminal record (i.e., treated unfairly by employers because of criminal record) predicted psychological distress compared to racial/ethnic discrimination (i.e., treated unfairly by employers because of racial/ethnic group; Turney, Lee & Comfort, 2013).

Taken together, depressive symptoms often present great challenges for individuals in general. The negative impact of parental depressive symptoms on children conveys the importance of including depressive symptoms for both parents in my analyses as a way to understand child behavior problems in children with previously incarcerated fathers. To this end, *I hypothesize that when there are higher maternal or paternal depressive symptoms, I expect higher behavior problems (i.e., internalizing and externalizing) in children (H1; See figure 1).*

Impact of Coparenting Alliance on Child Behavior Problems

Coparenting alliance is characterized as the parents' ability to cooperate with each other by nurturing and meeting the developmental needs of the child (Abidin, 1995). A solid parenting alliance is established if these conditions are met: (a) each parent is invested in the child, (b) each parent values the other parent's involvement with the child, (c) each parent respects the judgments of the other parent and (d) each parent desires to communicate with the other (Abidin, 1995; Weissman & Cohen, 1985).

A high quality coparenting relationship is established when parents agree about how their child should be raised, cooperate in executing shared objectives, and show mutual support and commitment in rearing their child (McHale, 1995). Strong and positive parenting alliance sets the foundation for nurturing children after divorce or conflictual marriage, often mitigating the harmful effects of divorce (Abidin, 1995). Further, coparenting alliances are associated with child behavior problems such as externalizing and internalizing behavior in children. For example, a meta-analysis of 59 studies demonstrated that a stronger coparenting alliance between

parents was associated with fewer negative child behavior problems such as internalizing and externalizing problems in children (Teubert & Pinquart, 2010).

Researchers have studied how the transition to parenthood not only influences interactions within and across subsystems such as coparenting and parent-child relationships (e.g., Curran, Hazen, & Mann, 2009), but also affects individual functioning (i.e., increased risk for depressive symptoms; Cox & Paley, 1997). For example, researchers examined how the birth of a new child affects *both* mothers' and fathers' perceptions of coparenting quality in relation to parental depressive symptoms. More positive coparenting quality when the infant was 1 month old was significantly predictive of lower levels of depressive symptoms for both mothers and father when the infant was 3 months old (McDaniel & Teti, 2012). While the latter study does not include child development measures, the study highlights how coparenting is susceptible to changes following the birth of a new child.

Previously Incarcerated Fathers and their Coparenting Alliance

Despite the many studies published on coparenting and behavior problems in children (see meta-analysis by Teubert & Pinquart, 2010), few have investigated the coparenting alliances of previously incarcerated fathers and the potential impact on child behavior problems. For example, previously incarcerated fathers reported less shared responsibility (i.e., mothers report on how often father watches child) and less cooperation (i.e., mothers report on that father respects her rules that pertain to their shared child), however researchers did not measure behavior problems in children (Turney & Wildeman, 2013).

Researchers have argued that one way to indirectly benefit children with incarcerated parents is to improve the coparenting alliance between the incarcerated parent and the nonincarcerated parent (Loper, Phillips, Nichols & Dallaire, 2013). Researchers investigated

whether the coparenting alliance among incarcerated fathers was related to changes in children's positive (e.g., attentive) or negative (e.g., distressed, hostile, scared) affect, and found that lower levels of observed coparenting alliance, measured as repeated displays of negative attitudes towards caregivers, were associated with a child's negative mood (Loper et al., 2013). Further, much of the research on coparenting is based on the alliance between incarcerated mothers and grandmothers as caregivers (Baker, McHale & Strozier, 2010; Cecil, McHale, Strozier & Pietsch, 2008; Strozier et al., 2011). While the latter is important to know, what is strongly needed is research on how perceptions of coparenting alliance between mothers and previously incarcerated fathers interacts with parental depressive symptoms to understand child behavior outcomes. My research is intended to fill these gaps. That is to say, *when there is higher coparenting alliance as reported by both mothers or fathers, I expect fewer behavior problems in children (H2; See figure 2).*

Moderation: How Coparenting Alliances Moderate the Association Between Depressive Symptoms and Child Behavior Problems

In making my hypotheses, I first addressed the conditions when perceptions of coparenting alliance are high. Researchers have noted the potential for coparenting to serve as a protective factor (Shoppe-Sullivan, Weldon, Cook, Davis & Buckley, 2009). For example, when parents are depressed, a strong coparenting alliance has the potential to serve as a protective factor that can safeguard children's behavior development (Floyd et al., 1998). Thus, I anticipate higher coparenting alliance to moderate the association between parental depressive symptoms and child behavior problems. That is, when parents' perceptions of their *coparenting alliance is high, I anticipate that the association between parental depressive symptoms and child behavior problems will be attenuated (H3a; See figure 3).* Said another way, I expect higher coparenting

alliance to buffer against the effects of parental depressive symptoms on children's behavior problems.

Next, I address the conditions when coparenting alliance is low. Drawing from family systems theory, when subsystems within families cannot adapt during challenging times, this may lead to dysfunctional pathways where maladaptive behaviors arise to maintain homeostasis within the family system (Cox & Paley, 1997). The benefits of a strong coparenting alliance for child behavior outcomes are well-documented, however research is scarce when examining the link between coparenting alliance and children's behavior outcomes in the context of parental depressive symptoms for families with previously incarcerated fathers. Overall, *when parents' perceptions of their coparenting alliance is low coupled with higher parental depressive symptoms, I anticipate higher internalizing and externalizing behavior problems in children (H3b; See figure 3).*

Method

Participants

The Building Strong Families Study (BSF) was a multisite impact and implementation evaluation of healthy marriage and relationship education and support services offered to unwed parents at or near the birth of their child (see Wood et al., 2012). The study collected data from 4,700 couples at the birth of their first child, when their child was 15- and 36-months old to assess the impacts of the BSF-related services, for which no significant effects emerged (Wood et al., 2012). Eligibility criteria excluded couples with a history of intimate partner violence. All study variables are from the 36-month assessment except for control variables, which came from baseline and 15-month assessments. The BSF intervention sought to enhance the ways in which parents share parenting responsibilities to raise their children. For the thesis, the final sample

included 426 fathers who reported at baseline that they had ever been convicted and sentenced to jail or prison, and who were not currently in jail or prison. Of the 426 fathers in the sample, 68% identified as Non-Hispanic Black, 20% identified as Non-Hispanic White, 7% identified as Latino and 3% identified as other (e.g., American Indian or Alaskan Native, Native Hawaiian or Other Pacific Islander and Asian). This BSF subsample is representative of families with previously incarcerated fathers in that Black fathers (i.e., 41.8%) are disproportionately incarcerated compared to Latino fathers (i.e., 20.3%) and White fathers (i.e., 31%; Glaze & Maruschak, 2008). Further, 56.9% of fathers did have a high school diploma or a GED equivalent, while 38.2% of fathers did not have a high school diploma and 5% of fathers responded 'other'. For more about the sample, see Table 1.

Measures

Parental Depressive Symptoms at 36 months. To measure the prevalence of depressive symptoms, I used the 12-item version of the Center for Epidemiologic Studies Depression Scale (CES-D) at 36 months postpartum. The CES-D items measured whether parents feel sad or lonely, experience restless sleep, have reduced appetite, and have difficulty concentrating on a scale from 1=rarely or none of the time, 2=some of the time, 3= a moderate amount of time and 4= most of time. Cutoff points for high depressive symptoms require a score of 16 or higher (Radloff, 1977). Parents were asked how often they experienced these symptoms in the previous week. Separately for mothers and fathers, the scale represents the prevalence of depressive symptoms by summing responses across all 12 CES-D items. Inter-item reliability yielded appropriate Cronbach's alpha for fathers (i.e., $\alpha=.87$) and mothers (i.e., $\alpha=.87$). See Table 1 for more information.

Child Behavior Problems at 36 months. To assess problem behaviors, parents responded to 26 items on the Behavior Problems Index (BPI; Zill 1985; Peterson and Zill 1986). For each item, the parent was read a statement about their child's behavior and asked whether the statement was often true, sometimes true, or never true of the BSF focal child. The items are divided into a subscale of internalizing items (13 items) and externalizing items (14 items). Higher scores indicate a greater level of behavior problems. I averaged both mother and father reports to create a couple average for internalizing and externalizing scales. Sample items from the internalizing subscale ($\alpha = .81$) include: child is too fearful or anxious, child is withdrawn, and child cries too much. Sample items from the externalizing subscale ($\alpha = .81$) include: child argues too much, child is a bully to others, and child is disobedient.

