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# CONTEXTUALIZING COUPLES: THREE ESSAYS ON INEQUALITY, STRESS, AND DYADIC FUNCTIONING AS A LONGITUDINAL AND RECIPROCAL PROCESS

Deadric T. Williams

University of Nebraska–Lincoln, [dwilliams9@unl.edu](mailto:dwilliams9@unl.edu)

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CONTEXTUALIZING COUPLES: THREE ESSAYS ON INEQUALITY, STRESS,  
AND DYADIC FUNCTIONING AS A LONGITUDINAL AND RECIPROCAL  
PROCESS

by

Deadric T. Williams

A DISSERTATION

Presented to the Faculty of  
The Graduate College at the University of Nebraska  
In Partial Fulfillment of Requirements  
For the Degree of Doctor of Philosophy

Major: Sociology

Under the Supervision of Professor Jacob E. Cheadle

Lincoln, Nebraska

December, 2014

CONTEXTUALIZING COUPLES: THREE ESSAYS ON INEQUALITY, STRESS,  
AND DYADIC FUNCTIONING AS A LONGITUDINAL AND RECIPROCAL  
PROCESS

Deadric T. Williams, Ph.D.

University of Nebraska, 2014

Adviser: Jacob E. Cheadle

In this dissertation, I use an integrated theoretical and conceptual model that consists of several theoretical frameworks to examine the following questions: (1) is there a longitudinal and reciprocal association between parental stress/distress and dyadic functioning? (2) does the association change over time? (3) does the association vary across social contexts (e.g., marital status, race/ethnicity, and poverty)? In order to explore these questions, I use longitudinal and dyadic data from the Fragile Families and Child Well-being Study, which follows a cohort of children and their parents from birth to five years of age. Through three separate analytic studies, the results indicate that (a) economic hardship affects both mothers' and fathers' depressive symptoms over time, mothers' depressive symptoms affect family hardships during the earlier years, and hardship and depressive symptoms are associated with distress in the relationship for both parents by their child's fifth birthday. No differences emerge between families (married and cohabiting); however, differences between mothers and fathers were revealed in the analysis for relationship distress; (b) parents' depressive symptoms and cooperative coparenting are longitudinally and reciprocally related. Differences between race and ethnic groups tend to be largely contingent upon the developmental age of the child; and (c) the longitudinal and reciprocal association between parental stress and couple's relationship quality was largely unidirectional and only for mothers—that is, couple's relationship quality reduced maternal parenting stress. The findings were similar across families who did not live in poverty over time and for families who lived in persistent poverty. For families who experience transient poverty, only paternal parenting stress was associated with lower levels of couple's relationship quality. All in all, the results demonstrate that individuals within families are interdependent and parents are involved in interlocking trajectories as their child ages and develops over time. The variations

across chapters points to the overall complexity of family life. Thus, rather than driving home a consistent message, the results illustrate that different domains, whether dyadic or individual, personal or interpersonal, move according to their own rules. To positively influence family life, multiple pathways must be targeted if we, as a society, are willing to help families achieve adequate financial support and family stability. These findings enhance our understating of interpersonal and contextual stressors, dyadic functioning, reciprocity within couples, and the importance of cross-partner associations.

Copyright

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## Dedication

This work is dedicated to three sets of people: First, to my great-grandmother, my grandmother, and my mother – three generations of strong, African American women. Second, to my social fathers – men who helped me to overcome my fears, and pushed me to go back to school. Last, but not least, to my children – who provided the motivation to endure my academic journey.

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I would also like to thank additional committee members who have played an important part in my growth and development, namely Bridget Goosby and Julia McQuillan. There were many times that I came to their offices unannounced and began babbling about sociological ideas. Of course, they listened, and in many cases offered constructive feedback. They both helped me in more specific ways too. Bridget often discussed with me about the brutal reality of being an African-American scholar, and how to position myself to be the best scholar I can be. It was Julia's course on Hierarchal Linear Modeling that sparked my interest in longitudinal modeling. Julia was patient with me and other students in the class, and as a consequence, I was able to eventually "get it." I was able to think about data in a new and exciting way. Also, I am thankful to my outside committee member who helped me at different stages of graduate school. Catherine Huddleston-Casas was present during the dissertation proposal defense, and

offered much needed constructive criticism that helped me to think more broadly about the dissertation.

I would like to acknowledge additional faculty members who has been helpful my entire time at the University of Nebraska-Lincoln. Dan Hoyt, who was Department Chair when I first enrolled, helped to recruit me to Nebraska. His ability and willingness to help me in the beginning set the stage to be able to write and finish the dissertation. Although Christina Falci did not play a direct role in my dissertation, her role was more indirect. Whether it was during class or at academic conferences, Christina treated me like a true professional. In some ways, having a faculty member outside of your dissertation committee offer professional courtesy, helped me to understand another dimension of the professorship.

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## Table of Contents

Copyright .....	iii
Dedication .....	iv
Acknowledgements.....	v
CHAPTER I.....	1
INTRODUCTION .....	1
CONCEPTUAL AND THEORETICAL MODEL.....	3
BREIF DESCRIPTION OF DATA .....	7
THE CONTRIBUTIONS.....	8
CHAPTER PREVIEWS .....	10
REFERENCES .....	13
CHAPTER II.....	17
INTRODUCTION .....	17
LITERATURE REVIEW .....	19
Direct Association Between Economic Hardship and Depression .....	21
Reciprocal Association Between Depression and Economic Hardship.....	23
Economic Hardship and Depression on Relationship Distress .....	25
Differences Between Families: Married and Cohabiters .....	29
Differences Within Families: Mothers and Fathers .....	30
Additional Factors.....	32
METHODS .....	33
Data.....	33
Measures .....	36
Depressive Symptoms.....	36
Economic Hardship.....	37
Relationship Distress .....	37
Control Variables .....	37
Analytic Strategy .....	39
RESULTS .....	41
Descriptive Statistics.....	41

Structural Equation Models .....	42
All Couples .....	42
Differences Between Families: Married and Cohabiting.....	44
Differences Within Families: Mothers and Fathers .....	46
DISCUSSION .....	47
Implications.....	52
Limitations .....	53
Strengths .....	54
CONCLUSION.....	55
REFERENCES .....	57
APPENDIX A.....	73
CHAPTER III .....	85
INTRODUCTION .....	85
LITERATURE REVIEW .....	88
Theoretical Perspective .....	88
Depressive Symptoms and Coparenting .....	89
Coparenting and Depressive Symptoms .....	91
Race/Ethnicity, Parental Depression, and Coparenting .....	93
Coparenting Relationships Over Time.....	95
Additional Factors.....	96
METHODS .....	98
Data.....	98
Measures .....	100
Depressive Symptoms.....	100
Coparenting.....	101
Race/Ethnicity.....	102
Additional Factors.....	102
Analytic Strategy .....	104
RESULTS .....	105
Descriptive Statistics.....	105
Actor-Partner Interdependent Models.....	106
Depressive Symptoms and Coparenting .....	106

Coparenting and Depressive Symptoms .....	107
Race/Ethnicity, Depressive Symptoms, and Coparenting.....	107
DISCUSSION.....	109
Implications.....	112
Limitations .....	113
Strengths .....	114
CONCLUSION.....	115
REFERENCES .....	116
APPENDIX B .....	124
CHAPTER IV .....	142
INTRODUCTION .....	142
LITERATURE REVIEW .....	144
Theoretical Perspective.....	144
Parenting Stress and the Quality of Mother-Father Relationships.....	145
The Quality of Mother-Father Relationships and Parenting .....	146
Stress.....	146
Changes in the Associations as Children Develop Over Time .....	148
Living in (and out) of Poverty .....	148
Additional Factors.....	151
METHODS .....	152
Data.....	152
Measures .....	155
Parenting Stress.....	155
Relationship Quality .....	155
Poverty Histories.....	156
Control Variables .....	156
Analytic Strategy .....	158
RESULTS .....	159
Descriptive Statistics.....	159
Multivariate Models.....	160
DISCUSSION .....	166
Implications.....	170

Limitations ..... 171

Strengths ..... 171

CONCLUSION..... 172

REFERENCES ..... 173

APPENDIX C ..... 180

CHAPTER V ..... 195

RE-INTRODUCTION ..... 195

DISCUSSION ..... 197

    Conceptual & Theoretical Model..... 197

    Implications..... 201

    Limitations ..... 203

    Strengths ..... 203

CONCLUSION..... 204

REFERENCES ..... 206

## List of Tables

Table 2.1: Sample Statistics (Means, Percentages, and Standard Deviations) among Couples, by Marital Status .....	75
Table 2.2: Weighted Means for Economic Hardship, Depressive Symptoms, and Relationship Distress, by Marital Status .....	76
Table 2.3: Exponentiated Beta Coefficients for the Longitudinal and Reciprocal Effects on Economic Hardship and Depressive Symptoms, by Marital Status .....	77
Table 2.4: Standardized Regression Coefficients for the Effects of Economic Hardship and Depressive Symptoms on Relationship Distress .....	78
Table 2.5: Attrition for Mothers and Fathers Between Years 1 - 3 .....	79
Table 2.6: Attrition for Mothers and Fathers Between Years 3 - 5 .....	79
Table 2.7: Relationship Dissolution Between Years 1 - 3 .....	80
Table 2.8: Relationship Dissolution Between Years 3 - 5 .....	80
Table 2.9: Control Variables on the Longitudinal and Reciprocal Effects .....	81
Table 2.10: Control Variables for the Longitudinal and Reciprocal Effects (Marrieds Only) .....	82
Table 2.11: Control Variables for the Longitudinal and Reciprocal Effects (Cohabitors Only) .....	83
Table 2.12: Control Variables on Relationship Distress .....	84
Table 3.1: Weighted Descriptive Statistics by Race/Ethnicity (N = 1052) .....	127
Table 3.2: Weighted Mean Differences .....	128
Table 3.3: Parameter Estimates for the Association between Depressive Symptoms and Coparenting .....	129
Table 3.4: Standardized Coefficients Linking Depressive Symptoms to Coparenting, by Race/Ethnicity .....	130
Table 3.5: Exponentiated Estimates Linking Coparenting to Depressive Symptoms, by Race/Ethnicity .....	131
Table 3.6: Attrition for Mothers and Fathers Between Years 1 - 3 .....	132

Table 3.7: Attrition for Mothers and Fathers Between Years 3 - 5 .....	133
Table 3.8: Relationship Ended Between Years 1 - 3 .....	134
Table 3.9: Relationship Ended Between Years 3 - 5 .....	135
Table 3.10: Standardized Estimates for Control Variables on Coparenting at Year-3 and Year 5 (All Couples).....	136
Table 3.11: Negative Binomial Estimates for Control Variables on Depressive Symptoms at Year-3 and Year 5 (All Couples) .....	137
Table 3.12: Standardize Estimates for Control Variables on Coparenting by Race/Ethnicity (Year- 3) .....	138
Table 3.13: Standardize Estimates for Control Variables on Coparenting by Race/Ethnicity (Year- 5) .....	139
Table 3.14: Negative Binomial Coefficients for Control Variables on Depressive Symptoms by Race/Ethnicity (Year- 3) .....	140
Table 3.15: Negative Binomial Coefficients for Control Variables on Depressive Symptoms by Race/Ethnicity (Year- 5) .....	141
Table 4.1: Descriptive Statistics, by Poverty Histories.....	181
Table 4.2: Means on Parenting Stress and Couple's Relationship Quality .....	182
Table 4.3: Standardized Parameter Estimates.....	183
Table 4.4: Standardized Parameter Estimates, by Poverty Histories.....	184
Table 4.5: Attrition for Mothers and Fathers between Years 1 and Year 3.....	185
Table 4.6: Attrition for Mothers and Fathers between Year 1 and Year 3 .....	185
Table 4.7: Relationship Dissolution for Mothers and Fathers between Year 1 and Year 3 .....	186
Table 4.8: Relationship Dissolution for Mothers and Fathers between Year 3 and Year 5 .....	186
Table 4.9: Parameter Estimates for Control Variables on Relationship Quality (Y-Standardized) .....	187

Table 4.10: Parameter Estimates for Control Variables on Parenting Stress (Y-Standardized) .....	188
Table 4.11: Parameter Estimates for Control Variables on Relationship Quality (Y-Standardized), by No Poverty .....	189
Table 4.12: Parameter Estimates for Control Variables on Parenting Stress (Y-Standardized), by No Poverty .....	190
Table 4.13: Parameter Estimates for Control Variables on Relationship Quality (Y-Standardized), by Transient Poverty .....	191
Table 4.14: Parameter Estimates for Control Variables on Parenting Stress (Y-Standardized), by Transient Poverty .....	192
Table 4.15: Parameter Estimates for Control Variables on Relationship Quality (Y-Standardized), by Persistent Poverty .....	193
Table 4.16: Parameter Estimates for Control Variables on Parenting Stress (Y-Standardized), by Persistent Poverty .....	194

## List of Figures

Figure 1.1: Conceptual and Theoretical Framework: A Model Depicting the Association between Parental Stress/Distress, Dyadic Functioning, and Contextual Factors Over Time among Couples with a Young Child.....	12
Figure 2.1: Conceptual Model for the Longitudinal and Reciprocal Effects of Economic Hardship and Depressive Symptoms among Couples .....	73
Figure 2.2: Conceptual Model Linking Economic Hardship, Parents' Depressive Symptoms, and Parents' Relationship Distress .....	74
Figure 3.1: Conceptual Model Linking Depressive Symptoms, Coparenting, and Race/Ethnicity over Time .....	124
Figure 3.2: Latino Ancestry among Mothers .....	125
Figure 3.3: Latino Ancestry among Fathers .....	125
Figure 3.4: Geographic Location for Mothers, by Race/Ethnicity .....	126
Figure 3.5: Geographic Location for Fathers, by Race/Ethnicity .....	126
Figure 4.1: Conceptual Model for Parenting Stress, Couple's Relationship Quality, Poverty Histories Over Time .....	180



## CHAPTER I

### *Motivation & Introduction*

#### **INTRODUCTION**

Over the past decade, increased attention has been given to the importance of strengthening couple's relationships among low-income parents and families. Much of this attention reflects changes in broader family processes such as the growing rate of children born to unmarried parents (Copen, Daniels, and Mosher 2013), the risk of relationship dissolution between parents (Cherlin 2009, 2010), economic inequality associated with various family forms (McLanahan 2004, 2009), and how these processes adversely affect children's well-being (Brown 2010; Thomson, Hanson, and McLanahan 1994). As such, policy makers and researchers aim to identify and address the factors that contribute and impact the stability and quality of relationships among parents with young children. To this end, scholars are making concerted efforts to understand parenthood, the fluidity of couple's relationships, and the social context in which parents and families are embedded (Johnson 2012) with intentions to ascertain ways to reduce family inequality and ensure children's well-being.

A point of emphasis for many empirical and intervention studies examining couple's relationships focuses on parenthood dynamics and the interactional processes between parents after the birth of a child. Indeed, parenthood is major life event that consists of both rewards and strain (Nomaguchi and Milkie 2003). Although having a child is associated with life satisfaction and happiness (Nelson et al. 2013), a plethora of research reveals that parents with young children are at an elevated risk for stress and

distress (e.g., Umberson, Pudrovska, and Reczek 2010), and the demands of parenting a young child often create strain on the relationship between intimate partners (Umberson and Reczek 2007). These latter findings are critically important given the adverse effects of parental stress and the quality of parental relationships have on families and children's wellbeing (Benzies, Harrison, and Magill-Evans 2004; Crnic, Gaze, and Hoffman 2005; Cui, Donnellan, and Conger 2007). In fact, scholars have paid close attention to ways in which stress affects family and dyadic functioning (Lavee 2013; Randall and Bodenmann 2009), and the importance of positive and supportive family relationships in reducing stress and distress (Cutrona 1996; Thoits 2011; Umberson and Montez 2010). These studies, however, have been part of two separate research agendas. On the one hand, there is a line of research examining the extent to which stress/distress affects dyadic functioning. On the other hand, there are studies exploring how dyadic functioning (e.g., spousal/partner support) affects stress/distress. Consequently, a critical question remains largely unanswered: *how do parental stress/distress and positive dyadic functioning influence one another?* Specifically, is the association from parental stress/distress to dyadic functioning, vice versa, or both?

This dissertation attempts to bridge these separate research agendas in order to understand the stress-dyadic functioning conundrum while also providing empirical insight on couple's relationships, which may be valuable for intervention and programmatic efforts designed to build strong families. Thus, *the central purpose of this dissertation is to examine indices of parental stress/distress and dyadic functioning as a longitudinal and reciprocal process.* Moreover, the association between parental stress/distress and dyadic behaviors may be a function of their child's developmental

stage. For instance, developmental perspectives rest upon the notion that individuals change over time (e.g., Elder 1998), and with such changes come different needs for both children and intimate partners. Specifically, as parents' respond to their child's ever-changing needs, mothers and fathers often encounter different stressors, and the nature and quality of the intimate partnership also changes—for better or for worse. Even more, both parental stress/distress and dyadic functioning may also vary across social context. Social context refers to the content and conditions that affect and shape the experiences that many individuals and families encounter (Karney and Bradbury 2005). This research uses marital status, race and ethnicity, and poverty as individual and familial characteristics that can shape the nature of familial context (Huston 2000; Johnson 2012).

Thus, using panel data from the Fragile Families and Child Well-being Study, this dissertation attempts to contribute to and build on prior research on parental stress/distress and dyadic functioning among couples, how these processes vary over time, and across social contexts. Specifically, the research is organized around three fundamental questions: (1) *Is there a longitudinal and reciprocal association between parental stress/distress and dyadic functioning?* (2) *Does the association change over time?* (3) *Does the association vary across social contexts (e.g., marital status, race/ethnicity, and poverty)?*

## **CONCEPTUAL AND THEORETICAL MODEL**

Figure 1.1 displays the conceptual model that informs the theoretical relationships between constructs and guides the empirical analyses across the analytic studies in Chapters II, III, and IV. The figure encompasses an integrated framework that joins together several theories, and presents the direction of hypothesized associations between

the key factors: (a) stress/distress, (b) dyadic functioning, (c) contextual factors, and (d) the role of time (i.e., children's developmental stages). Notably, this framework builds on prior models that emphasize the importance of stress and contextual factors for studying intimate partners (Huston 2000; Johnson 2012; Karney and Bradbury 1995) by incorporating both direct and reciprocal pathways between parental stress/distress and dyadic functioning, and examining the continuity and change in these processes as a function of children's early developmental stages. The brief review of research presented below is organized in accordance with the conceptual and theoretical model implemented in this dissertation.