Coparenting Alliance at 36 months. To examine the quality of the coparenting relationship, mothers and fathers responded to 10 items on the Parenting Alliance Inventory (PAI; Abidin & Brunner, 1995). Both mothers and fathers responded, regardless of whether they remained in a romantic relationship. Using a five-point scale (ranging from strongly disagree to strongly agree), parents were asked to state their level of agreement with the following sample statements: "My child's father/mother and I communicate well about our child" and "My partner makes my job of being a parent easier." I created the scale by averaging responses to the 10 items for mother and fathers separately. Inter-item reliability yielded appropriate Cronbach's alpha for fathers (i.e., $\alpha = .95$) and mothers (i.e., $\alpha = .97$).

Control Variables. In line with other researchers (Turney, 2014) I controlled for demographic variables that may otherwise explain the study associations. From baseline, I included child age, child sex, parents' income, education and employment status. I also included

fathers' race and ethnicity, whether the couple was in the intervention or control group and parental depressive symptoms at wave 2.

I controlled for child age (i.e., mothers' and fathers' reports of whether child was born yet at baseline) to account for the fact that 3-year-old children experience age-related changes in cognitive functioning (i.e., increases in psychological autonomy), which might impact their internalizing and externalizing behavior problems as it is normative for children to engage in behaviors, such as throwing tantrums and being stubborn or fearful at this age (Gilliom & Shaw, 2004). I used mothers' reports of child sex as a control variable to account for the fact that a child's internalizing and externalizing behavior problems may be differentially patterned for boys and girls (Gilliom & Shaw, 2004). For example, researchers found that 5-year-old boys with previously incarcerated fathers were more likely to have higher levels of physically aggressive behaviors in comparison to 5-year-old girls with previously incarcerated fathers (Wildeman, 2010).

I controlled for parental depressive symptoms measured at 15 months postpartum (wave 1) to take into account the potential recurrence of parental depressive symptoms measured again 21 months later when the focal child was 36-months old (wave 2). Recurrence of parental depressive symptoms are known to negatively impact children's behavior outcomes because of the prevalence of depression across time (Luoma et al., 2001). Parents' income status was included as a control variable to account for the fact that children's behavior outcomes could be potentially impacted by financial instability because parent's low income can increase parenting stress, which may affect the parent-child relationship (McLanahan & Percheski, 2008). During the planning stage of my analyses, I included father's residential status, the last time father saw

his child and if mother was expecting another child, however due to a high percentage of missingness, I excluded those variables from my model to increase my sample size.

I controlled for parents' education status as educational attainment is an indicator of socioeconomic status as well as a known correlate of child behavior outcomes in early childhood (Bradley & Corwyn, 2002). I controlled for father's race and ethnicity because of the disproportionate number of Black and Latino children with previously incarcerated fathers compared to White children. In line with other researchers (Haskins, 2015), the same factors that predict incarceration (i.e., low socioeconomic status, Black and low educational attainment) are often the same factors that predict children's outcomes (Haskins, 2015). Further, researchers have approximated that Black children are 7.5 times more likely than White children to have a parent in prison. Latino/a children are more than 2.5 times more likely than White children to have a parent in prison (Glaze & Maruschak, 2010). Further, I controlled for whether the couple was randomly assigned to the intervention or control group since the intervention group was only allowed to receive BSF related services (i.e., assessment and referral, support from family coordinators and relationship building sessions; Wood et al., 2012).

Analytic plan

To address the research aims, I performed hierarchical multiple regression in SPSS 23 to test my main effects and interaction hypotheses (See Appendix 1 for syntax). In total, I ran two models, one examining externalizing behavioral problems and the second examining internalizing behavioral problems in three-year-old children.

In both models, variables were entered into three steps: step 1 included control variables; step 2 included main effects (i.e., parental depressive symptoms and coparenting alliance); and step 3 included the interaction terms in order to test my moderation (H3). I created new

interaction terms to test whether coparenting alliance moderated the association between parental depressive symptoms and children's behavioral outcomes. To do this, I centered each of the predictor variables around the mean (i.e., coparenting alliance and parental depressive symptoms) to create new interaction terms in order to reduce multicollinearity between the independent variables (Aiken & West, 1991). The final analysis was a test of simple slopes in order to evaluate and probe significant two-way interactions in the regression models (Preacher, Curran & Bauer, 2006). I entered specific values of the centered moderator (See Preacher, Curran & Bauer, 2006, p.445). For example, simple slopes for the association between paternal depressive symptoms and children's behavior problems were tested for low (-1 SD below the mean= -0.90380), moderate (mean= 0.13720), and high (+1 SD above the mean= 1.17280) levels of coparenting alliance reported by mothers, also known as the conditional values of the moderator.

Results

Descriptive statistics and bivariate correlations

Means, standard deviations, and frequencies for independent, dependent and control variables are in Table 2. Intercorrelations for main study variables are in Table 3. Paternal depressive symptoms were positively correlated with children's externalizing behavior problems. Fathers' perceptions of the coparenting alliance were positively correlated with mothers' perceptions of coparenting alliance. Finally, children's externalizing behavior problems were positively correlated with their internalizing behavioral problems.

Main effects

I found two main effects, which are derived from step 2 within the hierarchical multiple regression models. As expected and in partial support for H1, higher paternal depressive

symptoms were significantly associated with higher externalizing behavior problems in children. In contrast, and contrary to what I expected, higher maternal depressive symptoms were associated with lower externalizing behavioral problems in children. To note, the associations between maternal and paternal depressive symptoms on children's externalizing behavior problems were significant even when accounting for the other parents' depressive symptoms. Further, I did not find support for my second hypothesis testing the association between mothers' and fathers' coparenting alliance and children's internalizing and externalizing behavior problems (See Table 4).

Moderation effects

The moderation results (H3) are derived from step 3 of the hierarchical multiple regression models. In step 3, four interaction terms were entered for the model with externalizing behavioral problems as the outcome variable (i.e., Mom Coparenting x Dad Depression), and the same four interaction terms were entered for the model with internalizing behavioral problems as the outcome variable (Mom Coparenting x Dad Depression; See Table 4). Specific to *externalizing* behavior problems as the outcome variable, the F-test discerned whether the overall explained variance was significantly greater than the unexplained variance. Further, because the R square value tends to increase as additional predictors are included in the model; the adjusted R² penalizes this estimate as insignificant predictors are added to the model. Said another way, the adjusted R² conveys the percentage of variation explained by only the independent variables that actually affect the dependent variable. In the final model (step 3), the control variables, conditional effects and interactions terms significantly explained the variance in children's externalizing behaviors, $F(22, 404) = 2.78, p = .000$. Specifically, the predictors in step 3 accounted for 8.4% (adjusted R²) of the variation in children's externalizing behavior

problems. However, this adjusted R^2 estimate for this model suggests that the addition of the interaction terms from step 2 to step 3 did not add to the overall model fit (see table 4). Said another way, the R-square change was not significant when I added in the interaction terms, which helps explain why none of the interaction terms emerged as significant.