<INSERT FIGURE 1.1 HERE>

First, Path A represents the association from parental stress/distress to dyadic functioning. Drawing from family stress (Conger, Conger, and Martin 2010) and stress spillover (Bolger et al. 1989; Neff and Karney 2007) perspectives, the expectation is that stress/distress, whether economic (e.g., economic hardship), interpersonal (e.g., parenting stress), or psychological (e.g., depressive symptoms), directly impacts dyadic functioning between partners. Stress often leads to conflict and/or withdrawal between intimate partners, creating a contagion of stressful experiences that affects the well-being of couple dyads. Reciprocally, Path B demonstrates that indices of dyadic functioning is associated with parental stress/distress. This path relies on research that suggests that being in a positive, supportive, and well-functioning relationship gives individuals a sense of emotional sustenance (love, care, attention, etc.) that tends to work as a coping resource in lowering stress (Cutrona 1996; Don and Mickelson 2012; Lavee 2013). Taken

together, Paths A and B indicates the hypothesis that there is reciprocity between parental stress/distress and dyadic functioning.

Paths C and D indicate that individual and family characteristics (e.g., family status, race/ethnicity, poverty) may moderate the association between parental stress and dyadic functioning. These characteristics typically provide the content that shape familial context (Johnson 2012; Karney and Bradbury 2005). Given that *cohabiting couples* (compared to married couples), *race and ethnic minorities* (compared to Whites), and *families living in poverty* (compared to families living out of poverty) tend to experience higher levels of psychological distress (Umberson et al. 2010), increased levels of stress in parenting (Cooper et al. 2009; Nomaguchi and House 2013; Raikes and Thompson 2005), and display lower levels of relationship quality (Brown and Booth 1996a; Bulanda and Brown 2007; McLanahan and Beck 2010), it is expected that these factors may moderate the association between parental stress/distress and dyadic functioning in a number of ways. For example, because stress/distress is more prevalent in the aforementioned social groups, the negative impact of stress/distress on dyadic functioning may be exacerbated for these groups (Path C). In addition, being in positive and supportive relationship may be more meaningful for each social group (described above), and thus attenuate the levels of parental stress/distress (Path D). Equally, no differences may emerge in the associations as stress may affect all couples, and positive, well-functioning relationships may reduce stress/distress across social group.

Finally, drawing from life course and developmental perspectives (Elder 1998), the conceptual model includes the notion of time (i.e., children's developmental stages) as an important factor that may affect the extent to which parental stress and dyadic

functioning are associated. These perspectives contend that as children grow and change, so do their needs and demands. As such, parents are faced with adjusting to those needs which may affect both parental stress/distress and dyadic functioning between parents. The association between stress/distress and dyadic functioning may change as a function of their child's developmental stage in two ways: On the one hand, there is reason to expect that children's early development (i.e., infant to toddler) may be most critical for parents because children need more attention and care compared to older developmental stages (i.e., toddler to preschool) leading to an increase in parental stress, which puts strain on couple's relationships (Milkie et al. 2004; Nomaguchi and Milkie 2003). Likewise, having a supportive partner during this early stage may prove to be particularly helpful relative to later stages. On the other hand, the toddler to preschool developmental stages may prove to be more challenging compared to earlier phases because children tend to become more independent and begin to test parental limits, thus creating stress and strain (Putnick et al. 2010; Schoppe-Sullivan et al. 2004). Moreover, dyadic functioning may be most needed during the toddler to preschool years than earlier developmental years. Thus, in either case, there is some expectation that stress/distress, dyadic functioning, and children's stage of development operate in tandem.

Taken together, the conceptual model presented in Figure 1.1 provides an integrated framework for addressing the longitudinal and reciprocal relationship between stress/distress and dyadic functioning, the contextual factors that may moderate the association, and the importance of the continuity and change in these associations as children develop over time. The framework not only highlights the complexity of intimate relationships but also gives equal importance to an array of factors that

contributes to the functioning of parents with a young child. This integrated framework is especially important given the policy and programmatic efforts to strengthen couple's relationships.

### **BREIF DESCRIPTION OF DATA**

To test the conceptual and theoretical model presented above, this dissertation uses data from the Fragile Families and Child Well-being Study (FFCW). The FFCW study is a longitudinal and representative sample (when weighted) of births in large U.S. cities with populations of 200,000 or more in the late 1990s and early 2000s, and includes an oversample of unmarried parents and a comparable married sample (Reichman et al. 2001). Data for the baseline survey was collected between 1998 and 2000. Mothers were interviewed in the hospital within 48 hours after given birth, and fathers were interviewed in the hospital or as soon as possible following the birth. Both parents were re-interviewed when the child was one- (1999-2002), three- (2001-2003), and five- (2003-2005) years of age. The FFCW study is a rich dataset that includes several factors that tap into several indices of parental stress/distress, the nature and quality of intimate relationships, and includes a host of demographic and contextual variables. Moreover, these data provide identical measures of parental stress/distress and dyadic functioning for both parents over time which allows researchers to examine the continuity and change in these factors. Thus, these data are ideal for examining the conceptual and theoretical model above.

The samples for each empirical chapter consist of couples living together (married and cohabiting) at the baseline survey and who remained together at the 1-, 3-, and 5-year follow-up surveys. The sample size varies across studies due to attrition, relationship

dissolution, and missing data on key variables of interest. Indeed, multiple imputation was used in each empirical chapter to partly address these concerns. Overall, the results in each study can be generalized to U.S. couples living together in urban cities over the first five years after a child's birth.

### **THE CONTRIBUTIONS**

This dissertation makes a number of important contributions to the extant research on parental stress, dyadic functioning, and couples with young children. First, by examining an integrated model of parental stress and dyadic functioning with longitudinal data, my research tests and expands on important findings that have been largely studied unidirectionally. My contribution is to examine parental stress and dyadic functioning as potentially dynamic and reciprocal processes using longitudinal data. Therefore the analyses allow both parental stress and dyadic functioning to be evaluated simultaneously and on equal footing. Findings from this dissertation offer important insights into the parental stressors that infringe upon intimate relationships, and highlight the relational processes between parents that helps to reduce parental stress/distress.

Second, by elaborating these processes across time as children develop and across social contexts (i.e. marital status, race/ethnicity, poverty), this research seeks to further illuminate the ways in which families experience their lives. Indeed, both a child's developmental stage and social context have serious implications over the life course of many families. Because children pose critical challenges to their parents at different developmental stages, the findings can help reveal when parents' relationships are most vulnerable and assist programmatic efforts by helping couples at the most critical times. Indeed, low stress levels and positive relationship quality benefits children's long-term



overall growth trajectory (e.g., Brown 2010). Moreover, given that individual and family characteristics shapes family context in many ways, the findings can assist in creating more culturally sensitive and context specific ways to help couples and families.

Third, information regarding parental stress/distress and dyadic functioning is leveraged from both mothers and fathers. Prior research has used mothers' reports to gauge the dyadic relationship. With an increase in the availability in dyadic data, researchers are beginning to examine familial processes in more holistic ways. These data allow for more critical theorizing and rigorous analytic techniques that takes into account the complex nature of families. Moreover, among heterosexual couples, experiencing stress/distress and levels of dyadic functioning are unequally distributed between parents, especially after the birth of a child. For instance, mothers are more likely to engage in early parenting and report lower levels of relationship quality than fathers (Bianchi and Milkie 2010; Umberson et al. 1996). As such, highlighting differences between mother and fathers may help to develop sex-specific programmatic efforts in reducing parental stress/distress and enhancing intimate partnerships. Indeed, some studies have shown that a couple-focused approach may prove to be more promising for policies aimed to sustain relationship health compared to parent-focused approaches (Cowan and Cowan 2008).

Finally, because prior research guiding intervention efforts to strengthen couple's relationship were disproportionately guided by samples of White, middle-class married two-parent families, this research uses a representative sample of births to a diverse set of parents living in urban areas. All in all, this research highlights how parental stress/distress and indices of dyadic functioning are linked as their child develop from an

infant to toddlerhood to preschool, and informs policies and programs designed to strengthen couples and families.

### **CHAPTER PREVIEWS**

The aforementioned conceptual and theoretical model discussed above guides the subsequent analytic chapters (Chapters II, III, and IV). First, Chapter II examines the association between economic hardship, parents' depressive symptoms, and relationship distress. The chapter addresses (a) the longitudinal, reciprocal, and dyadic association between economic hardship and parents' depressive symptoms as their child ages over time, (b) the effects of economic hardship and parents' depressive symptoms is associated with relationship distress for both parents, (c) whether the effects differ across family status (married vs. cohabitators), and (d) examines differences within families (mothers vs. fathers). There is evidence that economic hardship affects both mothers' and fathers' depressive symptoms over time, mothers' depressive symptoms affect family hardships during the earlier years, and hardship and depressive symptoms are associated with distress in the relationship for both parents by their child's fifth birthday. No differences emerge between families (married and cohabiting); however, differences between mothers and fathers were revealed in the analysis for relationship distress: hardship on relationship distress mattered more for fathers than mothers, and depressive symptoms mattered more for mothers than fathers.

Chapter III examines the longitudinal and reciprocal association between parents' depressive symptoms and cooperative coparenting, and whether the associations differ across race and ethnic groups. To evaluate the associations, data analyses were executed using a series of actor-partner interdependent models that were age-specific: from infant

to toddler, and from toddler to preschool. The findings reveal that parents' depressive symptoms and cooperative coparenting are longitudinally and reciprocally related. Differences between race and ethnic groups tend to be largely contingent upon the developmental age of the child.

Chapter IV explores the longitudinal and reciprocal association between parenting stress and couple's relationship quality, and whether these processes differ across family poverty history. In order to gauge the dyadic nature of the couple, I operationalized couple's relationship quality by combining both parents' view of the relationship. The results indicate that the longitudinal and reciprocal association between parental stress and couple's relationship quality was largely unidirectional and only for mothers—that is, couple's relationship quality reduced maternal parenting stress. The findings were similar across families who did not live in poverty over time and for families who lived in persistent poverty. For families who experience transient poverty, only paternal parenting stress was associated with lower levels of couple's relationship quality.

Chapter V summarizes the research questions and evaluates the overall conceptual and theoretical model by addressing whether the hypothesized relationships between constructs were supported or not supported, and whether the results corroborate the findings from prior studies. The second part of Chapter V integrates the earlier chapters. In addition, I discuss future research, address strengths and weaknesses, and provide implications for research and policy.

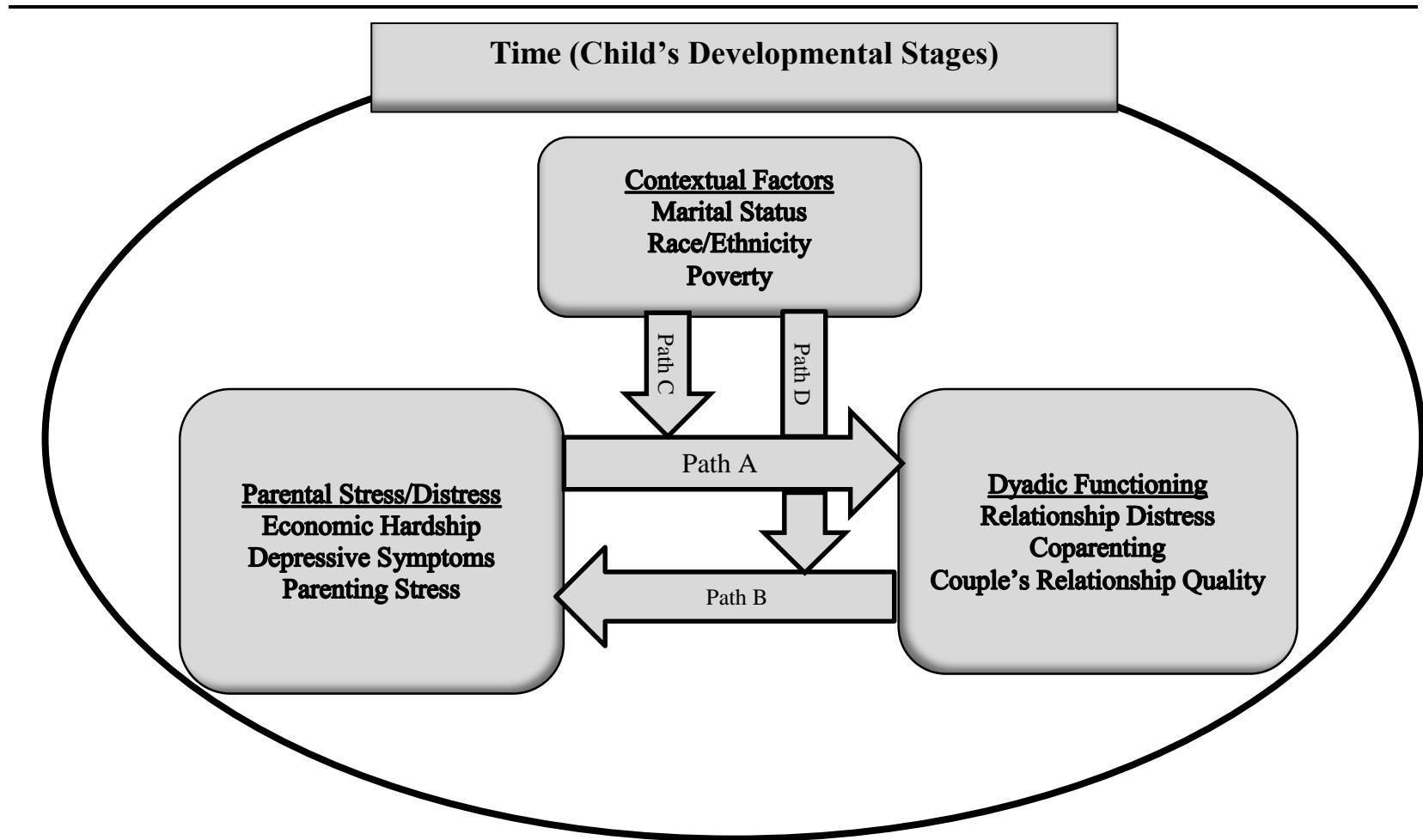


Figure 1.1: Conceptual and Theoretical Framework: A Model Depicting the Association between Parental Stress/Distress, Dyadic Functioning, and Contextual Factors Over Time among Couples with a Young Child

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## CHAPTER II

### *Economic Hardship, Parents' Depressive Symptoms, and Relationship Distress among Couples*

#### INTRODUCTION

Young children place many demands on parents, and these demands can contribute to lower levels of psychological well-being. The general explanation is that children increase parents' daily stressors, which, in turn, leads to elevated levels of depressive symptoms (Evenson and Simon 2005; Umberson et al. 2010). In fact, studies show that depressive symptoms affect roughly 10-15% of new mothers (Breese McCoy 2011), and about 2-10% of new fathers (Paulson and Bazemore 2010; Wee et al. 2011).

Additionally, because parenthood requires significant financial obligations, parents experiencing economic hardship may find the parenting role especially stressful, putting mothers and fathers at a greater risk for depression (Bronte-Tinkew et al. 2007; Manuel et al. 2012). Reciprocally, parents' post-birth depressive symptomology may lead to a decline in employment opportunities, work hours, and household income creating financial hardships within families (Ennis, Hobfoll, and Schroder 2000; Gupta and Huston 2009). Understanding both economic hardship and depressive symptoms, and how they are linked together, after the birth of a child is important because these stressors create elevated levels of distress and conflict between partners (Conger, Conger, and Martin 2010) affecting relationship quality and stability (Hardie and Lucas 2010).

The stress process and family stress theories have been important frameworks for furthering our understanding of the link between economic hardship and depressive

symptoms (Pearlin et al. 2005), and how these factors contribute to relationship outcomes in families (Conger, Conger, and Martin 2010; Westman and Vinokur 1998). Although these theories are associated with separate research agendas, there has been a recent push toward integration (Milkie 2010) to highlight the extent to which stress affects both individual and familial processes, and to underscore the interdependent nature of individuals within families (e.g., Cox and Paley 1997). The combination of stress process and family stress theories may be particularly important because hardship contributes to individuals' mental health, while mental health can also contribute to family hardships. These associations may linger over time creating a reciprocal influence.

In addition, both hardship and mental health can create strain and antagonism between partners leading to relationship dissolution. Addressing both individual- and couple-level responses to adverse conditions paints a more holistic picture on the adverse ways in which stress affect families. Thus, the purpose of this study is to (a) examine the links between family economic hardship and parents' depressive symptoms as a longitudinal dyadic process among couples 1-, 3-, and 5-years after the birth of a child, and to (b) understand the extent to which both hardship and depressive symptoms are associated with mother's and fathers' report of relationship distress five years after the birth of a child. Further, given the differences in financial and psychological resources between families (married and cohabiting) and differences in stress exposure within families (mothers and fathers), this chapter also (c) examines whether the processes vary by marital status and gender.

The current study extends previous research in several ways. First, I address the association between economic hardship and depressive symptoms using a longitudinal

dataset that contains a diverse sample of biological parents (mothers and fathers) 1-, 3-, and 5- years after the birth of a child. Understanding how hardship and depressive symptoms unfold over time among couples with young children is important because of the adverse consequences for children's well-being (McLoyd 1998; Ramchandani et al. 2008; Sobolewski and Amato 2005). Second, I examine whether economic hardship and depressive symptoms are associated with relationship distress 5-years after the birth of a child—a time that is critical for the stability for some parents (Cherlin 2010b). Last, I examine whether these processes vary between married and cohabiting couples, and between mothers and fathers. This research presents information on the ways in which couples living together in urban cities during five years after the birth of a child respond to individual and family level stressors.

## LITERATURE REVIEW

Figures 2.1 and 2.2 outline the conceptual models guiding the analyses and are used to orient the review of prior research. In Figure 2.1, the conceptual model presents relationships among economic hardship and depressive symptoms as a longitudinal and reciprocal process. In the current study, the stress process framework is utilized to understand the direct effects of early hardship on later depressive symptoms. Some scholars refer to this as the *causation hypothesis* (Muntaner et al. 2013)—which suggests that having fewer economic resources places individuals at risk for mental health problems. The reciprocal effect from early depressive symptoms to later economic hardship has been referred to as the *selection hypothesis*<sup>1</sup>—that is, individuals with higher

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<sup>1</sup> The current study does not empirically examine the causation versus selection debate. The debate is mentioned here to recognize the plethora of research that has addressed the relationship between socioeconomic status and mental health. Thus, the inferences and conclusions drawn in this chapter do not add to this specific debate. Rather, the current study seeks to understand the extent to which economic hardship and depressive symptoms may covary over time for mothers and fathers after the birth of a child.

levels of depressive symptoms are “selected” into a lower socioeconomic position because their mental health status hinders and prevents them from obtaining upward social mobility through the inability to work (Eaton 2001; Muntaner et al. 2013). Moreover, there is reason to believe that these processes may vary across families, and within families. For example, married couples have more financial resources and better health, when compared to cohabiting couples (Sassler 2010), and within many heterosexual relationships, family processes are organized around gender (Ridgeway 2011). The current study examines how economic hardship and depressive symptoms may reciprocally influence each other over time among couples after the birth of a child. In Figure 2.1, Path A represents the direct effect of economic hardship on depressive symptoms, Path B represents the reciprocal effects leading from depressive symptoms to economic hardship, and Paths C and D highlight the moderating effects of marital status and parents’ gender, respectively. The model also takes into account the stability and change in these processes as children develop over time.