Specific to *internalizing* behavior problems as the outcome variable, in the final model (step 3) the control variables, conditional effects and interactions terms significantly explained the variance in internalizing behaviors $F(22, 404) = 2.77, p = .000$. Specifically, the predictors in step 3 accounted for 8.4% (adjusted R^2) of the variation in children's internalizing behavior problems. This adjusted R^2 estimate for this model suggests that the addition of the interaction terms from step 2 to step 3 added to the overall model fit (see table 4). All values from both regression models are in Table 4. In total, I found partial support for the hypothesis testing children's *internalizing*, but not externalizing behavior problems as the outcome variable. Under conditions of lower coparenting alliance reported by mothers, paternal depressive symptoms were associated with higher internalizing behavior problems in children (See Figure 4). However, under conditions of higher coparenting alliance, tests of simple slopes showed a trend toward a negative association between paternal depressive symptoms and children's internalizing behavior problems. Tests of simple slopes were significant for mothers' reports of lower coparenting alliance ($b = 0.0141, t = 3.2501, p = .001$), but not for mothers' reports of higher coparenting alliance ($b = -0.0072, t = -1.6847, p = 0.09$) or mothers' reports for moderate coparenting alliance ($b = -0.0049, t = -1.6203, p = 0.105$)

Regions of significance

I tested for regions of significance on the moderator to further probe the significant interaction between mother's perception of coparenting alliance and father's depressive

symptoms on children's internalizing behavior problems. Regions of significance help to define specific values of the moderator at which the regression examining the simple slope of internalizing behavioral problems on paternal depressive symptoms is significantly different from 0 (Preacher, Curran & Bauer, 2006). Probing shows that the simple slope of children's internalizing behavior problems regressed on paternal depressive symptoms is significant at only one of the chosen conditional values of coparenting alliance reported by mothers; this finding adds substantially to the understanding of the interaction effect (Preacher, Curran & Bauer, 2006). What is more interesting, are the values of coparenting alliance reported by mothers for which the simple slope is statistically significant (Preacher, Curran & Bauer, 2006). The region of significance on the moderator (coparenting alliance reported by mothers), ranges from -0.1151 to 1.3852, indicating that any given simple slope outside this region is statistically significant. Given that centered coparenting alliance reported by mothers ranges from about -2.905 and 1.050 (i.e., these are minimum and maximum values), this indicates that the effect of paternal depressive symptoms on children's internalizing behavior problems is significant only for relatively low observed values of coparenting alliance reported by mothers (See Figure 4).

Discussion

I examined the associations between parental depressive symptoms, coparenting alliances, and behavior outcomes in three-year-old children with previously incarcerated fathers. Guided by the family systems perspective, my analyses included an examination of family systems with previously incarcerated fathers to understand what impacts child behavior development. I found mixed results for my hypotheses. That is, I found three statistically significant results from this study; two results were as expected, and one result was unexpected. Regarding my moderation analyses where I tested four interactions for children's internalizing

behavior, only one interaction emerged as statistically significant. In contrast, of the four interactions tested for children's externalizing behavior, none emerged as significant.

First and as expected, I found that higher reports of *paternal* depressive symptoms were significantly associated with higher externalizing behavior problems in three-year-old children ($\beta = .005$, $SE = .002$). It was interesting that it was *paternal* versus maternal depressive symptoms that were significantly associated with higher externalizing behavior problems in three-year-old children. However, this finding is in line with previous researchers, where they have found that paternal psychopathology in the form of depression in comparison to maternal psychopathology, was more strongly related to externalizing behavior problems in children (Connell & Goodman, 2002). In light of family systems theory, parental depressive symptoms did mutually influence children's externalizing behavior outcomes, which demonstrates that when examining child development outcomes, it is necessary to examine the family system as a whole rather than a sum of its parts. Therefore, my finding makes two contributions: 1) it adds additional supporting knowledge about links between paternal depressive symptoms and children's externalizing behavior problems, and 2) this finding is specific to a sample of three-year-old children with previously incarcerated fathers.

Second and unexpectedly, I found that higher reports of *maternal* depressive symptoms were significantly associated with lower externalizing behavior problems in three-year-old children ($\beta = -.004$, $SE = .002$). That is, I found that higher *maternal* depressive symptoms were associated with lower, rather than higher, child externalizing behavior problems. One speculation for why this pattern emerged is that there might be differences in amounts of missing data by mothers versus fathers on their children's behavior problems in the BSF dataset. I will suggest

that future researchers continue to study the association between maternal depressive symptoms and children's externalizing problems.

Third and in comparison to these significant findings, I did not find support for my hypothesis that was specific to higher coparenting and fewer child behavior problems (H2). Specifically, coparenting alliance reported by both mothers and fathers, on its own, was not associated with fewer behavior problems in children.

Finally, with regard to my moderation analysis, when mothers reported lower coparenting alliance with their child's father, the negative association between father's depressive symptoms and children's internalizing behavior was not attenuated. In fact, children had higher internalizing behavior problems ($\beta = -.01$, $SE=.003$). That is, there was a significant interaction effect such that when mothers perceived the coparenting alliance as low in quality, this did not function as a buffer against fathers' depressive symptoms on children's internalizing behavior problems as previously hypothesized. This finding could be attributed to the fact that a dual-risk model (Sameroff, 1983) exists. Here, it was the presence of two parental risk factors that significantly impacted internalizing behavior outcomes in young children with previously incarcerated fathers. Taken together, coparenting alliance that was low in quality via mothers' reports and fathers with depressive symptoms, even at low levels, might have exposed young children with previously incarcerated fathers to cumulative risk factors, which was sufficient enough to impact children's internalizing behavior outcomes. Although the current study seeks to understand the interactive effects between coparenting behaviors, parental depressive symptoms and children's internalizing behavior outcomes, previous researchers have used similar research designs to examine the interactional effects between parental depression, parenting behaviors and young children's internalizing symptoms (Bouvette-Turcot, Bernier &

Leblanc, 2017) to represent dual-risk models. Further, previous researchers have argued the importance of simultaneously examining multiple risk factors to eliminate the potential of failing to identify interactive effects (Walker, Downey & Bergman, 1989), which was accomplished in the present study.

In light of family systems theory (Cox & Paley, 1997), when examining risk factors such as parental depressive symptoms and coparenting alliance individually, there was no impact on children's internalizing behavior problems. Here, an individual family member's perceptions and competencies clearly did not do much to explain internalizing behavior outcomes in young children. Instead, the entire family system needed to be taken into account in order to explain child behavior outcomes specific to internalizing behavior problems. That is, the significant interaction between mothers' perceptions of coparenting alliance and fathers' depressive symptoms indicates that children's internalizing behavior problems are impacted when simultaneously examining the effects of multiple risks factors.

While I did find support for the issue of dual-risk in that mothers' reports of low coparenting alliance plus the presence of paternal depressive symptoms are associated with more internalizing behavior problems in children, I did not find the same support specific to maternal depressive symptoms. One reason might be that past researchers have found that for mothers who suffer from depressive symptoms, they are still able to provide high-quality care to their children (Campbell, Brownell, Hungerford, Spieker, Mohan & Blessing, 2004).

To be clear, the current study includes a sample of previously incarcerated fathers. Previous researchers have found that previously incarcerated men often suffer from both short- and long-term depressive symptoms (Massoglia, 2008; Turney, Wildeman & Schnittker, 2012). What is unknown from the current study is whether these fathers experience depressive

symptoms in general, or if the depressive symptoms are related to incarceration and ongoing stressors (e.g., discrimination, limited employment, parole) stemming from the incarceration. In future studies, researchers should discern between the following two questions: first, do paternal depressive symptoms, independent of paternal incarceration, explain the association between higher internalizing behavior problems in children and how mothers' perception of coparenting does not moderate this association? Second, do paternal depressive symptoms only emerge after fathers serve time in prison and/or jail? To answer these two questions, researchers would need to measure depressive symptoms before, during and after a father's incarceration.

Further, researchers could examine two groups of demographically similar fathers (i.e., fathers without a history of incarceration and fathers with a history of incarceration) to see if the findings from the present study, specific to fathers' depressive symptoms, mothers' coparenting, and child externalizing symptoms, still emerge.

Strengths and Limitations

In terms of strengths in the current study, I contributed to existing theory by using the family systems perspective to examine how previously incarcerated fathers can impact interactions within and across subsystems such as the parent-child subsystem, the coparenting subsystem, and the overall family system. In the past, researchers have used the family systems perspective to examine changes in familial processes for children of formerly or currently incarcerated parents, however not all relationships were taken into account (Turanovic, Rodriguez & Pratt, 2012). Further, in the current study, I contributed to the gap in existing literature in that previous researchers have only examined the impact that previously incarcerated fathers can have on mothers' financial resources without considering the impact for children or fathers as individuals (Turney, Schnittker & Wildeman, 2012).

Along the same lines, researchers have only examined how fathers' past incarceration can impact his parenting behaviors, the mothers' parenting behaviors and relationship between both parents without including the impact on the child's behavior development (Turney & Wildeman, 2013). Further, I shed light on the well documented negative association between paternal incarceration and child behavior problems because it is unknown whether these patterns of association are equally as negative for children's internalizing behaviors versus their externalizing behaviors. The findings suggest that for a sample of young children with previously incarcerated fathers, parental depressive symptoms are differentially patterned for mothers and fathers in their associations with children's *externalizing* behavior problems, whereas the buffering effect of mothers' perceptions of coparenting alliance on fathers' depressive symptoms was specific to *internalizing* behavior problems.