<INSERT FIGURE 2.1 HERE>

Figure 2.2 shows the conceptual model displaying the association of economic hardship and depressive symptoms on relationship distress. Similar to marital distress, which reflects couples who have considered divorce or separation (Booth, Johnson, and Edwards 1983; Conger, Rueter, and Elder 1999), the term relationship distress is used because the sample includes both married and cohabiting couples. For the conceptual model (Figure 2.1), I draw on features of family stress theories to examine the direct effects of hardship and depressive symptoms on relationship distress (Conger, Conger, and Martin 2010), and the extent to which one partner’s depressive symptoms affect

relationship distress in the other partner (Larson and Almeida 1999a). Economic hardship interferes with the quality of relationships because financial difficulty produces strain and conflict between partners that often leads to poor relationship quality and dissolution (Conger, Conger, and Martin).

Similarly, depressive symptoms affect couple dyads because depressed individuals tend to show less affection and support, and become hostile toward their partner, which often leads to unfavorable relationship outcomes for families (Conger, Conger, Martin 2010; Kouros and Cummings 2011). Taken together, these theories take into account relationship distress as both an individualistic and dyadic process. Similar to the model presented in Figure 2.1, this model takes into account whether the associations vary between and within families. Specifically, in Figure 2.2, Path A represents the direct effects of economic hardship on relationship distress; Path B indicates the effect of depressive symptoms on relationship distress. Paths C and D demonstrates the moderating effects of marital status and parents' gender, respectively.

### ***Direct Association Between Economic Hardship and Depression***

Proponents of the stress process perspective argue that economic hardship is a source of stress that is manifested in psychological well-being (Pearlin et al. 1981, 2005). More specifically, economic hardship represents adverse material and economic conditions (e.g., poor housing, inability to pay bills, etc.) that ultimately influence families by affecting individuals' physical health, anxiety, anger, and depression (Edin and Kissane 2010; Goosby 2007; Kahn and Pearlin 2006; McLoyd 1990). For parents with a young child, hardships may interfere with social roles such as being a good mother and father (Avison and Turner 1988; Pearlin et al. 1981, 2005; Ross and Huber 1985). As such, the

inability to carry out socially prescribed roles produces depressed feelings such as despair and hopelessness which takes a toll on parents' overall psychological well-being with persistent economic hardship mattering more than episodic experiences (Kahn and Pearlin 2006; Lynch, Kaplan, and Shema 1997).

Prior studies have consistently found that economic hardship leads to higher levels of depressive symptoms (Heflin and Iceland 2009; Kinnunen and Feldt 2004; Manuel et al. 2012; Mirowsky and Ross 1999, 2001; Solantaus, Leinonen, and Punamaki 2004; Zimmerman and Katon 2005). These studies, however, have focused largely on individual-level data. Examining the association between hardship and depression for couples suggests that although financial hard times are a shared experience within families, the ways in which individuals respond to hardships may depend on the family member. There is some evidence that economic hardship leads to higher levels of depressive symptoms for both partners in couple dyads. For example, Ross and Huber (1985), using a national sample of married couples (N=340 couples), found that economic hardship increases both spouses levels of depressive symptoms. Similarly, Wickrama and colleagues (Wickrama et al. 2010, 2012) reported that economic hardship was significantly related to higher levels of depressive symptoms, and other health outcomes, for married couples during the middle years of life. In another study, using a sample of urban and rural African American couples, (Conger et al. 2002) found that economic pressure is associated with higher levels of depressed mood for both spouses. Other studies using dyadic data reported similar findings (Conger et al. 1999; Kinnunen and Feldt 2004; Parke et al. 2004).

Although these prior studies have increased our understanding of the association between economic hardship and depression in couples, the findings are based on either cross-sectional data (Conger et al. 2002; Ross and Huber 1985) or longitudinal samples that are disproportionately White, middle-aged married couples (Wickrama et al. 2012). Understanding hardship and depressive symptoms is especially important for parents with a young child because children of depressed parents tend to have adverse developmental outcomes such as cognitive and language deficiencies and poor mental health (NICHD and Human Development Early Child Care Research Network 2005; Petterson and Albers 2001; Sohr-Preston and Scaramella 2006). The current study moves this line of research forward by examining the effect of economic hardship on depressive symptoms for a diverse sample of couples during their child's early developmental periods: infant, toddler, and preschool. Thus, as shown in Figure 2.1, Path A, I hypothesize that *higher economic hardship levels are associated with elevated depressive symptoms for both mothers and fathers over time.*

### ***Reciprocal Association Between Depression and Economic Hardship***

Although there are reasons to believe that socioeconomic status and mental health are mutually reinforcing, many empirical studies have highlighted that economic hardship leads to depressive symptoms rather than vice versa. Yet, there is a strong theoretical argument that contends that higher levels of depressive symptoms are associated with lower socioeconomic status. This line of reasoning suggests that individuals with mental health problems are less likely to obtain and maintain employment opportunities (Dohrenwend et al. 1992; Wadsworth and Achenbach 2005) which, in turn, leads to the inability to purchase essential household goods and services (i.e., food, shelter, health

care, etc.). Given the prevalence of psychological distress for parents with young children (Breese McCoy 2011; Evenson and Simon 2005; Umberson et al. 2010), seeking and maintaining employment may be especially challenging, and thus putting families at risk for economic hardship.

Prior research has examined the effects of mental health on economic outcomes. Many of these studies, however, focus on the causation versus selection debate—a debate that spans across nearly five decades (Aneshensel, Phelan, and Bierman 2013; Lorant et al. 2003; Muntaner et al. 2004). Contemporary studies show that depressive symptoms hinder economic opportunities such as employment and income. For example, in a study using panel data from the National Longitudinal Survey of Youth (NLSY), Dooley, Prause, and Ham-Rowbottom (2000) found that respondents who were depressed at the prior wave had an elevated risk for being unemployed subsequently. Similarly, two studies using longitudinal data from Australia, Butterworth et al. (2012) and Olesen et al. (2013) found that respondents' mental health status was significantly associated with the overall time being unemployed. These results are consistent with Whooley et al.'s (2002) study that revealed that depression increased the odds of unemployment; and, respondents who were at risk for depression at the baseline survey were twice as likely to have lower levels of income compared to those without a risk of depression. All in all, these studies show that psychological well-being can affect economic outcomes.

Still, prior studies examining the reciprocal association between depressive symptoms and economic outcomes have not examined the effects as a longitudinal dyadic process among couples with a young child. Again, this may be an important yet critical time as parents begin to regain their post-birth physical, emotional, and psychological



equilibrium (Tucker et al. 2010). As such, parents with depression symptoms may need more time at home before returning to work, or may find pursuing employment opportunities challenging (Gupta and Huston 2009). Subsequently, families may begin to suffer economically; and, the adverse economic conditions can lead to both short- and long-term negative consequences for families and children (Edin and Kissane 2010; Sobolewski and Amato 2005). Although previous studies do not examine the effects of depressive symptoms on economic hardship explicitly, prior research shows that depressive symptoms affect other economic outcomes such as income levels and employment status, which are highly related to families' economic and material well-being. Thus, I expect that parents' depressive symptoms will affect mothers and fathers' economic well-being in similar ways. As shown in Figure 2.1, Path B, I hypothesize that *mother and father's depressive symptoms will be associated with higher levels of economic hardship over time.*

### ***Economic Hardship and Depression on Relationship Distress***

Although the association between economic outcomes (i.e., hardships, employment status, income) and depressive symptoms are involved in a complex mutual reinforcing process, it is rather straightforward that the effects of both economic factors and depression symptoms have detrimental effects on the quality and stability of intimate partnerships (Donnellan et al. 2009; Edin and Kissane 2010; Kalmijn, Loeve, and Manting 2007). The general explanation suggests that financial difficulty and hardships place stress and strain on couples, which leads to conflict, lower levels of relationship quality, and divorce (Conger, Conger, and Martin 2010; White and Rogers 2000).

Several studies have shown that adverse financial circumstances are detrimental to the quality of intimate relationships. For example, Conger et al.'s (1990, 1999) earlier work shows that economic strain lowers marital quality and increases marital distress. More recent studies reveal that economic hardship is associated with higher levels of conflict for young married and cohabiting couples (Hardie and Lucas 2010). Relatedly, studies also demonstrate that economic factors such as unemployment, income, and neighborhood poverty are associated with violent interactions between partners (Benson et al. 2003; Cunradi et al. 2000; Cutrona et al. 2003; DeMaris et al. 2003; Fox and Chancey 1998; Fox et al. 2002). Research also shows that family debt affects marital satisfaction (Dew 2007, 2008), and some married couples tend to argue about money more often compared to other types of disagreements (Papp, Cummings, and Goeke-Morey 2009). These studies show that families' economic circumstances play a vital role in the quality and stability of intimate relationships. Thus, as shown in Figure 2.2, Path A, I hypothesize that *experiencing higher levels of economic hardship increases relationship distress among mothers and fathers.*

<INSERT FIGURE 2.2 HERE>

Depression or depressive symptoms are associated with declines in various relationship quality indices. This is largely due to the fact that depressed individuals are more likely to display behaviors of withdrawal and irritability, provide less support, and show anger toward their intimate partner, which ultimately creates distress between partners (Conger, Conger, and Martin 2010; Coyne 1976; Fiske and Peterson 1991). Depressive symptoms affect relationship outcomes in two ways: First, an individual's own depression leads to lower levels of relationship quality. Many of these studies have

been guided by Rand Conger's Family Stress Model. For example, two studies showed that both wife and husband emotional distress is significantly associated with higher levels of marital conflict (Conger et al. 2002, 1999). In a study of European and Mexican American families, Parke et al. (2004) found that mother and father depressive symptoms were linked to higher levels of marital problems. Additional studies show similar results indicating that wife and husband psychological distress is significantly associated with lower levels of marital adjustment (Kinnunen and Feldt 2004) and hostile marital interaction (Solantaus et al. 2004) for both spouses. These studies provide clear evidence that depressive symptoms can affect the quality of intimate relationships. Thus, as shown in Figure 2.2, Path B, I hypothesize that *both parent's depressive symptoms will be associated with higher levels of their own relationship distress (actor effect)*.

Second, studies also show that depressive symptoms in one partner can negatively affect how the other partner views the relationship—creating an emotional contagion or crossover effects within families (Hatfield, Cacioppo, and Rapson 1994; Larson and Almeida 1999b; Westman and Vinokur 1998). Emotional crossover is an inter-individual dyadic process where the mood or emotion of an individual leads to the similar mood of another individual (Larson and Almeida 1999b; Westman and Etzion 1995; Westman 2001). Mood transference from one person to another is much more apparent in intimate relationships because these individuals share a common space and life experience (Hatfield et al. 1994; Song, Foo, and Uy 2008). Thus, due to the interdependent nature of families, understanding mood transference of one partner to the other captures the dyadic, interdependent nature of intimate relationships; and, it shines light on the complicated

ways in which individuals experience the world and influence those they are closest to (Collins 2004).

Indeed, scholars have paid close attention to emotional contagion in dyadic relationships, and research shows that moods and emotions can be symmetric processes in couple dyads (Westman 2001). For example, in a study of 68 couples, one partner's depressed mood was related to the other partner feeling negative about the relationship (Thompson and Bolger 1999), and when husbands or wives report higher health symptom levels, partners display higher negative mood and lower positive mood (Yorgason, Almeida, and Neupert 2006). Among newlywed couples, (Neff and Karney 2007) found that when wives experienced higher levels of stress, husbands reported lower levels of marital satisfaction, but not vice versa. Other studies have generally supported the negative association between emotional distress and relationship quality (Proulx, Helms, and Buehler 2007; Pruchno, Wilson-Genderson, and Cartwright 2009; Du Rocher Schudlich, Papp, and Cummings 2011; Whisman and Uebelacker 2009). Because couples share and have so much invested together, taking a dyadic approach to understanding how mothers and fathers influence one another is critical for detailing the interdependent nature of family life (Cox and Paley 1997; Neff and Karney 2007; O'Brien 2005). Thus, I offer the following hypothesis: As shown in Figure 2.2, path (c), *mother's depressive symptoms will be associated with higher levels of relationship distress for fathers; and, father's depressive symptoms will be associated with higher levels of mother's relationship distress (cross-partner effect).*

### *Differences Between Families: Married and Cohabitors*

Nonmarital cohabitation has increased over time and, in some cases, provides intimate partners a transitional stage prior to marrying (Bumpass and Lu 2000; Kennedy and Bumpass 2008; Manning and Cohen 2012; Smock 2000). Recent estimates show that 48% of women cohabited as a first union in 2006-2010 compared to only 34% of women in 1995 (Copen et al. 2013). Cohabiting and marital relationships are often selective: that is, individuals with greater resources are more likely to marry and individuals with fewer resources are more likely to cohabit (Bumpass and Lu 2000; Smock 2000). As a result, cohabitators and married couples differ in several ways. For example, compared to married couples, cohabitators tend to have fewer financial resources, higher levels of psychological distress, and display lower levels relationship quality (Brown and Booth 1996b; Brown 2000; McLanahan and Percheski 2008; McLanahan 2009; Sassler 2010). These differences have broader implications for the ways in which economic factors and depressive symptoms affect individual and family outcomes.

Marital status may influence the association between economic hardship, depressive symptoms, and relationship distress; however, the hypothesized direction of the effects is equivocal. Although prior research has examined the association between economic hardship and depressive symptoms among couple dyads, these studies have focused largely on married couples (Conger, Conger, and Martin 2010). This is surprising given that cohabitators and married couples differ in terms of economic resources, mental health, and relationship quality and stability, and thus the effects may be stronger for cohabiting couples. Alternatively, these factors may affect married and cohabiting couples equally—resulting in no differences. A prior study addressing marital status

differences on the effects of hardship and relationship quality found no differences between married and cohabiting couples (Halliday Hardie and Lucas 2010). Moreover, in a study of cohabiting couples, Wu and Pollard (2000) found that economic factors affected relationship instability. A finding that is also consistent with married couples. Thus, although there may be mean-level differences between groups, potential differences in the effects are less clear. Given that the direction of the effects is equivocal, no specific hypothesis is offered.

### ***Differences Within Families: Mothers and Fathers***

Gendered behaviors and expectations are often enacted in intimate partnerships, and the home environment acts as fertile ground by which gender is produced and reproduced (Ridgeway 2011). As a consequence, mothers and fathers often develop gender-specific roles, and not being able to carry out those roles may lead to feelings of frustration. Thus, the ways in which heterosexual parents respond to specific stressors are often gendered. For example, the Western notion of masculinity often associates economic providing with men (Bernard 1981; Christiansen and Palkovitz 2001); therefore, experiencing economic hardship is likely to be more detrimental to fathers than mothers, affecting both their mental health and relationship outcomes (Christiansen and Palkovitz 2001).

Alternatively, because mothers are more likely to engage in child care responsibilities compared to fathers (Bianchi and Milkie 2010), economic hardship may hinder mothers to effectively carry out such obligations, thus leading to higher levels of psychological and relationship distress. Indeed, prior studies have shown that economic hardship is associated with elevated levels of depressive symptoms for both partners (Conger et al. 2002; Tucker et al. 2010; Wickrama et al. 2010). Only one study, however,

formally tested gendered differences and found no differences (Wickrama et al. 2010).

Thus, more work is needed to address potential gender differences in the longitudinal and reciprocal effects of economic hardship and depressive symptoms that includes more diverse longitudinal samples, variations in relationship status of the romantic couple, and during an important transition such as a child's birth.

In addition, epidemiological studies document that depressive symptoms are more prevalent among women than men (Elliott 2001; Kessler 2003); however, such disparity reflects a broad range of issues such as power differences in heterosexual relationships (Nolen-Hoeksema, Larson, and Grayson 1999), differences in stress exposure (Thoits 2010), and other forms of gendered beliefs and practices (Rosenfield and Mouzon 2013). These differences have implications for the well-being of individuals and families. For example, women often provide the emotion work for families (Erickson 2005; Hochschild 1979), and feel responsible for managing the overall quality of familial relationships (Vogel and Karney 2002). Thus, mothers and father's depressive symptoms may make relationships unmanageable for mothers and thus lead to distress between partners. In contrast, men are more likely to withdraw in interpersonal relationships with high depression levels (Davila et al. 2003; Heavey, Layne, and Christensen 1993); therefore, fathers may want to end the relationship as a response to his own and his partner's depressive symptoms. Thus, the actor and partner effects of depressive symptoms may be divergent between mothers and fathers. Alternatively, poor mental health among parents with a young child may become equally dire for the quality of the relationship—resulting in no differences between parents. Understanding how mothers and fathers respond to their own and their partner's depressive symptoms shines light on

the gendered processes in heterosexual couples, and also delineate the effects of each parent's depressive symptoms on relationship distress. Although the effects may differ between mothers and fathers, the direction of the association is less clear. Thus, this portion of the study is exploratory and no specific hypothesis is offered.

### ***Additional Factors***

In order to account for potential spuriousness, the analyses take into account additional variables that are linked to economic hardship, depressive symptoms, and relationship distress. Thus, the current study employs the following control variables: parental age and education is associated with economic hardship and depressive symptoms (Miech and Shanahan 2000; Mirowsky and Ross 2001, 2002), and relationship quality (Umberson et al. 2005). Racial/ethnic minorities are more likely to be economically disadvantaged (Lin and Harris 2008), African Americans tend to display lower levels of relationship quality (McLoyd et al. 2000) compared to whites, and Latinos and African Americans have lower rates of mental disorders in comparison to whites (Kessler 2005). Social support is related to economic, mental health, and relationship outcomes (Bradbury, Fincham, and Beach 2000; Thoits 2010; Umberson and Montez 2010). Fathers' incarceration history and domestic violence has adverse mental health, economic, and relationship consequences (Johnson and Ferraro 2000; Western, Lopoo, and McLanahan 2004). Parents' physical health is associated with both socioeconomic status and mental health (Gallo and Matthews 2003; Webb et al. 2008), and children's physical health is associated with parents' relationship quality (Reichman, Corman, and Noonan 2004). Studies are increasingly beginning to document the consequences of multipartnered fertility (i.e., having biological children with more than one partner). For example,



studies have documented that multipartnered fertility is associated with depression (Bronte-Tinkew, Horowitz, and Scott 2009; Turney and Carlson 2011) and parental relationships (Carlson and Furstenberg 2007; McLanahan 2009). The number of children parents have together is associated with both financial problems and depression (McLanahan and Adams 1987; Turney and Carlson 2011). Couples who experience a first birth are at an elevated risk for depression compared to couples who experience a higher-order birth (Mirowsky and Ross 2002). Poverty and employment status is associated with economic challenges, poor mental health, and relationship quality (Dooley et al. 2000; Iceland and Bauman 2007; McLanahan 2009; Thoits 2010). Accordingly, I include these control variables to adjust for spurious effects in the statistical analyses.