Researchers have argued that measuring multiple levels of the family system can significantly advance our understanding of how individuals and the entire family system are influenced by the larger social contexts in which they are embedded in (Cox & Paley, 1997). The current study includes mother- and father-reports of constructs related to parental wellbeing (i.e., depressive symptomology and coparenting alliance) and child development constructs (i.e., externalizing and internalizing behavior problems), which allowed me to look at processes occurring at the dyadic level and assess the impact that such changes have on behavior development for young children with previously incarcerated fathers. My examination of mothers and fathers together permitted a more complete assessment of the family system than if only mothers were assessed or if mothers and fathers were examined in separate models. In the current study, I set the foundation for future studies that aim to investigate development in

adolescents with incarcerated parents as well as extend this line of research into family systems with previously incarcerated mothers.

The study is not without limitations. First, in this study I was not able to assess the exact time point of a father's incarceration prior to the birth of their child, and information would be valuable to know about why the fathers were convicted. Second, the study would benefit from more points of data collection both before and beyond the data that was collected at 36 months after the birth of the first child. Third, the study would benefit from including videotaped triadic family interactions to create a more detailed look into the overall family system when all members of the family system are interacting together. Finally, including additional reports of the coparenting alliance aside from parents' reports would provide a deeper understanding of the coparenting subsystem. For example, as children become older, they could report on how they perceive their parents working together to raise the child.

Future Research and Implications

The study has implications for family systems with children of previously incarcerated fathers. The patterns that emerged for father's depressive symptoms is a critical point of consideration. In general, the implications for parental depressive symptoms on children's behavior outcomes are well documented in that depressive symptoms can affect parenting practices, which influence parent-child interactions such as disciplining children (Callender, Olson, Choe, & Sameroff, 2012; Lovejoy, Graczyk, O'Hare & Neuman, 2000). For example, when a parent is depressed, they may be withdrawn, emotionally unavailable and hostile towards their child, which children may outwardly respond to or internalize the parent's depressed behavior (Stacks, Serbin, Enns, Ruttle & Barrieau, 2010). Specific to fathers, increased paternal depressive symptomology is associated with children's internalizing and externalizing behavior

problems (Cummings, Keller & Davies, 2005; Callender, Olson, Choe, & Sameroff, 2012). Given the proximity that fathers have with their children and the reciprocal nature of the parent-child relationship, there can be a variety of mechanisms where fathers' depressive symptoms influence their child through parent-child interactions. For example, researchers measured father's depressive symptoms in a sample of three-year-old children and tested a mediation model to show that depressive symptoms contributed to more negative assessments of children's behavior, which predicted more physical discipline in children, which then predicted greater levels of externalizing behavior problems in children (Callender, Olson, Choe, & Sameroff, 2012). Although the latter study measured externalizing behavior problems in children, the results are still important as externalizing and internalizing behavior problems are often co-occurring (Connell & Goodman, 2002). Researchers have measured parental depressive symptoms following the birth of a child and found that depressive symptoms at 1 month were linked to parental depressive symptoms at 3 months for fathers, but not for mothers (McDaniel & Teti, 2012). For all these reasons, addressing and treating fathers' depressive symptoms when children are relatively young may eliminate internalizing behavior problems from persisting across childhood and beyond.

Further, the patterns that emerged for depressive symptoms and the cross-parent interaction in explaining children's internalizing behavior problems occurred even after controlling for financial resources (e.g., income, employment, education) that each parent brings into the overall family system. Thus, researchers should continue to assess financial resources (even if they are included only as control variables), while also including non-financial risks like depressive symptoms.

Because families are embedded and exist in a larger social context that can impact functioning inside the family system (Cox & Paley, 1997), future research should consider how families adapt to multiple challenges specific to mass incarceration (e.g., housing instability, fewer employment opportunities and institutional racism; Wakefield & Uggen, 2010). The families in the current study can be characterized as families embedded within the criminal justice system in that incarceration can present structural barriers that families must adapt to; whether it be their family structure, organization or life trajectories (Turanovich, Rodriguez & Pratt, 2012).

Additionally, future studies should assess the potential influence that incarceration can have on fathers' depressive symptoms because researchers have documented the relationship between incarceration and health functioning. For example, previously incarcerated individuals are subject to secondary stressors such as reduced economic opportunities, stigma, and lower social standing upon reentry into society, which can increase their likelihood of stress-related illnesses (i.e., depression; Massoglia, 2008).

In sum, I examined young children's behavior outcomes (both internalizing and externalizing symptoms) in the context of paternal incarceration by focusing on both risks (i.e., depressive symptoms), protective factors (i.e., coparenting alliance), and their impact considered together. My examination of each of these influences from both mothers and fathers together permitted a more complete assessment of family systems with young children of previously incarcerated fathers.

References

- Abidin, R. R., & Brunner, J. F. (1995). Development of a parenting alliance inventory. *Journal of clinical child psychology, 24*(1), 31-40.
- Achenbach, T. M., Howell, C. T., Quay, H. C., Conners, C. K., & Bates, J. E. (1991). National survey of problems and competencies among four-to sixteen-year-olds: Parents' reports for normative and clinical samples. *Monographs of the Society for Research in Child Development, i*-130.
- Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. Sage.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub.
- Baker, J., McHale, J., Strozier, A., & Cecil, D. (2010). Mother–grandmother coparenting relationships in families with incarcerated mothers: A pilot investigation. *Family process, 49*(2), 165-184.
- Bouvette-Turcot, A. A., Bernier, A., & Leblanc, É. (2017). Maternal psychosocial maladjustment and child internalizing symptoms: Investigating the modulating role of maternal sensitivity. *Journal of abnormal child psychology, 45*(1), 157-170.
- Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual review of psychology, 53*(1), 371-399.
- Braman, D. (2004). *Doing time on the outside: Incarceration and family life in urban America*. University of Michigan Press.

Campbell, S. B., Brownell, C. A., Hungerford, A., Spieker, S. J., Mohan, R., & Blessing, J. S.

(2004). The course of maternal depressive symptoms and maternal sensitivity as predictors of attachment security at 36 months. *Development and psychopathology*, *16*(02), 231-252.

Campbell, S. B., Shaw, D. S., & Gilliom, M. (2000). Early externalizing behavior problems:

Toddlers and preschoolers at risk for later maladjustment. *Development and psychopathology*, *12*(03), 467-488.

Callender, K. A., Olson, S. L., Choe, D. E., & Sameroff, A. J. (2012). The effects of parental

depressive symptoms, appraisals, and physical punishment on later child externalizing behavior. *Journal of abnormal child psychology*, *40*(3), 471-483.

Cecil, D. K., McHale, J., Strozier, A., & Pietsch, J. (2008). Female inmates, family caregivers,

and young children's adjustment: A research agenda and implications for corrections programming. *Journal of Criminal Justice*, *36*(6), 513-521.

Connell, A. M., & Goodman, S. H. (2002). The association between psychopathology in fathers

versus mothers and children's internalizing and externalizing behavior problems: a meta-analysis. *Psychological bulletin*, *128*(5), 746.

Cox, M. J., & Paley, B. (1997). Families as systems. *Annual review of psychology*, *48*(1), 243-

267.

Cox, M. J., & Paley, B. (2003). Understanding families as systems. *Current Directions in*

Psychological Science, *12*(5), 193-196.