## **METHODS**

### *Data*

Data for this study are from the Fragile Families and Child Well-being Study (FFCW). The FFCW is a nationally representative, longitudinal study that follows an urban birth cohort of 4,898 children and their parents (3,712 unmarried and 1,186 married births) in 20 U.S. cities with populations of 200,000 or more. The study is based on a stratified, multistage probability sample with an oversample of unmarried births in urban cities. The study began 1998-2000 and contains 4,898 mothers and 3,830 fathers. At baseline, mothers were interviewed in person while in the hospital within 48 hours of the birth, and fathers were interviewed in person or by phone once he was located (for more detailed information, see (Reichman et al. 2001). Parents were re-interviewed when the child was one, three, and five years of age. The response rate for eligible mothers and fathers at

baseline was 86% and 78%, respectively. Subsequent 1-, 3-, and 5-year follow-ups yielded 90%, 88%, and 87% response rates for eligible mothers, and 74%, 72%, and 70% for eligible fathers (Wellbeing 2008).

The sample includes couples (biological mothers and fathers of the focal child) who were living together (either married or cohabiting) at the baseline survey and participated in the subsequent surveys and has no missing values on the focal variables. All survey waves are used; however, the main analyses are based on the follow-up waves because the focal variables (i.e., economic hardship and depressive symptoms) were measured at the 1-, 3-, and 5-year waves only. The selection criteria of the sample for the data analyses are parents who were either married or cohabiting from the 1-year to the 3-year surveys, and from the 3-year to the 5-year follow-up waves. This is done in order to maintain couples who were romantically involved consistently over all survey waves.

As a result of the selection criteria, of the couples living together at the 1-year follow-up ( $N = 2,341$ ), 347 cases were dropped (15%) from the sample because either the mother or father was not interviewed at the 3-year survey, 317 cases (14%) were dropped because the parents ended their relationship between the 1- and 3-year surveys, and 24 cases (1%) were dropped because information on depressive symptoms or economic hardship were missing. This resulted in a sample of 1,653 (71%). For these couples who were living together at the 3-year follow-up, 239 cases (14%) were dropped because either mother or father were not interviewed at the 5-year follow-up, 199 cases (12%) because the relationship ended between the 3- and 5-year waves, and 21 cases (1%) because of missing data on economic hardship and depressive symptoms. This

resulted in a sample of 1,218 (74%) couples who were romantically involved and consistently living together over the 1-, 3-, and 5-year follow-up waves.

Further, the analyses are separated by marital status at the time of the baby's birth (baseline). There were some couples who were not married at the baseline but became married by the 1-year follow-up ( $N = 129$ ). For these couples, they were included with the cohabiting couples because couples who marry after the birth of a child are more similar to cohabiting couple than married couples (McLanahan 2006). Taking this approach is in line with family policy agendas that are concerned about the relationship status of parents at the time of a child's birth. Notably, the substantive results do not change if couples who married subsequently after the birth of their child were included in the married sample.

In analyses of attrition, the excluded cases were more likely to be racial/ethnic minorities, somewhat younger, and had lower levels of education compared to parents who remain in the sample (see Tables 2.5 through 2.8). Comments about potential implications of attrition are in the Discussion section. To maximize sample size, multiple imputation technique was employed to impute missing data on the covariates, but not the focal endogenous variables for which Full Information Maximum Likelihood (FIML) was used (Acock 2005; Allison 2002; Enders and Bandalos 2001). Ten multiple imputation data sets were constructed using imputation by chained equations in Stata and then the analyses were conducted and combined using Rubin's rules (Rubin and Little 2002) in Mplus. City sampling weights are used for the descriptive statistics to adjust for oversampling of nonmarital births but not for the analyses because the study controls for

key characteristics associated with the weights (e.g., marital status at the birth of the child, age, race, and education; see (Winship and Radbill 1994).

### *Measures*

#### **Depressive Symptoms**

At each wave were assessed using the Composite International Diagnostic Interview-Short Form for Major Depression (CIDI-SF), which is a comprehensive, standardized instrument used to assess the presence of mental disorders as specified by the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R; American Psychiatric Association, 1994). Respondents were asked the following stem questions: (a) “During the past 12 months, has there ever been a time when you felt sad, blue, or depressed for two or more weeks in a row? (b) “During the past 12 months, has there ever been a time lasting two weeks or more when you lost interest in most things like hobbies, work, or activities that usually give you pleasure?”

Respondents who affirmed these questions were asked about the following symptoms: (1) “losing interest,” (2) “feeling tired,” (3) “changes in weight,” (4) “trouble sleeping,” (5) “trouble concentrating,” (6) “feeling down,” and (7) “thoughts about death.” Each symptom is a dichotomous variable with the value of 1 indicating the presence of a symptom. For mothers,  $\alpha$  reliability scores at the 1-, 3-, and 5-year follow-up waves were .90, .86, and .93, respectively. For fathers,  $\alpha$  reliability scores at the 1-, 3-, and 5-year follow-up waves were .82, .86, and .86, respectively. The items were summed creating a range from 0 to 8 symptoms. Previous studies using the FFCW study have assessed depressive symptoms for both mothers and fathers (Bronte-Tinkew et al. 2009; Heflin and Iceland 2009).

### **Economic Hardship**

At each wave economic hardship was measured by mothers responses to seven dichotomous indicators of whether they (1) “received free meals,” (2) “had trouble paying rent or mortgage,” (3) “had trouble paying gas/electric bill,” (4) “borrowed money from friends or family to pay bills,” (5) “been evicted,” (6) “moved in with relatives,” and (7) “someone needed a doctor but couldn’t go.” Reliability estimates across waves were .59, .62, and .62, respectively. The items were summed creating a range from 0 to 8 number of economic hardship. Despite the modest reliability, this measure is commonly used in national surveys (Beverly 2001). Since the items for depressive symptoms and economic hardship are dichotomous, Kuder-Richardson coefficient of reliability was calculated.

### **Relationship Distress**

At the 5-year survey both parents relationship distress ( mother’s  $\alpha = .84$ , father’s  $\alpha = .79$ ) was measured using three trichotomous items (1=never, 3=often) that asked mothers and fathers (1) “how often they thought their relationship might be in trouble,” (2) “discussed ending the relationship with their partner,” and (3) “talked to a close friend about a break-up.” The items were averaged, which indicates that higher scores reflect higher levels of relationship distress. As stated previously, prior studies employing similar items have focused on married couples and used the term marital distress (Booth et al. 1983; Conger et al. 1999). The current study, however, refers to these items as relationship distress because the sample consists of both married and cohabitating couples.

### **Control Variables**

Control variables were included in all statistical models (described above) that are expected to be associated with economic hardship, depressive symptoms, and relationship distress. Identical measures were used for both mothers and fathers. Each control variable is represented for both mothers and fathers at the baseline survey (unless otherwise specified). Mothers and fathers' *age* was measured (in years) as continuous variables. Mother's race was measured with the following dummy variables: *White* (reference), *Black*, *Hispanic*, and *other*. A separate dummy variable was included to represent parents who differed on race/ethnicity (i.e., mixed race couple). Mothers and fathers' *education* level was measured using four categories: (1) less than high school (reference), (2) high school or equivalent, (3) some college or tech training, and (4) college graduate or more. *Physical health* (measured at the 1-year follow-up for parents and child) was measured by asking parents the following question: "In general, how is your health?" Mothers reported child's health with responses ranging from (1) poor to (5) excellent. *Employment status* was measured with a dichotomous item indicating whether each parent "Did any regular work for pay last week?" Response were (0) no and (1) yes.

*Social support* was measured with a dichotomous question (0=no, 1=yes) asking both parents "since child was born, have you received any financial help or money from anyone other than [partner]?" Mothers reported on fathers' *incarceration history* (at the 1-year follow-up) indicating whether fathers have ever been in jail or prison (0=no, 1=yes). Mothers also reported on *domestic violence* (at the 1-year follow-up) indicating were she ever seriously hurt in fight with father (0=no, 1=yes). Mothers reported the number of children in the household at the 1-year follow-up. Parents' fertility history was gauged with two separated measures: First, a measured was created to indicate whether

the focal child is a higher order birth or first birth (0=first birth, 1=higher order birth). Second, a measured was created to indicate a series of dummy variables indicating *multipartnered fertility* (at 1-year follow-up) which reflects whether mothers and fathers reported having a child with another partner: neither parent has a child by another partner (reference), father has child by another partner only, mother has child by another partner only, and both parents has a child by another partner. Poverty status (at the 1-year follow-up) was measured using the household income-to-needs ratio based on the official U.S. poverty thresholds from the Census Bureau (adjusted for household composition and year). The variable was dichotomized to indicate that a ratio of 1 or less reflects a family lived in poverty, and a ratio above 1 reflects a family lived above the poverty line (, 0=no poverty, 1=poverity). *Marital status* was measured by a dichotomous variable with (0) indicating married (reference group) and (1) indicating cohabitation.

### ***Analytic Strategy***

Structural equation modeling (SEM; Bollen 1989) was employed using *Mplus* 6.11 (Muthen and Muthen 2010) to estimate the hypothesized paths in Figures 2.1 and 2.2. SEM is a useful statistical technique for handling dyadic data because it allows longitudinal and reciprocal paths between partners to be estimated over time (Kenny, Kashy, and Cook 2006). For the longitudinal and reciprocal effects of economic hardship and depressive symptoms (Figure 2.1), the model was estimated using Negative Binomial Regression with Maximum Likelihood Estimation with robust standard errors. This was done to take into account the over-dispersion of both economic hardship and depressive symptoms as count variables. The parameter estimates are exponentiated, and thus the

interpretation is as follows: a unit change in the independent variable is associated with a multiplicative change in the expected count in the dependent variable.

Second, for the relationship distress analysis (Figure 2.2), the model was estimated using standard regression with Full Information Maximum Likelihood (FIML) estimation technique. The analyses were executed using an Actor-Partner Interdependent Model (APIM; Kenny et al. 2006) with distinguishable dyads (i.e., mothers and fathers) to examine the direct effect of each parent's own depressive symptoms on their own relationship distress, and the effect of each parent's depressive symptoms on their partner's relationship distress. The variables are standardized, and thus reflect the following interpretation: a one standard deviation change in the independent variable is associated with a standard deviation change in the endogenous variable.

To address whether the effects differ between families (married and cohabiting) and within families (mothers and fathers), the longitudinal and cross-sectional models were both re-estimated by marital status using multi-group SEM. For the longitudinal model, the standard difference test (i.e., evaluating model fit by calculating an  $\chi^2$  difference between an unconstrained model with the paths estimated freely compared to a constrained model with the paths equal across groups) could not be achieved because models using Maximum Likelihood Estimation with robust standard errors with imputed data do not yield a correction factor, which makes  $\chi^2$  difference test impossible. Rather, to test differences between groups, the parameter estimates were tested using t-test parameter constraints. This allows the estimates for married mothers to be tested against the estimates for cohabiting mothers, and likewise for married and cohabiting fathers. To explore gender differences within families (mothers and fathers), the parameters were



constrained to test whether the effects are significantly different between mothers and fathers using t-tests of parameter constraints. The parameter for mothers is subtracted from the parameter for fathers (e.g.,  $b_{\text{(fathers)}} - b_{\text{(mothers)}}$ ) producing a new parameter (e.g.,  $b_{\text{(fathers-mothers)}}$ ). A standard error is estimated in *Mplus* for hypothesis testing.

## RESULTS

### *Descriptive Statistics*

Table 2.1 presents the mean, percentages, and standard deviations for the demographic characteristics for mothers and fathers by marital status (weighted using the city sampling weights). Married couples were slightly older, more likely to be non-Hispanic white, have higher levels of education, more likely to be employed, and less likely to be living in poverty. Cohabiters received more social support, cohabiting fathers were more likely to have been incarcerated, and cohabiting couples were more likely to have a child by another partner. All parents were in good health.

<Table 2.1 about here>

Table 2.2 shows the means for economic hardship, depressive symptoms, and relationship distress (weighted using city sampling weights), and significant differences by marital status evaluated using two-group mean comparison *t* tests to test differences between groups (e.g., married mothers versus cohabiting mothers, etc.), and two-sample (paired) mean comparison *t* tests to test differences within groups (e.g., married mothers versus married fathers). In regards to between families, the results show that, on average, cohabiting couples experience higher levels of economic hardship at the 1-, 3-, and 5-year surveys than married couples, and the means were statistically different at the Year-3 and Year-5 survey years.

In addition, cohabiting mothers had higher levels of depressive symptoms compared to married mothers, and the means were significantly different at the Year-1 and Year-3 survey waves. For fathers, cohabitators and marrieds displayed similar levels of depressive symptoms across survey years and there were no significant differences. Cohabiting mothers and fathers displayed higher levels of relationship distress compared to married mothers and fathers, respectively. Significant differences only emerged between married and cohabiting mothers in relationship distress.

In regards to differences within families, the two-sample (paired) mean comparison tests reveal that married mothers have significant higher levels of depressive symptoms at the Year-3 survey wave compared to married fathers. No differences emerged within cohabiting couples for depressive symptoms. For relationship distress, married and cohabiting mothers have significant higher mean levels compared to married and cohabiting fathers, respectively. No differences were present for married or cohabiting couples in regards to relationship distress.

<Tables 2.2 about here>

### ***Structural Equation Models***

#### ***All Couples***

The first research question was whether there was a significant longitudinal and reciprocal association between economic hardship and depressive symptoms for couples after the birth of a child. To address this question, the analyses were executed using Negative Binomial Regression to model the outcomes in a structural equation modeling framework. The results are shown in Table 2.3. For all couples, in respect to Years 1 to 3, the results for the *direct effects* show that as the number of hardships increase, depressive

symptoms for mothers increase by a factor of 1.27 (or increase by 27%;  $p < .01$ ). For Years 3 to 5, a similar effect was revealed, with depressive symptoms increasing by a factor of 1.21 ( $p < .01$ ). For fathers, in respect to Years 1 to 3, the results show that when the number of hardship increases, there is a 22% ( $p < .01$ ) increase in the count of depressive symptoms. For Years 3 to 5, the effects were not significant ( $\exp(b) = 1.04$ ,  $p > .10$ ). All in all, the findings support the stress-process perspective (*i.e.*, *direct effects*) for mothers, and give partial support for fathers.

The reciprocal pathways between depressive symptoms and economic hardship were also examined, and the results are presented in Table 2.3. For all couples, in respect to Years 1 to 3, the results for the *reciprocal effects* show that when the number of depressive symptoms increase, hardships increase by a factor of 1.09 ( $p < .01$ ). In respect to Years 3 to 5, the effects were not significant. For fathers, the reciprocal association between depressive symptoms and economic hardship did not yield significant results from Years 1 to 3 or Years 3 to 5. Although the results partially support the *reciprocal effects* for mothers, the results did not give support for the *reciprocal effects* for fathers. In other words, there is a small effect of maternal mental health on hardship shortly after the birth of a child. Overall, the longitudinal and reciprocal effects show that economic hardship affects both parents' mental health more so than vice versa.

The third research hypothesis suggests that economic hardship and depressive symptoms are both associated with lower levels of relationship distress for couples by their child fifth birthday. To test this hypothesis, I relied on cross-sectional data (Year-5 only) using an Actor-Partner Interdependent Model (APIM). As shown in Table 2.4, the findings show that for every standard deviation increase in economic hardship,

relationship distress increases by .20 standard deviations ( $p < .001$ ) for mothers, and increases .06 standard deviations ( $p < .05$ ) for fathers. There were significant *actor effects* for mothers and fathers: that is, mother's depressive symptoms was associated with a .06 standard deviation increase in her own report of relationship distress; for fathers, depressive symptoms were associated with a .10 standard deviations in his own report of relationship distress. There is also some evidence for *cross-partner effects*: for every standard deviation increase in father's depressive symptoms, mother's relationship distress increase by .05 standard deviations; the cross-partner association from mother's depressive symptoms to father's relationship distress was marginal statistical significant ( $b=.01, p < .10$ ). These findings support the research hypothesis that both economic hardship and depressive symptoms have a direct and significant association with relationship distress for mothers and fathers five years after the birth of a child. Moreover, although the effects are small, the findings give some support for the cross-partner association between one partner's depressive symptoms and the other partner's relationship distress. Simply put, both economic hardship and depressive symptoms are associated with dyadic partners' contemplating ending the relationship in the years following the birth of a child.

### ***Differences Between Families: Married and Cohabiting***

Next, Table 2.3 also presents the longitudinal and reciprocal effects for both married and cohabiting couples. For married mothers, when the number of hardships increase, depressive symptoms increase for Years 1 to 3 by a factor of 1.34 (or 34%,  $p < .01$ ); and, for Years 3 to 5 the count of depressive symptoms increase by a factor of 1.60 ( $p < .01$ ). For cohabiting mothers, the association between economic hardship and depressive

symptoms from Years 1 to 3 were statistically significant ( $\exp(b) = 1.30, p < .01$ ), and marginally significant for Years 3 to 5 ( $\exp(b) = 1.15, p < .10$ ). Differences emerged between married and cohabiting mothers in the effects from Years 3 to 5 only ( $t_{\text{diff}} = 2.11, p < .05$ ), indicating that the effects are stronger for married mothers than cohabiting mothers *as noted with subscript a*. For fathers, concerning Year-1 to Year-3, the effect of economic hardship on depressive symptoms were only significant for cohabitators ( $\exp(b) = 1.22, p < .05$ ); whereas for Years 3 to 5, the effects were only significant for married fathers ( $\exp(b) = 1.39, p < .05$ ). There were no significant differences between married and cohabiting fathers. In regards to the reciprocal effects for mothers, the number of depressive symptoms was associated with a increase in the count of economic hardship by 16% ( $p < .01$ ) for married mothers and 7% ( $p < .05$ ) for cohabiting mothers. The effects were not statistically different for mothers, however. The reciprocal effects were not significant for fathers, and no significant differences emerged between married and cohabiting fathers. All in all, the only differences that emerge were between married and cohabiting mothers in the association between hardship and depressive symptoms during the later years (i.e., Year-3 to Year-5).

Turning to the relationship distress model (Table 2.4), the effects of economic hardship and depressive symptoms on relationship distress were also examined separately by marital status. For married couples, economic hardship was significantly associated with higher levels of relationship distress for mothers ( $b=.25, p < .001$ ) and for fathers ( $b=.11, p < .05$ ). For cohabiting couples, economic hardship was associated with higher levels of relationship distress for mothers ( $b=.18, p < .001$ ) but not for fathers ( $b=.03, p > .10$ ). In regards to the actor effects, married mother's depressive symptoms were

associated with her own relationship distress ( $b=.09$ ,  $p < .05$ ), and married father's depressive symptoms were associated with his own relationship distress ( $.18$ ,  $p < .001$ ). Similarly, the effects were significant for cohabiting mothers ( $b=.19$ ,  $p < .001$ ) and fathers ( $b=.31$ ,  $p < .001$ ). In the end, the results demonstrate that economic hardship and each parent's own depressive symptoms were associated with relationship distress for married couples; for cohabiting couples, hardship and depressive symptoms were related to relationship distress for mothers, whereas only cohabiting fathers' own depressive symptoms mattered for relationship distress.