- Cox, M. J., Paley, B., Burchinal, M., & Payne, C. C. (1999). Marital perceptions and interactions across the transition to parenthood. *Journal of Marriage and the Family*, 611-625.
- Craigie, T. A. L. (2011). The effect of paternal incarceration on early child behavioral problems: A racial comparison. *Journal of Ethnicity in Criminal Justice*, 9(3), 179-199.
- Cummings, E. M., Keller, P. S., & Davies, P. T. (2005). Towards a family process model of maternal and paternal depressive symptoms: Exploring multiple relations with child and family functioning. *Journal of Child Psychology and Psychiatry*, 46(5), 479-489.
- Curran, M. A., Hazen, N., & Mann, T. (2009). Husbands' and wives' expectations of parenthood and representations of marriage as predictors of coparenting across the transition to parenthood. *Parenting: Science & Practice*, 9, 101-122.
- Don, B. P., & Mickelson, K. D. (2012). Paternal postpartum depression: The role of maternal postpartum depression, spousal support, and relationship satisfaction. *Couple and Family Psychology: Research and Practice*, 1(4), 323.
- Doyle, O., Weller, B. E., Daniel, S. S., Mayfield, A., & Goldston, D. B. (2016). Overcoming barriers to fathers' participation in clinically relevant research: Recommendations from the field. *Social Work Research*.
- Durose, M. R., Cooper, A. D., & Snyder, H. N. (2014). Recidivism of Prisoners Released in 30 States in 2005: Patterns from 2005 to 2010. *Washington, DC: Bureau of Justice Statistics*, 28.
- Fanti, K. A., & Henrich, C. C. (2010). Trajectories of pure and co-occurring internalizing and externalizing problems from age 2 to age 12: findings from the National Institute of Child

- Health and Human Development Study of Early Child Care. *Developmental psychology*, 46(5), 1159.
- Feinberg, M. E. (2003). The internal structure and ecological context of coparenting: A framework for research and intervention. *Parenting: Science and Practice*, 3(2), 95-131.
- Floyd, F. J., Gilliom, L. A., & Costigan, C. L. (1998). Marriage and the parenting alliance: Longitudinal prediction of change in parenting perceptions and behaviors. *Child Development*, 1461-1479.
- Geller, A., Garfinkel, I., & Western, B. (2011). Paternal incarceration and support for children in fragile families. *Demography*, 48(1), 25-47.
- Gilliom, M., & Shaw, D. S. (2004). Codevelopment of externalizing and internalizing problems in early childhood. *Development and psychopathology*, 16(02), 313-333.
- Glaze, L. E., & Maruschak, L. M. (2008). *Parents in prison and their minor children*. Washington, DC: US Department of Justice, Office of Justice Programs.
- Goodman, S. H., Rouse, M. H., Connell, A. M., Broth, M. R., Hall, C. M., & Heyward, D. (2011). Maternal depression and child psychopathology: A meta-analytic review. *Clinical child and family psychology review*, 14(1), 1-27.
- Green, K. M., Ensminger, M. E., Robertson, J. A., & Juon, H. S. (2006). Impact of adult sons' incarceration on African American mothers' psychological distress. *Journal of Marriage and Family*, 68(2), 430-441.
- Haskins, A. R. (2015). Paternal incarceration and child-reported behavioral functioning at age 9. *Social science research*, 52, 18-33.

- Hetherington, E. M., & Stanley-Hagan, M. (1999). The adjustment of children with divorced parents: A risk and resiliency perspective. *Journal of child psychology and psychiatry*, 40(01), 129-140.
- Jacobvtiz, D., Hazen, N., Curran, M. A., & Hitchens, K. (2004). Observations of early triadic family interactions: Boundary disturbances in the family predict symptoms of depression, anxiety, and attention-deficit/hyperactivity disorder in middle childhood. *Development and Psychopathology*, 16, 577-592.
- Kaebler, D., Glaze, L., Tsoutis, A., & Minton, T. (2015). Correctional populations in the United States, 2014. Washington, DC: US Department of Justice, Office of Justice Programs.
- Kane, P., & Garber, J. (2004). The relations among depression in fathers, children's psychopathology, and father-child conflict: A meta-analysis. *Clinical psychology review*, 24(3), 339-360.
- Kantor, D., & Lehr, W. (1975). Inside the family: Towards a theory of family process. *San Francisco: Josey-Bass*.
- Karreman, A., Van Tuijl, C., Van Aken, M. A., & Deković, M. (2008). Parenting, coparenting, and effortful control in preschoolers. *Journal of Family Psychology*, 22(1), 30.
- Kjellstrand, J. M., Cearley, J., Eddy, J. M., Foney, D., & Martinez, C. R. (2012). Characteristics of incarcerated fathers and mothers: Implications for preventive interventions targeting children and families. *Children and youth services review*, 34(12), 2409-2415.

- Klausli, J. F., & Owen, M. T. (2009). Stable maternal cohabitation, couple relationship quality, and characteristics of the home environment in the child's first two years. *Journal of Family Psychology, 23*(1), 103.
- Letourneau, N. L., Dennis, C. L., Benzies, K., Duffett-Leger, L., Stewart, M., Tryphonopoulos, P. D., Este, D., & Watson, W. (2012). Postpartum depression is a family affair: addressing the impact on mothers, fathers, and children. *Issues in mental health nursing, 33*(7), 445-457.
- Loper, A. B., Phillips, V., Nichols, E. B., & Dallaire, D. H. (2014). Characteristics and effects of the co-parenting alliance between incarcerated parents and child caregivers. *Journal of Child and Family Studies, 23*(2), 225-241.
- Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical psychology review, 20*(5), 561-592.
- Luoma, I., Tamminen, T., Kaukonen, P., Laippala, P., Puura, K., Salmelin, R., & Almqvist, F. (2001). Longitudinal study of maternal depressive symptoms and child well-being. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(12), 1367-1374.
- Macfadyen, A., Swallow, V., Santacroce, S., & Lambert, H. (2011). Involving fathers in research. *Journal for Specialists in Pediatric Nursing, 16*(3), 216-219.
- Madigan, S., Atkinson, L., Laurin, K., & Benoit, D. (2013). Attachment and internalizing behavior in early childhood: A meta-analysis. *Developmental Psychology, 49*(4), 672.

- Maruschak, L. M., Glaze, L. E., & Mumola, C. J. (2010). Incarcerated parents and their children: Findings from the Bureau of Justice Statistics. *Children of incarcerated parents: A handbook for researchers and practitioners*, 33-54.
- Massoglia, M. (2008). Incarceration as exposure: the prison, infectious disease, and other stress-related illnesses. *Journal of Health and Social Behavior*, 49(1), 56-71.
- Mathematica Policy Research, Inc, & Wood, R. G. (2010). *The Building Strong Families Project: Strengthening Unmarried Parents' Relationships: The early impacts of building strong families: Technical supplement*. Office of Planning, Research, and Evaluation, Administration for Children and Families, US Department of Health and Human Services.
- McHale, J. P. (1995). Coparenting and triadic interactions during infancy: The roles of marital distress and child gender. *Developmental psychology*, 31(6), 985.
- Meadows, S., McLanahan, S., & Brooks-Gunn, J. (2007). Parental depression and anxiety and early childhood behavior problems across family types. *Journal of Marriage and Family*, 69, 1162–1177.
- Miller, K. M. (2007). Risk and resilience among African American children of incarcerated parents. *Journal of Human Behavior in the Social Environment*, 15(2-3), 25-37.
- Minuchin, S. (1974). *Families and family therapy*. Cambridge, MA: Harvard University Press.
- Murphey, D., & Cooper, P. M. (2015). Parents behind bars: What happens to their children? *Child Trends*. Retrieved from http://www.courts.ca.gov/documents/BTB_23_4K_6.pdf.

- Nesmith, A., & Ruhland, E. (2008). Children of incarcerated parents: Challenges and resiliency, in their own words. *Children and Youth Services Review, 30*(10), 1119-1130.
- Olson, S. L., Sameroff, A. J., Kerr, D. C., Lopez, N. L., & Wellman, H. M. (2005). Developmental foundations of externalizing problems in young children: The role of effortful control. *Development and psychopathology, 17*(01), 25-45.
- Peterson, J. L., & Zill, N. (1986). Marital disruption, parent-child relationships, and behavior problems in children. *Journal of Marriage and the Family, 295-307*.
- Pratt, T. C. (2008). *Addicted to incarceration: Corrections policy and the politics of misinformation in the United States*. Sage Publications.
- Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interactions in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of educational and behavioral statistics, 31*(4), 437-448.
- Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied psychological measurement, 1*(3), 385-401.
- Ramchandani, P. G., Stein, A., O'Connor, T. G., Heron, J., Murray, L., & Evans, J. (2008). Depression in men in the postnatal period and later child psychopathology: A population cohort study. *Journal of the American Academy of Child & Adolescent Psychiatry, 47*, 390-398.
- Sameroff, A. J. (1983). Developmental systems: Contexts and evolution. In P. Mussen (Ed.), *Handbook of child psychology (Vol. 1, pp. 237-294)*. New York: Wiley.
- Schoppe-Sullivan, S. J., Weldon, A. H., Cook, J. C., Davis, E. F., & Buckley, C. K. (2009).