For the partner effects, married mother's depressive symptoms had a marginal association with father's relationship distress ( $b = .07$ ,  $p < .10$ ) but married father's depressive symptoms had no significant effect on married mother's relationship distress. For cohabiting couples, a standard deviation increase in father's depressive symptoms was associated with a .14 standard deviation ( $p < .001$ ) for mother's relationship distress; the partner effect from mother's depressive symptoms to father's relationship distress was not significant. The differences between married and cohabiting couples were examined by comparing the fit of an unconstrained model with a constrained model by calculating the difference in  $\chi^2$  which test whether the groups are significantly different. The  $\chi^2$  difference test was not statistically significant ( $p = .33$ ), thus indicating that the effects were not significantly different between married and cohabiting couples.

### ***Differences Within Families: Mothers and Fathers***

Last, differences between mothers and fathers were also tested. In regards to the longitudinal and reciprocal association between economic hardship and depressive symptoms, no gender differences emerged within married or cohabiting families. The

distress model results, however, revealed similar gender differences within married and cohabiting relationships (see Table 2.4). For example, there were differences between mother and fathers in the effect of hardship on relationship distress for married couples ( $t_{diff} = 4.16, p < .001$ ) as noted with superscript a, and cohabiting couples ( $t_{diff} = 3.37, p < .01$ ) with the effect stronger for fathers than mothers (see superscript b). Gender differences also emerged with the effect of mother's and father's depressive symptoms on father's relationship distress for married couples ( $t_{diff} = -2.12, p < .05$ ) as noted with superscript c, and cohabiting couples ( $t_{diff} = -5.00, p < .001$ ) noted with superscript d, with the effects stronger for mother's depressive symptom than father's depressive symptoms. In summary, the direct effect of economic hardship on relationship distress was stronger for fathers than mothers; and, mother's depressive symptoms on father's relationship distress (partner effect) were stronger than father's own depressive symptoms (actor effects).

## **DISCUSSION**

The purpose of the present study was (1) to examine the longitudinal and reciprocal effects of economic hardship and depressive symptoms for couples 1-, 3-, and 5-years after the birth of a child; (2) to examine whether economic hardship and depressive symptoms lead to higher levels of relationship distress for couples by their child's fifth birthday; (3) to test whether the effects vary between families (married and cohabitators), and (4) within families (mothers and fathers). Using data from a diverse nationally representative sample of urban couples after the birth of a child, the current study reveals how inequality, health, and relationship quality unfold and are associated over time for families, and the potential implications for children's well-being.

The longitudinal and reciprocal effects of economic hardship and depressive symptoms show support for direct effects (for both parents) and significant reciprocal effects for mothers only. More specifically, the findings are consistent with the *stress process perspective* for parents with a young child, which corroborate previous research that examined the association between economic hardship and depressive symptoms (Barnett 2008; Conger, Conger, and Martin 2010). The consistent positive and significant effects for mothers reflects the added stress and strain that financial hard times place on families (Conger 2010; Edin and Kissane 2010). These findings are particularly important during a child's early developmental stages (i.e., infant, toddler, and preschool) as children of depressed mothers tend to experience a host of adverse outcomes (e.g., Ramchandani et al. 2008).

Because mothers are much more likely to engage in early childcare activities than fathers (Bianchi and Milkie 2010), not having adequate resources to carry out such obligations put mothers at risk for lower levels of psychological well-being. For fathers, however, the effects are only significant from Years 1 to 3. The short-lived significant effects may be due, in part, to the different ways fathers manifest economic stress, especially as hardships continue over time. For example, men tend to respond to stress with negative interpersonal behavior (i.e., conflict, etc.). In fact, prior studies using the Fragile Families' data show that economic hardship leads to higher levels of discord for fathers (Paat 2011; Williams, Cheadle, and Goosby 2013).

In addition, the findings give some support for the reciprocal effects, but the findings were only significant for mothers from Years 1 to 3. These results suggest that higher levels of depressive symptoms 1-year after a child's birth may decrease mothers'



financial contributions to the household which, in turn, leads to higher levels of economic hardship. Given the prevalence of depressive symptoms for mothers after a child's birth (Umberson et al. 2010), the significant findings from Years 1 to 3 is not surprising, although the non-significant results from Years 3 to 5 are somewhat surprising. This may indicate that the effects of mother's depressive symptoms are less damaging to the family's economic well-being over time. For fathers, no reciprocal effects between depressive symptoms and economic hardship emerge at either survey years. This may be indicative of the lower levels of father's depressive symptomology. Overall, the results show that the effects of hardship on depressive symptoms may be more damaging to parents' mental health than parents' mental health affecting economic hardship.

In the analysis for relationship distress, the results give support for family stress theories. More specifically, economic hardship had a significant direct effect on relationship distress for mothers and fathers five years after the birth of a child. Given that the sample in this study includes both cohabiting and married mothers, these findings are consistent with other studies showing that economic hardship plays a major role in marital distress (Gudmunson et al. 2007) and a family's finances play a more critical role for unmarried, low-income couples than married higher income couples (Gibson-Davis, Edin, and McLanahan 2005). Moreover, the findings also indicate that mothers' and fathers' depressive symptoms are associated with higher levels of relationship distress, which points to the importance of mental health and the quality of intimate relationships for sustaining romantic partnerships. Thus, similar to previous research, this study shows that depressive symptoms affect the quality of intimate partnerships for both parents (Conger, Conger, and Martin 2010; Kouros and Cummings 2011), while also elaborating

on these prior findings by showing that mental health is a strong antecedent that affects relationship stability five years after the birth of a child—which is a critical time for both couple’s stability (Cherlin 2009b, 2010b) and child development (Cheadle 2008). Thus, these results have broader implications not only for couples but also children’s well-being (McLanahan 2004b).

Family scholars also suggest that one partner’s mood can lead to how the other partner evaluates the overall quality of the relationship (i.e., *emotional crossover*). In the current study, the results are consistent with previous studies highlighting emotional crossover in couple dyads (Thompson and Bolger 1999; Yorgason et al. 2006). The findings show that each parent’s depressive symptoms are associated with their partner’s relationship distress—though the effects are marginally significant for mother’s depressive symptoms and father’s relationship distress. The overall conclusion is that dyadic outcomes such as parents’ relationship distress are not only sensitive to family inequality (i.e., economic hardship) but also interpersonal stressors (i.e., partner’s depressive symptoms). These findings corroborates Milkie's (2010) argument that incorporating the stress process and family stress theories can be fruitful in understanding how stress affects both individuals and families. Although relationship distress can further exacerbate depressive symptoms within couples, the current study is unable to determine if this is the case due to data limitations. Nevertheless, these findings are especially important in light of family policies that promote marriage through strengthening relationships.

With respect to differences between married and cohabiting couples, the findings show that the longitudinal and reciprocal effects of economic hardship and depressive

symptoms were similar for both family types. The only significant difference emerges over Years 3 to 5 for mothers: that is, the effect of hardship on depressive symptoms was stronger for married mothers than cohabiting mothers. This suggests that hardship is more detrimental for married mothers' mental health, which may be largely due to the expectations that marriage provides financial security (Waller and McLanahan 2005). Thus, experiencing financial difficulty may contradict their expectations, and subsequently lead to psychological distress. Moreover, the relationship distress results yield no significant differences between married and cohabiting couples. These findings are surprising given the differences between married and cohabiting couples in terms of economic, psychological, and relationship well-being (Smock 2000). In the current study, married couples, compared to cohabiting couples, have fewer hardships, depressive symptoms, and lower levels of relationship distress. Yet, the longitudinal and cross-sectional results yield no significant differences between groups. Similar findings from a study comparing the effects of economic hardship and relationship quality between married and cohabitators found no differences (Hardie and Lucas 2010). Overall, the findings suggest that although differences emerge between married and cohabiting couples at the mean level, both family forms, after a recent birth, are vulnerable to economic and psychological adversity.

Turning to differences within families (mothers and fathers), the longitudinal results reveal no differences between mothers and fathers among couples in married or cohabiting relationships. In the analysis for relationship distress, however, differences did emerge; and, the differences are similar for mothers and fathers in both married and cohabiting families. For example, the effect of economic hardship on parents'

relationship distress was significantly different between mothers and fathers for both married and cohabiting families, with the effects stronger for fathers than mothers. Also, there were significant differences between mother's depressive symptoms and father's depressive symptoms on father's relationship distress, with the effects stronger for mothers than fathers. These differences between mothers and fathers map onto gender perspectives in families—at least for fathers. That is, hardship infringes on the provider role (Christiansen and Palkovitz 2001), and mother's mental health may lead fathers to withdraw (Davila et al. 2003) in interpersonal relationships, thus creating distress between parents.

### ***Implications***

In terms of implications for research, the results help to shine light on the need for additional studies to take a more integrated theoretical approach to capture broader individual and family processes. Indeed, scholars have consistently argued for this approach (Milkie, Bierman, and Schieman 2008; Milkie 2010). In addition, the dyadic findings highlight the importance of families as a system (Cox and Paley 1997), and is consistent with the notion of “linked lives” in life course research, which suggest that the lives of family members are interdependent (Elder, Johnson, and Crosnoe 2003). An important topic for future research is to examine the association between hardship, mental health, and relationship distress over longer periods of time, and whether these factors affect child outcomes, especially as children become young adults. In addition, this line of research could move forward by addressing other factors that may moderate the association of the key variables in the study, including race/ethnicity, education

levels, and the number of children—as these factors (and others) may exacerbate economic hardship, depressive symptoms, and relationship distress.

These findings are also important in light of family policies that are designed to promote healthy marriage and other partnerships through strengthening relationships. The results provide some evidence that policies should not only focus on building relationship skills but also ameliorating structural conditions (i.e., economic hardship) and psychological distress. This is critical given the rise in poverty and unemployment, and the decrease in household income from 2009 to 2010 (DeNavas-Walt, Proctor, and Smith 2011). Thus, policy efforts that are designed to strengthen couples' relationships should also work in tandem with policies that target the economy, family economic circumstances, and mental health services.

### ***Limitations***

Although this study demonstrates that economic hardship and depressive symptoms affect individuals and families, some limitations must be noted that may hinder the generalizability of the results. First, the results for the current study can only be generalized to parents who had a child in the late 1990s while living in urban cities with a population of 200,000 or more. Thus, inferences cannot be made to populations outside the scope of the initial research design (e.g., parents in rural areas, or childless parents). Second, as with many studies, there is potential for missing variable bias. Even in longitudinal studies, it is difficult to take into account changes that may have occurred between surveys. To help reduce missing variable bias, control variables were added to the statistical models that were theoretically meaningful that might affect the endogenous variables in the study (see Tables 2.9 through 2.12). Last, couples who ended their

relationship between waves tend to experience higher levels of depressive symptoms and economic hardship. Thus, the estimates may be downwardly biased. This issue, however, may be most pertinent for cohabiting couples as most married couples stayed together over time.

### ***Strengths***

Despite the limitations, the results in the current study extend research on the links between economic hardship, depressive symptoms, and relationship distress in several ways. First, prior research has focused largely on small, cross-sectional samples; however, recent research is beginning to use longitudinal data (Wickrama et al. 2010, 2012)—albeit with homogenous samples (i.e., predominately white, middle-aged, married couples). Here, however, the current study used a diverse sample of couples and examined economic hardship and depressive symptoms as a dynamic and dyadic process. In doing so, the current study leveraged data from both partners rather than being limited to only one (usually the mother). The second extension is a focus on married and cohabiting heterosexual couples. This allows for the examination of between and within family processes. Given the unequal distribution of resources between families and the differential stress exposure between parents, the current approach paints a more holistic picture about inequality, stress, and well-being in couple dyads than can be found in most traditional studies that focus only one partner (usually the mother).

Third, one strength of the FFCW study is that it follows a cohort of recent births and their parents across critical developmental stages for children—infant, toddler, and preschool. Thus, understanding how families fare under dire economic conditions is particularly important because of the detrimental effects these factors have on children's

well-being (Amato and Cheadle 2008; Zilanawala and Pilkauskas 2012), and parent depression affects other family processes such as parenting (Paulson, Dauber, and Leiferman 2006). Fourth, the current study addresses whether familial and individual stressors affect a dyadic outcome such as relationship distress five years after the birth of a child. This is particularly important as many couples are at risk for dissolution by the child's fifth birthday (Cherlin 2010b), and parent's dissolution can be transferred intergenerational by creating further inequality for their children (Amato and Cheadle 2005). Thus, the aforementioned stressors are not only detrimental to couples, but also can extend beyond the couple dyad by "spilling over" to children.

## **CONCLUSION**

In conclusion, the current study focused on urban parents who had a child in the late 1990s to underscore how inequality, mental health, and relationship distress unfold within couple dyads. This research focused on parents with young children because the birth of a child is a stressful time economically (Demo and Cox 2000) and it can put strain on parent's health and intimate relationships (Umberson et al. 2005). Thus, the results in the present study is particularly valuable because the early childhood years set the stage for children's successful academic (Cheadle 2008) and behavioral development (Bradley et al. 2001), and long-term educational attainment outcomes (Cheadle and Goosby 2010). Notably, healthy parents (Ramchandani et al. 2008) and healthy relationships between parents (Amato 2010) support these processes. Using both longitudinal and cross-sectional data, the current study presents evidence that economic hardship affects mothers and father's mental health, with more enduring negative effects for mothers than fathers. Moreover, hardship and mental health creates distress between

intimate partners, whereby both parents are contemplating to end the relationship. Taken together, the results highlight the significance of examining changes in mental health as a function of economic hard times; and, the extent to which family-level and interpersonal-level stressors affect couple dyads.



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## APPENDIX A

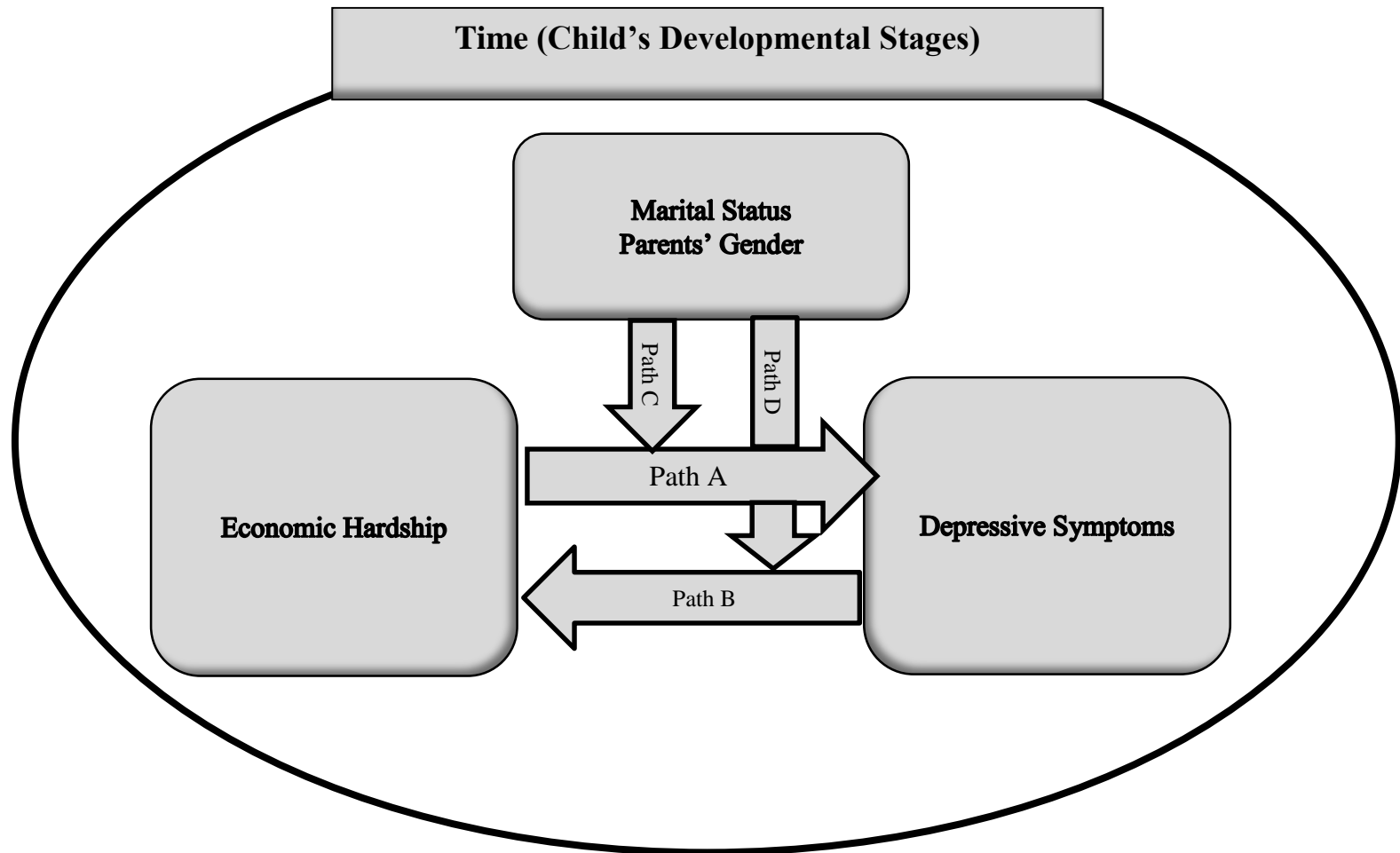
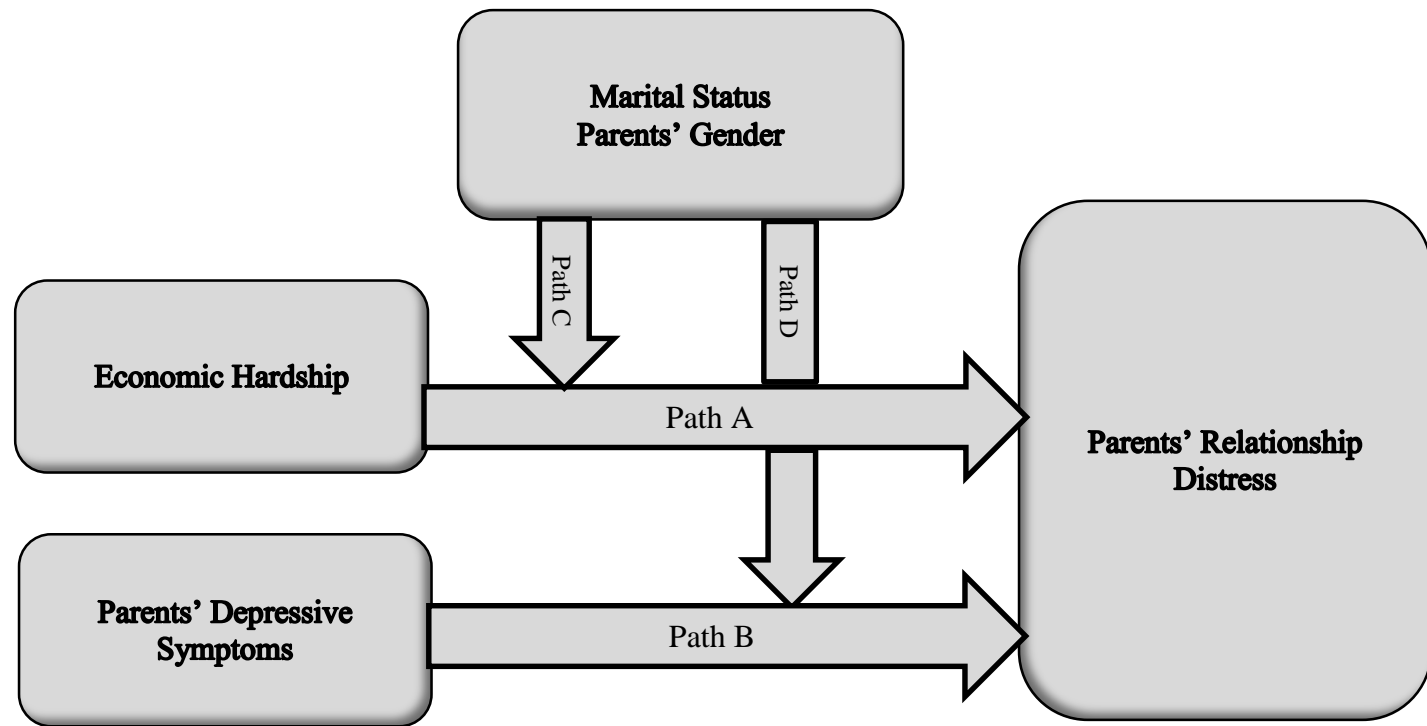


Figure 2.1: Conceptual Model for the Longitudinal and Reciprocal Effects of Economic Hardship and Depressive Symptoms among Couples



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Figure 2.2: Conceptual Model Linking Economic Hardship, Parents' Depressive Symptoms, and Parents' Relationship Distress

Table 2.1: Sample Statistics (Means, Percentages, and Standard Deviations) among Couples, by Marital Status

	All Couples		Married Couples		Cohabiting Couples	
	Mean or %	SD	Mean or %	SD	Mean or %	SD
Family Structure						
Married	72.61					
Cohabiting	27.39					
Age at child's birth						
Mother	28.66	5.66	29.89	5.11	25.38	5.75
Father	31.01	6.38	32.02	5.91	28.33	6.80
Mother's race/ethnicity						
White non-Hispanic	42.70		53.30		14.50	
Black non-Hispanic	19.16		11.30		40.00	
Hispanic	30.12		25.70		41.90	
Other non-Hispanic	8.03		9.68		3.62	
Parents are a different race/ethnicity	11.71		12.30		10.20	
Mother's Education						
Less than High School	19.10		14.40		31.60	
High school diploma or equivalent	27.30		20.20		46.20	
Some college	19.55		19.10		20.70	
Bachelor's degree or higher	34.04		46.30		1.43	
Father's Education						
Less than High School	20.24		14.30		36.00	
High school diploma or equivalent	20.22		15.30		33.10	
Some college	26.10		26.60		24.70	
Bachelor's degree or higher	33.44		43.70		6.21	
Health Status (1-Year)						
Mother's Health	4.04	0.88	4.16	0.82	3.70	0.95
Father's Health	4.05	0.92	4.10	0.89	3.91	0.98
Child Health	4.59	0.68	4.64	0.62	4.47	0.82
Employment Status (Year 1)						
Mother has job = 1	55.95		57.40		52.00	
Father has job = 1	90.28		95.10		77.50	
Social Support (Year 1)						
Mother received support	23.81		21.10		31.10	
Father received support	29.10		27.10		34.50	
Incarceration History (1-Year)						
Father	9.33		4.66		21.90	
Domestic Violent						
Father	3.23		3.06		3.69	
Number of children in home < 18 years old	1.01	1.26	1.01	1.25	1.01	1.28

Table 2.1 continues on next page

Table 2.1: Sample Statistics (Means, Percentages, and Standard Deviations) among Couples, by Marital Status

	All Couples		Married Couples		Cohabiting Couples	
	Mean or %	SD	Mean or %	SD	Mean or %	SD
<b>Fertility History</b>						
Couple Higher Order Birth (Yes= 1)	50.98		54.50		41.70	
<b>Multipartnered Fertility</b>						
Neither parent has a child by another partner	73.15		83.2		46.20	
Father has a child by another partner	9.73		7.21		16.50	
Mother has a child by another partner	11.08		6.77		22.60	
Both parents have a child by another partner	6.04		2.77		14.80	
Below poverty line = 1 (1-Year)	26.01		18.50		46.00	
N (Unweighted)	1218		631		587	

Note: Variables are from the baseline and 1-Year survey. All means are weighted using city sampling weights. Numbers of cases are unweighted.

Table 2.2: Weighted Means for Economic Hardship, Depressive Symptoms, and Relationship Distress, by Marital Status

	All Couples		Married Couples		Cohabiting Couples		Mean Difference
	Mean	SD	Mean	SD	Mean	SD	
<b>Economic Hardship (Mother Reports)</b>							
Year 1	0.60	1.10	0.51	1.08	0.86	1.10	-0.35
Year 3	0.52	0.96	0.39	0.80	0.85	1.24	-0.46 **
Year 5	0.54	1.08	0.41	0.94	0.90	1.33	-0.49 *
<b>Depressive Symptoms (Mothers)</b>							
Year 1	0.38	1.23	0.26	1.00	0.72	1.65	-0.46 *
Year 3	0.53	1.38	0.44	1.26	0.79 <sup>a</sup>	1.64	-0.35 *
Year 5	0.42	1.27	0.41	1.23	0.46	1.35	-0.05
<b>Depressive Symptoms (Fathers)</b>							
Year 1	0.41	1.21	0.38	1.14	0.49	1.37	-0.11
Year 3	0.53	1.43	0.58	1.49	0.38 <sup>a</sup>	1.23	0.20
Year 5	0.34	1.15	0.34	1.09	0.36	1.28	-0.03
<b>Relationship Distress</b>							
Year 5 (Mothers)	1.31	0.50	1.24	0.45	1.48	0.59	-0.24 **
Year 5 (Fathers)	1.21	0.39	1.16	0.36	1.32	0.44	-0.16

Note: All means are weighted using city sampling weights. Mean differences by marital status are tested using two-tailed *t* tests. Two-sample *t* tests were used to test differences within families, and means with identical superscripts denote differences between mothers and fathers.

\*\*\**p* < .001; \*\**p* < .01; \**p* < .05; †*p* < .10

Table 2.3: Exponentiated Beta Coefficients for the Longitudinal and Reciprocal Effects on Economic Hardship and Depressive Symptoms, by Martial Status

	All Couples				Married Couples				Cohabiting Couples			
	Mother		Father		Mother		Father		Mother		Father	
	exp(b)	t	exp(b)	t	exp(b)	t	exp(b)	t	exp(b)	se	exp(b)	t
<i>Direct Effect</i>												
Econ Hardship 1 -> Dep. Symptoms 3	1.27**	3.42	1.22**	2.60	1.34**	2.61	1.11	0.76	1.30**	2.91	1.22*	2.19
Econ Hardship 3 -> Dep. Symptoms 5	1.21**	2.60	1.04	0.52	1.60*** <sup>a</sup>	3.39	1.39*	1.99	1.15† <sup>a</sup>	1.90	1.00	0.05
<i>Reciprocal Effect</i>												
Dep Symptoms 1 -> Econ Hardship 3	1.09**	3.15	1.00	0.03	1.16**	2.69	1.05	0.79	1.07*	1.10	0.98	-0.43
Dep Symptoms 3 -> Econ Hardship 5	0.99	-0.10	1.02	0.67	1.02	0.36	1.06	1.13	0.97	-0.88	1.00	0.04

Note: Parameter estimates with identical superscripts denote statistical differences. Dep = Depressive Symptoms  
 \*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 2.4: Standardized Regression Coefficients for the Effects of Economic Hardship and Depressive Symptoms on Relationship Distress

	All Couples					Married Couples				Cohabiting Couples			
	Mother		Father		Mother		Father		Mother		Father		
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	
Economic Hardship (5-Yr)	0.20***	0.03	0.06*	0.03	0.25*** <sup>a</sup>	0.04	0.11*** <sup>a</sup>	0.04	0.18*** <sup>b</sup>	0.04	0.03 <sup>b</sup>	0.04	
<b>Actor Effects</b>													
Depressive Symptoms (5-Yr)	0.16***	0.03	0.26***	0.03	0.09*	0.04	0.18*** <sup>c</sup>	0.04	0.19***	0.04	0.31*** <sup>d</sup>	0.04	
<b>Partner Effects</b>													
Depressive Symptoms (5-Yr)	0.11*	0.03	0.05†	0.03	0.06	0.04	0.07† <sup>c</sup>	0.041	0.14***	0.04	0.03 <sup>d</sup>	0.04	
<b>Model Fit:</b>													
	x <sup>2</sup>	df	CFI	RMSEA	SRMR		x <sup>2</sup>	df	CFI	RMSEA	SRMR		
	7.78	22.00	1.00	0.000	0.005		5.61	44.00	1.00	0.000	0.007		
							<b>x<sup>2</sup> difference test:</b>	7.82	6.00		p = 0.33		

Note: Parameter estimates with identical superscripts denote statistical differences.  
 \*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 2.5: Attrition for Mothers and Fathers Between Years 1 - 3

Variables	Mothers		Fathers	
	exp(b)	t	exp(b)	t
Depressive Symptoms	1.06	0.99	1.01	0.17
Economic Hardship	0.89	-1.42	0.97	-0.44
Marital Status				
Married (reference)				
Cohabiting	1.21	0.88	1.94**	3.19
Parent's Age	1.01	0.88	1.00	-0.42
Race/Ethnicity				
Non-Hispanic White (reference)				
Non-Hispanic Black	1.22	0.79	0.82	-0.84
Hispanic	1.83*	2.39	1.45	1.62
Other	1.68	1.19	0.72	-0.66
Parent's Education				
Less than H.S. (reference)				
High School Diploma	0.90	-0.48	0.80	-1.16
Some College	0.85	-0.67	0.66+	-1.77
Bachelor's Degree or higher	0.57	-1.56	0.64	-1.30

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 2.6: Attrition for Mothers and Fathers Between Years 3 - 5

Variables	Mothers		Fathers	
	exp(b)	t	exp(b)	t
Depressive Symptoms	1.00	0.07	0.89	-1.62
Economic Hardship	0.88	-1.34	1.01	0.14
Marital Status				
Married (reference)				
Cohabiting	1.20	0.83	1.11	0.50
Parent's Age	1.02	0.90	0.98	-1.19
Race/Ethnicity				
Non-Hispanic White (reference)				
Non-Hispanic Black	0.88	-0.51	1.12	0.46
Hispanic	1.38	1.29	1.01	0.04
Other	1.89†	1.68	0.87	-0.26
Parent's Education				
Less than H.S. (reference)				
High School Diploma	0.67	-1.62	1.40	1.59
Some College	1.00	-0.01	0.56*	-2.06
Bachelor's Degree or higher	0.68	-1.18	0.58	-1.49

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 2.7: Relationship Dissolution Between Years 1 - 3

Variables	Mothers		Fathers	
	exp(b)	t	exp(b)	t
Depressive Symptoms	1.04	1.01	1.09+	1.78
Economic Hardship	1.207***	3.52	1.19***	3.39
Marital Status				
Married (reference)				
Cohabiting	2.693***	5.17	2.69***	5.26
Parent's Age	0.940***	-4.44	0.97**	-2.96
Race/Ethnicity				
Non-Hispanic White (reference)				
Non-Hispanic Black	1.779***	3.37	1.86**	3.28
Hispanic	0.524**	-3.05	0.67+	-1.78
Other	1.01	0.03	1.87+	1.81
Parent's Education				
Less than H.S. (reference)				
High School Diploma	1.14	0.80	1.27	1.27
Some College	1.08	0.43	0.77	0.77
Bachelor's Degree or higher	0.503+	-1.93	0.33**	-2.85

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 2.8: Relationship Dissolution Between Years 3 - 5

Variables	Mothers		Fathers	
	exp(b)	t	exp(b)	t
Depressive Symptoms	1.02	0.49	1.12*	2.45
Economic Hardship	1.14*	2.25	1.11+	1.75
Marital Status				
Married (reference)				
Cohabiting	3.27***	6.00	3.10***	5.80
Parent's Age	0.98+	-1.70	0.98*	-2.04
Race/Ethnicity				
Non-Hispanic White (reference)				
Non-Hispanic Black	1.60*	2.57	2.03***	3.44
Hispanic	0.77	-1.25	1.16	0.66
Other	1.13	0.31	0.66	-0.76
Parent's Education				
Less than H.S. (reference)				
High School Diploma	0.90	-0.65	1.10	0.54
Some College	0.73+	-1.65	0.89	-0.57
Bachelor's Degree or higher	0.58+	-1.76	0.80	-0.71

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10



Table 2.9: Control Variables on the Longitudinal and Reciprocal Effects

Control Variables	Econ. Hardship (3-Year)		Econ. Hardship (5-Year)		Dep. Sym. (3-Year)				Dep. Sym. (5-Year)			
	Mother Report		Mother Report		Mothers		Fathers		Mothers		Fathers	
	b	se	b	se	b	se	b	se	b	se	b	se
Dep. Sym (Lagged)					0.37***	-0.97	0.428***	0.05	0.32***	0.04	0.497***	0.05
Econ. Hardship (Lagged)	0.416***	0.04	0.48	0.037***								
Family Structure												
Married (reference)												
Cohabiting	0.24*	0.12	0.251*	0.12	0.12	0.20			0.34	0.25	0.33	0.27
Age at child's birth												
Mothers	-0.02†	0.01	-0.01	0.01	0.00	0.02			0.00	0.02		
Fathers	-0.01	0.01	0.01	0.01			-0.04*	0.02			0.03	0.02
Mother's race/ethnicity												
White non-Hispanic (reference)												
Black non-Hispanic	-0.11	0.12	0.09	0.12	-0.02	0.20	-0.38†	0.22	-0.44†	0.24	0.06	0.27
Hispanic	-0.16	0.13	-0.17	0.14	-0.29	0.23	0.00	0.23	-0.31	0.26	0.19	0.31
Other non-Hispanic	-0.01	0.24	0.23	0.25	-0.41	0.56	-0.12	0.44	-0.82†	0.48	-1.087†	0.60
Parents are a different race/ethnicity	0.12	0.14	0.09	0.13	0.31	0.25	0.01	0.24	0.33	0.31	0.45	0.35
Mother's Education												
Less than High School (reference)												
High school diploma or equivalent	0.20	0.13	0.246†	-0.86	0.09	0.23			0.62*	0.26		
Some college	0.50***	0.14	0.21	0.16	0.25	0.24			0.64*	0.26		
Bachelor's degree or higher	0.12	0.20	-0.10	0.25	-0.20	0.32			0.76*	0.34		
Father's Education												
Less than High School (reference)												
High school diploma or equivalent	0.23†	0.13	-0.11	0.13			0.26	0.22			-0.19	0.27
Some college	0.10	0.14	-0.07	0.15			-0.27	0.25			-0.27	0.35
Bachelor's degree or higher	-0.54*	0.23	-0.618*	0.27			-0.26	0.35			-0.02	0.43
Health Status (1-Year)												
Mother's Health	-0.11*	0.05	-0.10†	0.05	-0.07	0.09			-0.15	0.10		
Father's Health	0.00	0.06	-0.02	0.06			-0.10	0.09			-0.343**	0.10
Child Health	-0.07	0.06	0.04	0.07	-0.27**	0.11	0.05	0.12	-0.27*	0.13	-0.21	0.14
Employment Status (Year 1)												
Mother has job = 1	-0.10	0.10	-0.16	0.10	-0.26†	0.16			-0.40*	0.19		
Father has job = 1	0.01	0.12	-0.06	0.12			-0.59*	1.23			-0.434†	0.26
Social Support (Year 1)												
Mother received support	0.34**	0.10	0.244*	0.10	0.32†	0.17			0.66**	0.19		
Father received support	0.21*	0.10	0.15	0.10			0.09	0.20			0.30	0.21
Incarceration History (1-Year)												
Father	0.28*	0.11	0.02	0.12	-0.13	0.20	0.33	0.22	0.36	0.23	0.502†	0.26
Domestic Violent												
Father	-0.61**	0.21	-0.03	0.20	-0.02	0.42	-0.35	0.46	0.47	0.52	-1.07	0.66
Number of children in home < 18 years old	0.15***	0.04	-0.02	0.05	-0.14†	0.07	0.17†	0.09	0.12	0.08	0.04	0.09
Fertility History												
Couple Higher Order Birth (Yes= 1)	-0.01	0.11	0.07	0.11	0.36†	0.19	0.61**	0.21	0.00	0.22	0.03	0.25
Multipartnered Fertility												
Neither parent has a child by another partner (reference)												
Father has a child by another partner	0.17	0.14	0.06	0.14	0.41†	0.22	0.35	0.26	0.34	0.27	0.10	0.29
Mother has a child by another partner	-0.08	0.14	0.00	0.15	0.17	0.24	-0.08	0.24	-0.41	0.25	-0.45	0.32
Both parents have a child by another partner	0.17	0.17	0.10	0.16	0.44†	0.25	0.11	0.32	-0.09	0.33	0.36	0.37
Below poverty line = 1 (1-Year)	0.04	0.11	0.04	0.12	0.03	0.20	-0.46*	0.19	-0.15	0.23	-0.03	0.24

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 2.10: Control Variables for the Longitudinal and Reciprocal Effects (Marrieds Only)