- Coparenting Behavior Moderates Longitudinal Relations between Effortful Control and Preschool Children's Externalizing Behavior. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 50(6), 698–706. <http://doi.org/10.1111/j.1469-7610.2008.02009.x>
- Strozier, A., Armstrong, M., Skuza, S., Cecil, D., & McHale, J. (2011). Coparenting in kinship families with incarcerated mothers: A qualitative study. *Families in Society: The Journal of Contemporary Social Services*, 92(1), 55-61.
- Teubert, D., & Pinquart, M. (2010). The association between coparenting and child adjustment: A meta-analysis. *Parenting: Science and Practice*, 10(4), 286-307.
- Turanovic, J. J., Rodriguez, N., & Pratt, T. C. (2012). The collateral consequences of incarceration revisited: A qualitative analysis of the effects on caregivers of children of incarcerated parents. *Criminology*, 50(4), 913-959.
- Turney, K. (2014). The Consequences of Paternal Incarceration for Maternal Neglect and Harsh Parenting. *Social Forces*, 92(4).
- Turney, K. (2014). Stress proliferation across generations? Examining the relationship between parental incarceration and childhood health. *Journal of health and social behavior*, 55(3), 302-319.
- Turney, K., Schnittker, J., & Wildeman, C. (2012). Those they leave behind: Paternal incarceration and maternal instrumental support. *Journal of Marriage and Family*, 74(5), 1149-1165.

- Turney, K., & Wildeman, C. (2013). Redefining Relationships Explaining the Countervailing Consequences of Paternal Incarceration for Parenting. *American Sociological Review*, 78(6), 949-979.
- Turney, K., Wildeman, C., & Schnittker, J. (2012). As Fathers and Felons: Explaining the Effects of Current and Recent Incarceration on Major Depression. *Journal of Health and Social Behavior*, 53(4), 465.
- Uggen, C., Manza, J., & Behrens, A. (2004). 'Less than the average citizen': Stigma, role transition and the civic reintegration of convicted felons. In S. Maruna & R. Immarigeon, *After crime and punishment: Pathways to ex-offender reintegration* (1st ed., pp. 258-290). Cullompton: Willan Publishing.
- Wakefield, S., & Uggen, C. (2010). Incarceration and stratification. *Annual review of sociology*, 36, 387-406.
- Walker, E., Downey, G., & Bergman, A. (1989). The Effects of Parental Psychopathology and Maltreatment on Child Behavior: A Test of the Diathesis-Stress Model. *Child Development*, 60(1), 15-24. doi:10.2307/1131067
- Whisman, M. A. (2001). The association between depression and marital dissatisfaction. In Beach, S. R. (2001). *Marital and family processes in depression: A scientific foundation for clinical practice*. American Psychological Association.
- Wildeman, C. (2010). Paternal incarceration and children's physically aggressive behaviors: Evidence from the Fragile Families and Child Wellbeing Study. *Social Forces*, 89(1), 285-309.

- Wildeman, C. (2014). Parental incarceration, child homelessness, and the invisible consequences of mass imprisonment. *The ANNALS of the American Academy of Political and Social Science*, 651(1), 74-96.
- Wildeman, C., Schnittker, J., & Turney, K. (2012). Despair by association? The mental health of mothers with children by recently incarcerated fathers. *American Sociological Review*, 77(2), 216-243.
- Wildeman, C., & Turney, K. (2014). Positive, negative, or null? The effects of maternal incarceration on children's behavioral problems. *Demography*, 51(3), 1041-1068.
- Wilson, S., & Durbin, C. E. (2010). Effects of paternal depression on fathers' parenting behaviors: A meta-analytic review. *Clinical psychology review*, 30(2), 167-180.
- Wood, R. G., McConnell, S., Moore, Q., Clarkwest, A., & Hsueh, J. (2012). The effects of building strong families: A healthy marriage and relationship skills education program for unmarried parents. *Journal of Policy Analysis and Management*, 31(2), 228-252.

Table 1.

Descriptive Statistics of Families with Previously Incarcerated Fathers from the Building Strong Families Study Measured at Baseline (N = 426)

Characteristic	N (%)	M (SD)	Min	Max
Maternal age		23.6 (4.7)	18	50
Paternal age		27.1 (6.4)	20	52
Father Income		2.85 (1.99)		
No income	43 (10.1)			
\$1-\$4,999	96 (22.5)			
\$5,000-\$9,999	67 (15.7)			
\$10,000-\$14,999	73 (17.1)			
\$15,000-\$19,999	43(10.1)			
\$20,000-\$24,999	52 (12.2)			
\$25,000-\$34,999	34 (8.0)			
\$35,000 or above	19 (4.4)			
Mother Income		1.66 (1.49)		
No income	86 (20.1)			
\$1-\$4,999	169 (39.6)			
\$5,000-\$9,999	68 (15.9)			
\$10,000-\$14,999	47 (11)			
\$15,000-\$19,999	32 (7.5)			
\$20,000-\$24,999	18 (4.2)			
\$25,000-\$34,999	3 (0.7)			
\$35,000 or above	4 (0.9)			
Baseline father reports of relationship status				
Romantically involved on steady basis	391 (91)			
On and off again relationship	36 (8)			
Father Race/Ethnicity				
Non-Hispanic Black	318 (68)			
Non-Hispanic White	94 (20)			
Latino	34 (7)			
Other	15 (3)			
Mother employed				
Yes	137 (32)			
No	290 (68)			
Father employed				
Yes	279 (65)			
No	148 (35)			
Mother Education				
None	150 (35.1)			
High School Diploma or GED	255 (59.7)			
Father Education				
None	163 (38.2)			
High School Diploma or GED	243 (56.9)			
Child Sex				
Female	237 (55.5)			
Male	190 (44.5)			

Table 2.

Descriptive Statistics of Main Study Constructs from the Building Strong Families Study (N = 426)

Characteristic	<i>M (SD)</i>	Min	Max
Paternal depressive symptoms	4.47(5.98)	0	36.00
Maternal depressive symptoms	4.35(5.52)	0	29.00
Mother reports of coparenting	4.09 (1.04)	1	5
Father reports of coparenting	4.39 (.77)	1	5
Externalizing behavior problems	1.21 (.22)	1	2.2
Internalizing behavior problems	1.58 (.34)	1	2.7

Table 3.
Bivariate Correlations of Key Study Variables (N = 426)

Variable	1	2	3	4	5	6
1. Father depressive symptoms-36 months	—	.08	-.004	.02	.14**	.05
2. Mother depressive symptoms-36 months	--	—	-.07	.02	-.09	-.06
3. Father coparenting alliance	--	--	—	.49**	.01	.03
4. Mother coparenting alliance	--	--	--	—	-.09	-.06
5. Externalizing Behaviors	--	--	--	--	—	.66**
6. Internalizing Behaviors	--	--	--	--	--	—

Table 4. *Hierarchical Regression Analysis in Association with Children's Behavior Problems (N = 426)*

	Externalizing						Internalizing					
	B	β	SE	R^2	R^2 adj	ΔR^2	B	β	SE	R^2	R^2 adj	ΔR^2
Step 1: Control Variables				.09	.06	.09				.10	.06	.01
Father income	.01	.09	.01				.01	.08	.01			
Father education	-.01	-.03	.01				.00	.02	.01			
Father employment status	-.02	-.04	.02				-.08*	-.12	.04			
Father race - Latino	.05	.06	.04				.03	.03	.07			
Father race – Non-Hispanic Black	.07	.14	.10				.08	.10	.15			
Father race – Non-Hispanic White	.05	.09	.10				.12	.15	.15			
Father race – Other	.03	.03	.10				.17	.10	.16			
Father–reports of child sex	-.02	-.04	.02				-.01	-.01	.03			
Mother education status	-.02	-.07	.01				-.01	-.01	.02			
Mother employment status	-.04	-.08	.02				-.01	-.01	.04			
Mother income	-.01	-.05	.01				.00	.00	.01			
Mother depressive symptoms at 15 months	.09***	.21	.02					.27	.00			
							.01***					
Father depressive symptoms at 15 months	.03	.09	.02				.05	.09	.03			
Father–reports of child age	.02	.03	.16				.21	.30	.25			
Mother–reports of child age	-.02	-.05	.16				-.21	-.30	.25			
Intervention group	.00	.01	.02				.00	.03	.00			
Step 2: Main Effects				.13	.09	.04**				.11	.07	.01

CHILDREN WITH PREVIOUSLY INCARCERATED FATHERS

Maternal depressive symptoms at 36 months	-.004**	-.11	.002				-.004	-.07	.003			
<i>Table 4 continues from previous page...</i>												
Paternal depressive symptoms at 36 months	.005**	.14	.002				.003	.06	.003			
Mother coparenting at 36 months	-.02	-.10	.01				-.02	-.06	.02			
Father coparenting at 36 months	.02	.07	.02				.02	.05	.02			
Step 3: Interactions Terms				.14	.08	.01				.13	.08	.02*
Mom coparenting at 36 months X Dad depressive symptoms at 36 months	-.03	-.06	.03				-.01**	-.18	.003			
2. Mom coparenting at 36 months X Mom depressive symptoms at 36 months	.001	.02	.002				.002	.04	.003			
3. Dad coparenting at 36 months X Mom depressive symptoms at 36 months	.002	-.05	.002				-.003	-.04	.003			
4. Dad coparenting at 36 months X Dad depressive symptoms at 36 months	.002	.03	.003				.006	.07	.005			

Note. *** p < .001. ** p < .01. * p < .05.