Control Variables	Econ. Hardship (3-Year)		Econ. Hardship (5-Year)		Dep. Sym. (3-Year)				Dep. Sym. (5-Year)			
	Mother Report		Mother Report		Mothers		Fathers		Mothers		Fathers	
	b	se	b	se	b	se	b	se	b	se	b	se
Dep. Sym (Lagged)					0.445***	0.06	0.508***	0.09	0.329***	0.07	0.486***	0.08
Econ. Hardship (Lagged)	0.472***	0.06	0.693***	0.08								
Age at child's birth												
Mothers	-0.01	0.02	-0.01	0.02	0.03	0.02			0.048†	0.03		
Fathers	-0.03	0.02	-0.01	0.02			-0.076*	0.03			0.082*	0.03
Mother's race/ethnicity												
White non-Hispanic (reference)												
Black non-Hispanic	0.13	0.19	0.17	0.23	-0.04	0.30	-0.15	0.32	-0.762†	0.41	-0.36	0.37
Hispanic	-0.15	0.22	-0.04	0.22	-0.40	0.45	-0.09	0.35	0.06	0.41	-0.21	0.41
Other non-Hispanic	0.07	0.30	0.21	0.37	-0.27	0.61	-0.31	0.50	-0.90	0.56	-1.599*	0.68
Parents are a different race/ethnicity	0.18	0.20	0.12	0.23	-0.20	0.48	-0.20	0.37	0.81	0.45	0.822†	0.44
Mother's Education												
Less than High School (reference)												
High school diploma or equivalent	0.15	0.28	0.43	0.32	0.14	0.51			0.67	0.46		
Some college	0.837**	0.30	-0.02	0.34	0.15	0.51			0.52	0.46		
Bachelor's degree or higher	0.601†	0.32	-0.08	0.39	-0.24	0.52			0.19	0.45		
Father's Education												
Less than High School (reference)												
High school diploma or equivalent	0.45	0.28	-0.536†	0.29			0.54	0.41			0.28	0.57
Some college	0.03	0.28	-0.706*	0.28			-0.39	0.42			0.24	0.59
Bachelor's degree or higher	-0.51	0.34	-1.319***	0.34			0.15	0.49			0.59	0.60
Health Status (1-Year)												
Mother's Health	-0.266**	0.10	-0.184†	0.10	-0.18	0.15			-0.22	0.18		
Father's Health	-0.11	0.10	0.07	0.10			-0.22	0.13			-0.686***	0.18
Child Health	0.02	0.13	0.11	0.16	0.15	0.20	-0.05	0.22	-0.452*	0.22	-0.425†	0.24
Employment Status (Year 1)												
Mother has job = 1	-0.19	0.18	-0.17	0.18	-0.06	0.25			-0.341†	0.31		
Father has job = 1	-0.01	0.23	0.18	0.32			-0.27	0.43			-0.27	0.44
Social Support (Year 1)												
Mother received support	0.26	0.17	0.487*	0.19	0.46†	0.27			0.828**	0.30		
Father received support	0.430*	0.17	0.17	0.21			0.00	0.34			0.14	0.33
Incarceration History (1-Year)												
Father	0.30	0.27	-0.08	0.34	-0.30	0.43	0.27	0.38	0.42	0.51	0.22	0.60
Domestic Violent												
Father	-0.25	0.43	0.04	0.48	-2.32**	0.86	0.04	0.76	-1.09	0.74	-13.098***	1.28
Number of children in home < 18 years old	0.186*	0.08	0.05	0.10	-0.21	0.12	0.281*	0.14	0.03	0.13	0.04	0.17
Fertility History												
Couple Higher Order Birth (Yes= 1)	-0.04	0.20	0.25	0.23	0.38	0.30	0.38	0.32	0.20	0.35	-0.627†	0.36
Multipartnered Fertility												
Neither parent has a child by another partner (reference)												
Father has a child by another partner	0.352†	0.21	-0.31	0.29	0.653*	0.33	-0.07	0.39	-0.866*	0.43	-0.44	0.46
Mother has a child by another partner	0.15	0.22	-0.738*	0.32	0.637†	0.39	-0.14	0.43	-0.31	0.44	0.10	0.59
Both parents have a child by another partner	0.04	0.48	-0.52	0.37	-0.26	0.48	-0.60	0.60	0.03	0.68	1.24	0.95
Below poverty line = 1 (1-Year)	0.21	0.21	-0.35	0.24	0.07	0.37	-0.02	0.34	-0.64	0.45	0.60	0.41

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 2.11: Control Variables for the Longitudinal and Reciprocal Effects (Cohabitors Only)

Control Variables	Econ. Hardship (3-Year)		Econ. Hardship (5-Year)		Dep. Sym. (3-Year)				Dep. Sym. (5-Year)			
	Mother Report		Mother Report		Mothers		Fathers		Mothers		Fathers	
	b	se	b	se	b	se	b	se	b	se	b	se
Dep. Sym (Lagged)					0.311***	0.04	0.442***	0.08	0.354***	0.06	0.540***	0.08
Econ. Hardship (Lagged)	0.363***	0.05	0.401***	0.04								
Age at child's birth												
Mothers	-0.02	0.01	-0.02	0.02	-0.03	0.02			0.01	0.03		
Fathers	0.00	0.01	0.02	0.01			-0.01	0.02			0.01	0.02
Mother's race/ethnicity												
White non-Hispanic (reference)												
Black non-Hispanic	-0.313*	0.16	-0.05	0.14	0.08	0.29	-0.47	0.31	-0.49	0.31	0.29	0.37
Hispanic	-0.322*	0.16	-0.325*	0.15	-0.28	0.28	0.11	0.32	-0.781*	0.32	0.23	0.44
Other non-Hispanic	-0.07	0.35	0.28	0.31	-1.26	0.93	0.34	0.74	-0.21	0.81	-1.23	0.75
Parents are a different race/ethnicity	0.04	0.17	0.02	0.14	0.60*	0.27	0.01	0.31	-0.07	0.35	-0.01	0.39
Mother's Education												
Less than High School (reference)												
High school diploma or equivalent	0.12	0.14	0.15	0.14	0.01	0.26			0.645*	0.32		
Some college	0.324*	0.16	0.24	0.16	0.27	0.27			0.599†	0.36		
Bachelor's degree or higher	-0.189	0.40	0.06	0.35	-1.23	0.91			2.127***	0.57		
Father's Education												
Less than High School (reference)												
High school diploma or equivalent	0.16	0.14	0.02	0.14			0.30	0.27			-0.401	0.31
Some college	0.14	0.17	0.23	0.16			0.22	0.31			-0.57	0.44
Bachelor's degree or higher	-0.42	0.37	0.16	0.39			-13.30***	1.10			-10.90*	5.51
Health Status (1-Year)												
Mother's Health	-0.03	0.06	-0.09	0.06	0.01	0.11			-0.11	0.12		
Father's Health	0.05	0.07	-0.05	0.06			-0.01	0.13			-0.11	0.14
Child Health	-0.12†	0.07	0.04	0.08	-0.373**	0.13	0.10	0.15	-0.18	0.16	-0.03	0.17
Employment Status (Year 1)												
Mother has job = 1	-0.06	0.12	-0.14	0.12	-0.26	0.21			-0.692*	0.27		
Father has job = 1	-0.01	0.13	-0.205 †	0.12			-0.815**	0.27			-0.13	0.30
Social Support (Year 1)												
Mother received support	0.34**	0.12	0.17	0.11	0.098	0.22			0.448†	0.24		
Father received support	0.14	0.12	0.15	0.11			0.28	0.23			0.44	0.28
Incarceration History (1-Year)												
Father	0.254*	0.12	0.01	0.13	-0.24	0.22	0.27	0.26	0.35	0.25	0.603*	0.29
Domestic Violent												
Father	-0.60**	0.22	0.08	0.22	0.26	0.44	-0.61	0.58	1.021†	0.61	-1.097†	0.63
Number of children in home < 18 years old	0.14*	0.05	-0.05	0.06	-0.16	0.10	0.11	0.12	0.14	0.12	0.16	0.12
Fertility History												
Couple Higher Order Birth (Yes= 1)	0.02	0.13	-0.03	0.13	0.34	0.25	0.680*	0.27	0.06	0.30	0.499†	0.30
Multipartnered Fertility												
Neither parent has a child by another partner (reference)												
Father has a child by another partner	-0.044	0.17	0.20	0.16	-0.155	0.32	0.57	0.36	0.766*	0.35	0.34	0.40
Mother has a child by another partner	-0.26	0.17	0.16	0.17	0.21	0.29	-0.13	0.31	-0.46	0.30	-0.57	0.37
Both parents have a child by another partner	0.07	0.19	0.21	0.17	0.673*	0.29	0.15	0.36	-0.25	0.31	0.15	0.38
Below poverty line = 1 (1-Year)	0.00	0.12	0.09	0.13	-0.12	0.23	-0.57	0.24	-0.12	0.27	-0.29	0.29

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 2.12: Control Variables on Relationship Distress

Control Variables	All Couples				Married Couples				Cohabiting Couples			
	Mother		Father		Mother		Father		Mother		Father	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Dep. Sym. (Lagged)	.06*	0.03	0.028	0.03	0.085*	0.04	0.04	0.04	0.05	0.04	0.03	0.04
Family Structure												
Married (reference)												
Cohabiting	0.02	0.04	0.12**	0.04	—	—	—	—	—	—	—	—
Parent's Age at child's birth	-0.04	0.03	-0.07*	0.03	0.00	0.04	-0.02	0.04	-0.05	0.04	-0.093*	0.05
Race/ethnicity												
White non-Hispanic (reference)												
Black non-Hispanic	0.11**	0.03	0.10**	0.04	0.04	0.04	0.15**	0.05	0.12**	0.05	0.05	0.06
Hispanic	0.03	0.03	0.02	0.03	0.03	0.04	0.03	0.05	0.03	0.05	-0.01	0.06
Other non-Hispanic	-0.02	0.03	0.07*	0.03	0.00	0.04	0.11**	0.04	-0.03	0.04	0.06	0.04
Education												
Less than High School (reference)												
High school diploma or equivalent	0.02	0.03	-0.01	0.04	0.01	0.06	-0.13*	0.06	0.04	0.04	0.03	0.05
Some college	0.03	0.04	0.00	0.04	0.03	0.07	-0.10	0.07	0.04	0.05	0.03	0.05
Bachelor's degree or higher	0.04	0.04	-0.02	0.04	0.03	0.08	-0.12	0.08	0.07	0.04	-0.03	0.04
Parent's Health Status (1-Year)	0.02	0.03	-0.02	0.03	-0.02	0.04	-0.01	0.04	0.03	0.04	-0.04	
Child's Health (1-Year)	-0.09**	0.03	-0.04	0.03	0.00	0.04	0.00	0.04	-0.14***	0.04	-0.07†	0.04
Employment Status (Year 1)	0.01	0.03	0.03	0.03	0.05	0.04	0.01	0.04	-0.01	0.04	0.04	0.04
Social Support (Year 1)	0.04	0.03	0.03	0.03	0.01	0.04	0.08*	0.04	0.06	0.04	-0.01	0.04
Incarceration History (1-Year)												
Father	0.11***	0.03	0.07*	0.03	0.04	0.04	-0.01	0.05	0.14***	0.04	0.09*	0.04
Domestic Violent (1-Year)												
Father	0.08**	0.03	0.07*	0.03	0.06	0.04	0.03	0.04	0.09*	0.04	0.09*	0.04
Fertility History												
Couple Higher Order Birth (Yes= 1)	-0.03	0.03	-0.03	0.03	-0.01	0.04	-0.04	0.04	-0.03	0.04	-0.05	0.04
Multipartnered Fertility												
Neither parent has a child by another partner (reference)												
Father has a child by another partner	0.07**	0.03	-0.01	0.03	0.01	0.04	0.00	0.05	0.11**	0.04	-0.03	0.04
Mother has a child by another partner	0.06*	0.03	0.05	0.03	0.08†	0.04	0.05	0.04	0.07†	0.04	0.05	0.04
Both parents have a child by another partner	0.04	0.03	0.03	0.03	0.10*	0.04	0.03	0.04	0.03	0.04	0.03	0.05
Below poverty line = 1 (1-Year)	0.01	0.03	-0.03	0.03	0.10*	0.04	-0.01	0.04	-0.03	0.04	-0.03	0.04

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

## CHAPTER III

### *Parents' Depressive Symptoms and Coparenting: Does Race & Ethnicity Matter?*

#### **INTRODUCTION**

Supportive and cooperative coparenting relationships have several beneficial outcomes for parents and children. For example, coparenting is associated with children's adjustment (Baril, Crouter, and McHale 2007; Feinberg and Kan 2008) and parenting behavior (Carlson, McLanahan, and Brooks-Gunn 2008; Margolin, Gordis, and John 2001). Cooperative coparenting refers to the extent to which parents respect and support each other's parenting efforts (Feinberg 2003). Coparenting is especially important after the birth of a child as mothers and fathers begin to take on the joint enterprise of sharing parental responsibilities and duties, and learn to work together as a team to ensure the optimal well-being for their child and family. At the same time, however, the demands of having a young child increases parents' day-to-day stressors which often leads to higher levels of psychological distress, such as depressive symptoms (Umberson, Pudrovska, and Reczek 2010), which may infringe on supportive coparenting between parents. Conversely, supportive coparenting may reduce parents' psychological distress as partners work together and support one another in the parenting process. Although scholars have suggested that mental health is important to the coparenting relationship between parents (Feinberg 2003), few prior studies have empirically done so. Thus, the purpose of this chapter is to examine depressive symptoms and coparenting as a longitudinal and dyadic process among couples with a young child.

Family systems theory has long argued that individuals within families are interdependent (Cox and Paley 1997; O'Brien 2005), and families are often structured in

ways that parents serve as joint caregivers who are responsible for nurturing children—a line of reasoning that gave rise to coparenting research (McHale and Lindahl 2011). A more recent family theory such as the stress-spillover/crossover (hereafter stress-crossover) builds on the interdependence of individuals within families and focuses on the ways in which stress and distress compromises positive family functioning. Stress-crossover researchers also recognize that positive family processes can reduce stress and distress among family members (Larson and Almeida 1999; Neff and Karney 2007; Westman 2001). Stress crossover happens in two ways: (1) partner A's own stress or distress can negatively affect her/his own family functioning (*spillover*); and (2) partner B's stress can also adversely affect Partner A's family functioning (*crossover*). The fundamental crux of stress-crossover research highlights the importance of dyadic relationships holistically, illuminating stress and distress as both an intrapersonal and intra-dyadic phenomenon. Thus, taking a stress-crossover approach to the study of parents' post-birth psychological distress and coparenting can be fruitful for stress and family research.

Further, there are reasons to believe that the extent to which stress and distress affects family functioning may vary across race/ethnicity. Prior research suggests that race and ethnic minorities, when compared to Whites, are exposed to a greater number of social stressors (i.e., racism, discrimination, poverty, etc.), which have been linked to higher levels of psychological distress (Sternthal, Slopen, and Williams 2011). As a consequence, the effects of psychological distress may be more detrimental to the coparenting relationship for minority couples than for Whites. Moreover, given that minority parents also report higher levels of stress in the parenting role than Whites

(Nomaguchi and House 2013), having a supportive co-partner may be more meaningful for race/ethnic minorities than Whites in reducing depressive symptoms. Although scholars have noted the potential differences between race and ethnic groups in coparenting (Feinberg 2003; McHale and Lindahl 2011), many studies have used homogeneous samples, making the ability to examine variability across race and ethnicity impossible (for an exception, see Carlson and Hognas 2011). Even more, the association between psychological distress and coparenting may be a functioning of the child's age because the needs of children change over time, and thus, parental distress and coparenting may also change (Feinberg 2003; McHale, Kuersten-Hogan, and Rao 2004). Thus, the current study addresses the following questions: (1) Do depressive symptoms lead to lower levels of supportive coparenting? (2) Is supportive coparenting associated with lower levels of depressive symptoms for both parents? Finally, (3) do the associations vary by race/ethnicity?

The current study extends previous research on the association between parents' depressive symptoms and supportive coparenting in several ways. First, data are used from three time points for parents over their child's early developmental years: infant, toddler, and preschool. In addition, dyadic methods are used to understand (a) how each parent's own depressive symptoms are linked to their own report of supportive coparenting (*spillover*) and (b) how each parent's depressive symptoms are linked to their partner's report of supportive coparenting (*crossover*). Second, this study investigates the reverse association between coparenting and depressive symptoms to understand whether coparenting lowers parents' psychological distress. Third, the analyses are executed separately by race/ethnicity to examine whether the aforementioned associations vary

between groups. Last, this study uses data from a diverse, nationally representative sample of urban births in the late 1990s, and thus the results reflect urban couples (married and cohabiting) during the first five-years after the birth of their child. All in all, this study addresses the longitudinal association between parents' depressive symptoms and coparenting as children develop in years 0 through 5 of their lives.

## **LITERATURE REVIEW**

### ***Theoretical Perspective***

The present study draws on several theoretical perspectives and additional empirical studies that link psychological distress and dyadic functioning as a reciprocal and dyadic process. The association between factors are outlined in Figure 3.1. First, as noted with Path A, the expectation is that parents' depressive symptoms are associated with lower levels of coparenting for both parents, which draws on stress-spillover perspective (Neff and Karney 2007). One of the key assumptions of stress crossover research is that relationships do not exist in a vacuum. Rather, individuals within relationships are interdependent, and thus parental stressors play a vital part in hindering dyadic functioning (Larson and Almeida 1999; Neff and Karney 2007). Conversely, Path B shows that parents' cooperative coparenting is associated with lower levels of depressive symptoms for both parents. This path relies on research that suggests that being in a positive and supportive relationships provides emotional sustenance for parents, which leads to lower distress (e.g., Umberson and Montez 2010).

Paths C and D reflect the potential moderating factor of race/ethnicity (e.g., Helms 2013). These pathways suggest that given that racial and ethnic minorities are at an elevated risk for psychological distress, the effects of depressive symptoms on coparenting may be exacerbated for racial and ethnic minorities relative to Whites (Path



C). Based on a similar logic, coparenting may be more meaningful for minorities than for Whites in reducing psychological distress (Path D). The model also takes into account the extent to which these processes are stable or change over time as a function of children's developmental stages. Indeed, scholars have argued that parental stressors and the relationship between partners change as the needs of the child changes (e.g., Nomaguchi and Milkie 2003). Taken together, the current study captures the complexity of family life by highlighting psychological distress and coparenting as a dyadic process while simultaneously addressing variations across race and ethnicity, and across time. The conceptual model guides both the review of research (see below) and the statistical analyses.

### ***Depressive Symptoms and Coparenting***

Studies have well-documented that parents with young children are at an elevated risk for psychological distress such as depression (Evenson and Simon 2005; Umberson et al. 2010). The general premise is that the emotional and physical demands of parenting a young child generates elevated levels of stress that ultimately affects parents' mental health (Umberson et al. 2010). These consistent findings have important implications for the stability and quality of intimate relationships because depressed parents are more likely to display anger, and less likely to show support which consequently leads to conflict and distress between parents (Conger, Conger, and Martin 2010). Indeed, prior studies show that parents' depression affects family functioning such as marital quality (Beach et al. 2003). Limited attention, however, has been given to mental health and coparenting. Proponents of coparenting research suggest that parents' mental health may serve as an important factor that alters effective coparenting (Feinberg 2003). As a result,

scholars are beginning to pay attention to the empirical association between the effects of depressive symptoms on coparenting.