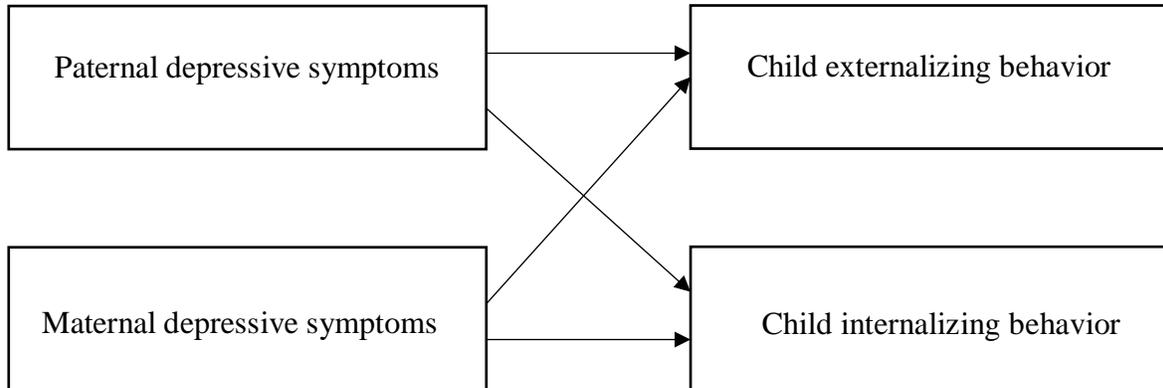


Figure 1. Hypothesis 1 testing the association between parental depressive symptoms and child's internalizing and externalizing behavior.

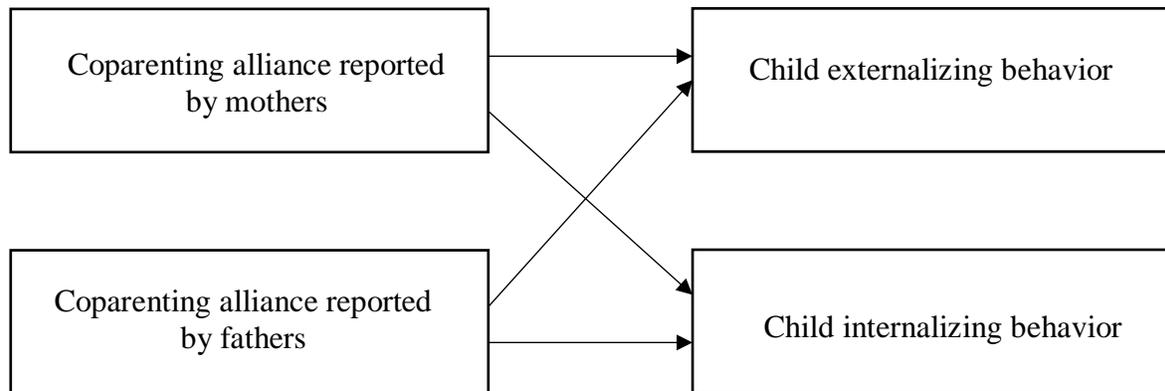


Figure 2. Hypothesis 2 testing the association between coparenting alliance and child's internalizing and externalizing behavior.

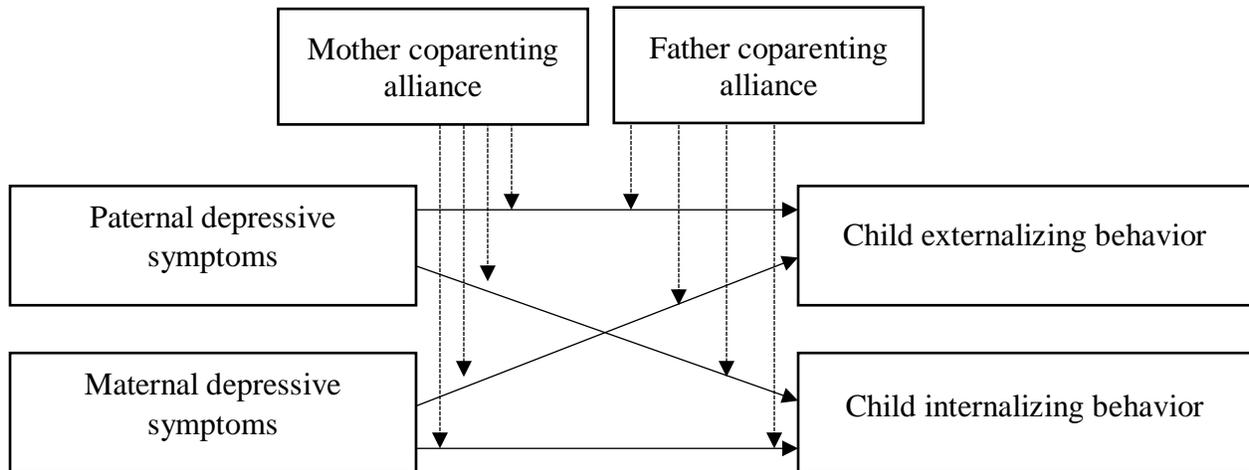


Figure 3. Hypothesis 3a and 3b testing the association between parental depressive symptoms and child's internalizing and externalizing behavior moderated by coparenting alliance.

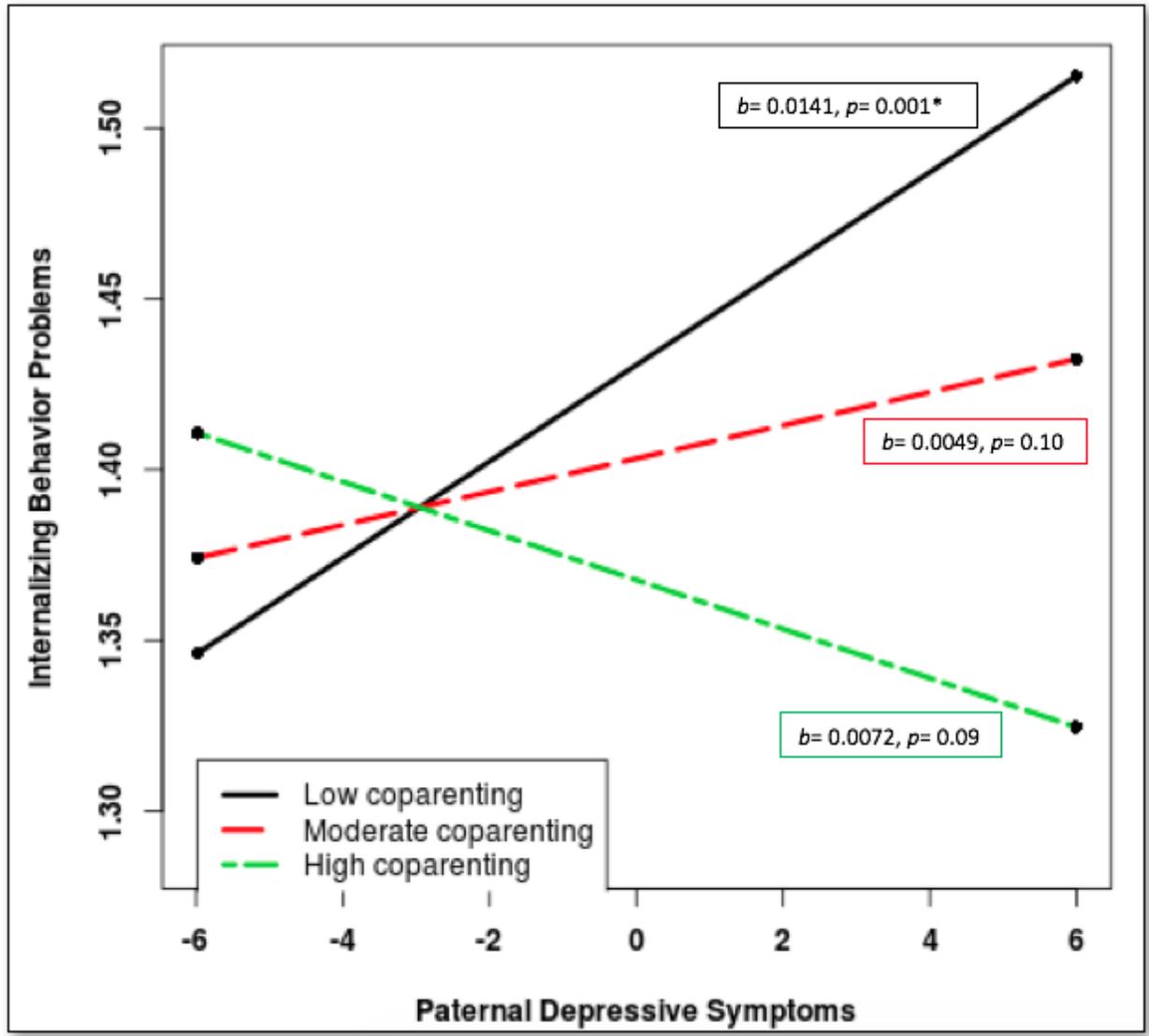


Figure 4. Using Preacher's two-way interaction calculator, I examined the interaction between coparenting alliance reported by mothers and paternal depressive symptoms on young children's internalizing behavior problems. Tests of simple slopes were significant for mothers' reports of lower coparenting alliance ($b = 0.0141$, $t = 3.2497$, $p < .001$), but not for mothers' reports of higher coparenting alliance ($b = -0.0072$, $t = -1.6851$, $p = 0.09$). Paternal depressive symptoms are centered around the mean, -5.98138 , 0.00540 , and $+5.99218$.

Appendix A – SyntaxSumming the CES-D scale

COMPUTE

Dep36.1_sum=SUM(WB1_3_A_36.1,WB1_3_B_36.1,WB1_3_C_36.1,WB1_3_E_36.1,WB1_3_F_36.1,WB1_3_G_36.1,WB1_3_J_36.1,WB1_3_K_36.1,WB1_3_M_36.1,WB1_3_N_36.1,WB1_3_R_36.1,WB1_3_T_36.1).

EXECUTE.

* I summed here and my frequencies showed that my range is 0-36 just like KP dep vars

FREQUENCIES VARIABLES= Dep36.1 Dep36.1_sum

/statistics = all

/ORDER=ANALYSIS.

*moms

COMPUTE

Dep36.2_sum=SUM(WB1_3_A_36.2,WB1_3_B_36.2,WB1_3_C_36.2,WB1_3_E_36.2,WB1_3_F_36.2,WB1_3_G_36.2,WB1_3_J_36.2,WB1_3_K_36.2,WB1_3_M_36.2,WB1_3_N_36.2,WB1_3_R_36.2,WB1_3_T_36.2).

EXECUTE.

FREQUENCIES VARIABLES= Dep36.2 Dep36.2_sum

/statistics = all

/ORDER=ANALYSIS.

*Step 3 repeat for moms and dads at 15mos

COMPUTE

dep15.1_sum=Sum(WB1_3_A_15.1,WB1_3_B_15.1,WB1_3_C_15.1,WB1_3_E_15.1,WB1_3_F_15.1,WB1_3_G_15.1,WB1_3_J_15.1,WB1_3_K_15.1,WB1_3_M_15.1,WB1_3_N_15.1,WB1_3_R_15.1,WB1_3_T_15.1).

EXECUTE.

FREQUENCIES VARIABLES= dep15.1 Dep15.1_sum

/statistics = all

/ORDER=ANALYSIS.

*moms at 15mos

COMPUTE

dep15.2_sum=Sum(WB1_3_A_15.2,WB1_3_B_15.2,WB1_3_C_15.2,WB1_3_E_15.2,WB1_3_F_15.2,WB1_3_G_15.2,WB1_3_J_15.2,WB1_3_K_15.2,WB1_3_M_15.2,WB1_3_N_15.2,WB1_3_R_15.2,WB1_3_T_15.2).

EXECUTE.

Centering independent variables

Coparenting alliance

compute XDADalliance_AP = DADalliance_AP - 4.3345.

compute XMOMalliance_AP = MOMalliance_AP - 3.9485.

execute.

Parental Depressive Symptoms

compute Xdep36.1_sum = dep36.1_sum - 4.47.

compute Xdep36.2_sum = dep36.2_sum - 4.35.

execute.

Computing interaction terms

compute DadCopXdaddep17 = XDADalliance_AP*Xdep36.1_sum.

compute DadCopXmomdep17 = XDADalliance_AP*Xdep36.2_sum.

compute MomCopXmomdep17 = XMOMalliance_AP*Xdep36.2_sum.

compute MomCopXdaddep17 = XMOMalliance_AP*Xdep36.1_sum.

execute.

Regression 1

REGRESSION

/MISSING LISTWISE

/STATISTICS COEFF OUTS R ANOVA

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT intern_cplavg_final4

/METHOD= ENTER FATHERQ9Lat FATHERQ10WHITE FATHERQ10AFAM

FATHERQ10OTHER

t0Q23.1 t0Q23.2

t0Q12.1 t0Q12.2

t0Q22.1recode t0Q22.2recode

t0PREGNANT.1 t0PREGNANT.2

t15FS17.2 Intervention Dep15.1_sum Dep15.2_sum

/METHOD=ENTER Xdep36.1_sum Xdep36.2_sum XMOMalliance_AP XDADalliance_AP

/METHOD=ENTER DadCopXdaddep17 DadCopXmomdep17 MomCopXmomdep17

MomCopXdaddep17.

Regression 2

REGRESSION

/MISSING LISTWISE

/STATISTICS COEFF OUTS R ANOVA

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT extern_cplavg_final4

/METHOD= ENTER FATHERQ9Lat FATHERQ10WHITE FATHERQ10AFAM

FATHERQ10OTHER

t0Q23.1 t0Q23.2

t0Q12.1 t0Q12.2
 t0Q22.1recode t0Q22.2recode
 t0PREGNANT.1 t0PREGNANT.2
 t15FS17.2 Intervention Dep15.1_sum Dep15.2_sum
 /METHOD=ENTER Xdep36.1_sum Xdep36.2_sum XMOMalliance_AP XDADalliance_AP
 /METHOD=ENTER DadCopXdaddep17 DadCopXmomdep17 MomCopXmomdep17
 MomCopXdaddep17.

Filter Syntax

USE ALL.

COMPUTE filtjail30= (t15WB23.1 ge 1 and
 extern_cplavg_final4 ge 1 and intern_cplavg_final4 ge 1 and
 Dep36.1_sum ge 0 and Dep36.2_sum ge 0 and
 DADalliance_AP ge 1 and MOMalliance_AP ge 1 and
 FATHERQ9Lat ge 0 and FATHERQ10AFAM ge 0 and FATHERQ10WHITE ge 0 and
 FATHERQ10OTHER ge 0
 and t0Q23.1 ge 0 and t0Q23.2 ge 0 and
 t0Q12.1 ge 0 and t0Q12.2 ge 0 and
 t0Q22.1recode ge 0 and t0Q22.2recode ge 0 and
 t0PREGNANT.1 ge 0 and t0PREGNANT.2 ge 0 and t15FS17.2 ge 1 and Intervention ge 0 and
 Dep15.1_sum ge 0 and
 Dep15.2_sum ge 0).
 VALUE LABELS filtjail30 0 'Not Selected' 1 'Selected'.
 FORMAT filtjail30 (f1.0).
 FILTER BY filtjail30.
 EXECUTE.

filter by filtjail30.