Prior studies give some support for the association between parents' depression and the coparenting relationship between partners. For example, Cabrera, Shannon, and La Taillade (2009), using data from the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B), found that fathers' depressive symptoms were significantly related to higher levels of coparenting conflict (i.e., conflict with their partner about issues about their children). The effects, however, were not significant for mothers. In two studies using different samples of resident fathers, Bronte-Tinkew et al. (2007) and Bronte-Tinkew, Horowitz, and Scott (2009) found that paternal depression was significantly associated with lower levels of fathers' report of coparenting support. In another study of 115 married couples, Elliston et al. (2008) found that fathers' depressive symptoms were associated with withdrawal in coparenting; the effects, however, were not significant for mothers. Carlson and Hognas (2011), using data from the Fragile Families study, found mothers' and fathers' risk of depression was significantly associated with mothers' report of coparenting. Despite the few studies on depression and coparenting, the studies above point to the growing efforts to shine light on this important issue. Thus, I offer the following hypothesis for each parent: *higher depressive symptom levels will be associated with lower cooperative coparenting levels for mothers and fathers.*

In addition to the direct association between parents' own depressive symptoms and coparenting, there is reason to believe that depression in one parent may affect their partner's view of the coparenting relationship. This line of reasoning is rooted in the idea that stress or distress in one partner can influence the other partner's functioning in close

relationships (Neff and Karney 2007). Thus, cross-partner association between one parent's depressive symptoms and the other parent's cooperative coparenting is not improbable. Few prior studies exist on the cross-partner association between depression and coparenting: one study found that fathers' depression decreased mothers' coparenting reports (Carlson and Hognas 2011). Additionally, another study found that mothers' depression was not significantly related to fathers' report of coparenting (Bronte-Tinkew et al. 2007). Notably, these prior studies did not explore depression and coparenting as a dyadic process; rather, partner's depression was used as a control variable in the regression-based analyses. Indeed, more empirical work is needed to understand the cross-partner association between depression and coparenting. All in all, I hypothesize that *higher depressive symptom levels of one partner will be associated with lower levels of cooperative coparenting from the other parent.*

<INSERT FIGURE 3.1>

### ***Coparenting and Depressive Symptoms***

Many scholars have painted a clear picture that psychological distress and other family processes have mutually influencing or reciprocal effects (e.g., depression and marital quality; Kouros and Cummings 2011). Thus, depressive symptoms and supportive coparenting may operate in similar ways. Although studies on the association between depressive symptoms and coparenting are increasing, few studies have examined the reverse association even though there are good reasons for doing so. For example, scholars argue that supportive and cooperative coparenting reflects parents working together to take care of the responsibilities for their child. As such, if mother-father coparenting relationship is supportive, and parents view each other as part of a team that contributes to the well-being of their child, each parent may feel a sense of appreciation,

respect, and love (Cutrona 1996; Don and Mickelson 2012) leading to better psychological outcomes and parental adjustment (Thoits 2011; Umberson and Montez 2010) for couples with a young child.

In many ways, coparenting is similar to spousal/partner support in intimate relationships given the emotional sustenance and the subsequent positive health outcomes that partner support provides (Feinberg 2002, 2003). For example, in an intervention study of 169 heterosexual couples, Feinberg and Kan (2008) found that mothers (but not fathers) who participated in the intervention program that introduced couples to coparenting (i.e., mutual support strategies for positive joint parenting) had a significant decrease in depressive symptoms compared to the control group (who were not introduced to coparenting). As previously mentioned, prior studies have not examined the effects of coparenting on depressive symptoms explicitly; however, previous research highlights the importance of positive mother-father relationships (e.g., spousal/partner support) on parental psychological well-being (Edwards et al. 2012). Inferences from these studies are used to build a foundation for understanding how coparenting may affect parents' depressive symptoms. In a study of African American mothers, Edwards et al. (2012) found that greater support from fathers was associated with fewer maternal depressive symptoms. Other studies give support that social support lowers depressive symptoms (Bielawska-Batorowicz and Kossakowska-Petrycka 2006; Don and Mickelson 2012; Gremigni et al. 2011), and low levels of social support were significantly associated with higher levels of depression in mothers (Horwitz et al. 2007; O'Hara and Swain 1996). Thus, I offer the following hypothesis for each parent: *higher cooperative coparenting levels will be associated with lower depressive symptom levels.*

<INSERT FIGURE 3.2>

***Race/Ethnicity, Parental Depression, and Coparenting***

Race and ethnic variations in both mental health and family functioning have pushed scholars to address the complexity of such differences (and similarities). For instance, given that race and ethnic minorities are disproportionately exposed to social stressors (i.e., socioeconomic inequality, discrimination, etc.) relative to Whites, minorities tend to display higher levels of psychological distress (Brown et al. 2000; George and Lynch 2003; Williams, Neighbors, and Jackson 2003). Race and ethnic variation in parental depression is less clear. For example, studies on race and ethnic variations in parental depression after the birth of a child are inconclusive with some studies showing that minority parents, when compared to White parents, have lower rates of depression (Wei et al. 2008), higher rates (Howell et al. 2005; Liu and Tronick 2013), or no differences (Yonkers et al. 2001). Many of these studies, however, have focused largely on postpartum depression or small, non-representative samples.

Increasingly, with the availability of longitudinal population-based data, studies are beginning to address the prevalence and correlates of parents' depressive symptoms following the birth of a child through the child's preschool years. For example, in a study of depressive symptomology among fathers with infants, Bronte-Tinkew et al. (2007) found that African American and Hispanic fathers displayed higher levels of depressive symptoms compared to White fathers. In addition, in a sample of mothers, Turney (2012) found race/ethnic differences in depression chronicity such that Whites and African Americans were less likely to report no depression or intermittent depression compared to persistent depression; and, Hispanic mothers, compared to White mothers, were less likely to report persistent depression than no depression. Notably, the extent to which

race and ethnic variations exist in depression or depressive symptoms is largely contingent upon the analytic sample and the measures used. Still, questions about race and ethnic variations in the association between depressive symptoms and coparenting remained unanswered.

In regards to race/ethnicity and family outcomes, studies show, compared to Whites, race and ethnic minorities are less likely to marry (McLoyd et al. 2000), more likely to divorce (Bryant et al. 2010), and display lower levels of relationship quality (Bulanda and Brown 2007). Given that a range of structural and interpersonal factors contribute to these disparities, scholars argue for a more culturally sensitive approach to the study of minority families to capture the lived experiences of these unions independently rather than comparisons vis-à-vis White families (Bryant et al. 2010; Burton 2010; Few 2007). Increased attention has been given to the need for a more culturally diverse understanding of coparenting (Cabrera, Shannon, and Jolley-Mitchell 2013; Feinberg 2003) as prior research has focused disproportionately on White, middle class couples (McHale and Lindahl 2011).

Although the investigation of coparenting among minority families have increased, these studies have focused largely on single-mother families and extended kinship (Dorsey, Forehand, and Brody 2007; Jones and Lindahl 2011; Jones et al. 2007). Yet, we know less about coparenting in two-parent minority families—although research is emerging. For example, in a study of 735 low-income Mexican American families, Cabrera et al. (2009) found that couple conflict was significantly related to coparenting conflict; and, coparenting conflict among mothers was associated with lowered parent-child interactions and lower level of parental warmth among fathers. In another study of

192 married African American couples, Riina and McHale (2012) found that stressors such as economic strain and discrimination lowered coparenting satisfaction. These studies lay important groundwork for the study of coparenting in two-parent minority families. Thus, the current study builds on these prior studies by taking a longitudinal and dyadic approach to understand psychological distress and coparenting across Black, Hispanic, and White couples.

The above review gives some indication that race/ethnicity matters in both parental depressive symptoms and coparenting. The extent to which the race and ethnic variations exist in the effects of depressive symptoms and coparenting is less known. Based on the logic that race/ethnic minorities experience a range of interpersonal stressors such as economic inequality and discrimination, these stressors may manifest themselves in mental health and subsequently affect family processes more so than Whites; thus, creating a difference in the association between groups. Alternatively, psychological distress can be detrimental to coparenting similarly across race and ethnicity, and thus no differences may emerge which suggest that Black, Hispanic, and White couples do not vary in the effects of psychological distress and cooperative coparenting. Given the limited research, the current analyses are largely exploratory and thus no hypothesis is offered.

### ***Coparenting Relationships Over Time***

As a child ages, the coparenting relationship between parents also change. The needs of a child during certain developmental stages may dictate to parents the nature of the coparenting relationship (Feinberg 2003; McHale et al. 2004). For example, the infant years may require parents to negotiate the child care duties (e.g., feeding, changing diapers, etc.) whereas the toddler to preschool years may be a time when parents begin to

set limits and rules for their child's behavior (Mangelsdorf, Laxman, and Jessee 2011). Relatedly, the extent to which parents work together as coparents may be contingent upon the coparenting division of labor (e.g., childcare duties; Feinberg 2003). For instance, mothers, when compared to fathers, are more involved in early child care responsibilities (Bianchi and Milkie 2010). Although mothers continue to outperform fathers in child care, fathers tend to increase their levels of involvement as their child gets older (Woodworth, Belsky, and Crnic 1996). Thus, a parent's mental health may affect the coparenting relationship more during certain developmental stages. That is, mothers' mental health may hinder cooperative coparenting during the infant to toddler years as mothers are usually the parent that gives primary care.

For fathers, poor mental health may affect fathers during the toddler to preschool years since fathers are more involved during this time period. Alternatively, the negative impact of depressive symptoms on cooperative coparenting may affect parents regardless of the child developmental stage. Indeed, the availability of longitudinal data allows for researchers to capture change and stability over time. The current study builds on prior longitudinal studies on coparenting (Schoppe-Sullivan et al. 2004) by examining the association between depressive symptoms and coparenting for parents when their child ages from infants to toddlers, and from toddlers to preschoolers.

### ***Additional Factors***

The analysis includes several control variables that are expected to be associated with both depressive symptoms and coparenting. For example, prior research has documented *marital status* differences (married versus cohabitators) in depression (Brown 2000) and coparenting (Hohmann-Marriott 2011). Parental *age* is associated with lower levels of depression (Mirowsky and Ross 2002) and increased coparenting (Bronte-Tinkew et al.



2007). Parent's *levels of education* is associated with fewer depressive symptoms (Lorant et al. 2003) and higher levels of cooperative coparenting (Stright and Bales 2003).

Immigrant status is associated with depression (Wilmoth and Chen 2003) and coparenting (Carlson and Hognas 2011). Parents' positive *relationship quality* is associated with lower levels of depression and higher levels of coparenting (Carlson and Hognas 2011; Umberson and Montez 2010). Parent's *physical health* has been linked to poor mental health (Webb et al. 2008) and affects coparenting (Carlson et al. 2008).

*Poverty* and *employment* increases depression (Dooley, Prause, and Ham-Rowbottom 2000) and lowers coparenting (Lindsey, Caldera, and Colwell 2005).

*Social support* is associated with higher levels of coparenting (Lindsey et al. 2005) and lower levels of depression (Thoits 2010). Fathers' incarceration history is associated with depression (Turney, Wildeman, and Schnittker 2012) and less coparenting (Carlson and Hognas 2011); parental *impulsivity* or self-control is related to lower levels of coparenting (Talbot and McHale 2004) and increases in depressive symptoms (Carlson et al. 2008). Studies have documented that *multipartnered fertility* is associated with increased depression (Bronte-Tinkew et al. 2009; Turney and Carlson 2011), and *the number of children* parents have together is also associated with depression (McLanahan and Adams 1987; Turney and Carlson 2011) and coparenting (Lindsey et al. 2005). Parents' *first birth* affects parents' mental health (Mirowsky and Ross 2002) as well as coparenting (Mchale 2007). Child characteristics such as *child's sex* matters in coparenting (McHale 1995) and *child's temperament* and is associated with less coparenting (Davis et al. 2009) and higher levels of parental depression (Hanington,

Ramchandani, and Stein 2010). Accordingly, these factors are adjusted for in the statistical analyses.

## **METHODS**

### ***Data***

Data for this study are from the Fragile Families and Child Well-being Study (FFCW). The FFCW is a nationally representative, longitudinal study that follows an urban birth cohort of 4,898 children and their parents (3,712 unmarried and 1,186 married births) in 20 U.S. cities with populations of 200,000 or more. The FFCW is based on a stratified, multistage probability sample with an oversample of unmarried births in urban cities. The FFCW began 1998-2000 and contains 4,898 mothers and 3,830 fathers. At baseline, mothers were interviewed in person while in the hospital within 48 hours of the birth, and fathers were interviewed in person or by phone once he was located (for more detailed information, see Reichman et al. 2001). Parents were re-interviewed when the child was one, three, and five years of age. The response rate for eligible mothers and fathers at baseline was 86% and 78%, respectively. Subsequent 1-, 3-, and 5-year follow-ups yielded 90%, 88%, and 87% response rates for eligible mothers, and 74%, 72%, and 70% for eligible fathers (Bendheim-Thomas Center on Child Wellbeing 2008).

The sample includes couples (biological mothers and fathers of the focal child) who were living together (either married or cohabiting) at the baseline survey and participated in the subsequent surveys and has no missing values on the focal variables. All survey waves are used; however, the main analyses are based on the follow-up waves because the focal variables (i.e., depressive symptoms and coparenting) were measured at the 1-, 3-, and 5-year waves only. The selection criteria of the sample for the data analyses are parents who were either married or cohabiting from the 1-year to the 3-year

surveys, and from the 3-year to the 5-year follow-up waves. This is done in order to maintain couples who were romantically involved consistently over all survey waves.

As a result of the selection criteria, of the couples living together at the 1-year follow-up (N = 2, 341), 347 cases were dropped (15%) from the sample because either the mother or father was not interviewed at the 3-year survey, 317 cases (14%) were dropped because the parents ended their relationship between the 1- and 3-year surveys, and 433 cases (18%) were dropped because information on depressive symptoms or coparenting were missing. This resulted in a sample of 1,244 couples (53%). For couples who were living together at the 3-year follow-up (N=2,032), 324 cases (16%) were dropped because either mother or father were not interviewed at the 5-year follow-up, 288 cases (14%) because the relationship ended between the 3- and 5-year waves, and 32 cases (2%) because of missing data on depressive symptoms and coparenting. This resulted in a sample of 1,388 (68%) couples who were romantically involved and consistently living together over 3- and 5-year follow-up surveys.

In addition, the analytic sample was separated into couples with the same race/ethnicity, namely Non-Hispanic Black, Hispanic, and Non-Hispanic White. For the couples in the 1- and 3-year follow surveys, 192 couples were either considered as “other” or were in mixed race relationships. These cases were ambiguous and so were removed from the analysis, resulting in a sample of 1,052 couples. For the couples in the 3- and 5-year surveys, 207 couples were either considered as “other” or were in mixed race relationships. These cases were deleted and resulted in a sample of 1,181 couples. For a more detailed description of the breakdown of race and ethnicity, see Figures 3.3 through 3.6.

In analyses of attrition, the excluded cases were more likely to be racial/ethnic minorities, somewhat younger, and had lower levels of education compared to parents who remain in the sample (see Tables 3.6 through 3.9). Comments about potential implications of attrition are in the Discussion section. To maximize sample size, multiple imputation was employed to impute missing data on the covariates, but not the focal variables for which Full Information Maximum Likelihood (FIML) was used (Acock et al. 2005; Allison 2002; Enders and Bandalos 2001). Ten multiple imputation data sets were constructed using imputation by chained equations in Stata and then the analyses were conducted and combined using Rubin's rules (Little and Rubin 2002) in Mplus. City sampling weights are used for the descriptive statistics to adjust for oversampling of nonmarital births but not for the analyses because the study controls for key characteristics associated with the weights (e.g., marital status at the birth of the child, age, race, and education; see Winship and Radbill 1994).

### *Measures*

#### **Depressive Symptoms**

Depressive symptoms at each wave were assessed using the Composite International Diagnostic Interview-Short Form for Major Depression (CIDI-SF), which is a comprehensive, standardized instrument used to assess the presence of mental disorders as specified by the Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R; American Psychiatric Association 1994). Respondents were asked the following stem questions: (a) "During the past 12 months, has there ever been a time when you felt sad, blue, or depressed for two or more weeks in a row? (b) "During the past 12 months, has there ever been a time lasting two weeks or more when you lost interest in most things like hobbies, work, or activities that usually give you pleasure?" Respondents who

affirmed these questions were asked about the following symptoms: (1) “losing interest,” (2) “feeling tired,” (3) “changes in weight,” (4) “trouble sleeping,” (5) “trouble concentrating,” (6) “feeling down,” and (7) “thoughts about death.” Each symptom is a dichotomous variable with the value of 1 indicating the presence of a symptom. For mothers,  $\alpha$  reliability scores at the 1-, 3-, and 5-year follow-up waves were .90, .86, and .93, respectively. For fathers,  $\alpha$  reliability scores at the 1-, 3-, and 5-year follow-up waves were .82, .86, and .86, respectively. The items were summed creating a range from 0 to 8 symptoms. Prior research using the FFCW study have examined depressive symptoms for both mothers and fathers (Bronte-Tinkew et al. 2009; Heflin and Iceland 2009).

### **Coparenting**

Coparenting at the 1-, 3, and 5-year follow-up surveys was measured by asking each parent five items about how the parents work together in raising their child. These items are (1) “When (father/mother) is with (child), he/she acts like the father/mother you want for your child,” (2) “You can trust (father/mother) to take good care of (child),” (3) “He/She respects the schedules and rules you make for (child),” (4) “He/She supports you in the way you want to raise (child),” and, (5) “You and (father/mother) talk about problems that come up with raising (child),” Responses are (1) “rarely true”, (2) “sometimes true”, and (3) “always true.” For mothers,  $\alpha$  reliability scores at the 1-, 3-, and 5-year follow-up waves were .62, .68, and .75, respectively. For fathers,  $\alpha$  reliability scores at the 1-, 3-, and 5-year follow-up waves were .58, .62, and .70, respectively. The items were summed with higher scores reflecting higher levels of cooperative coparenting.

### **Race/Ethnicity**

Race and ethnicity was measured using mothers and fathers' own reports to the following question: "Which of these categories best describes your race?" There were four response categories: (1) Non-Hispanic White, (2) Non-Hispanic Black, (3) Hispanic, and (4) other. Both parents' report of race/ethnicity was combined to identify same race couples; many of the parental relationships were race/ethnic homogenous. As mentioned earlier, couples who were either considered as "other" or were in mixed race relationships were dropped from the sample which resulted in the construction of the following dummy variables:

*White* (reference), *Black*, and *Hispanic*.

### **Additional Factors**

Control variables were included in all statistical models (described above) that are expected to be associated with depressive symptoms and coparenting. Identical measures were used for both mothers and fathers. Each control variable is represented for both mothers and fathers at the baseline survey (unless otherwise specified). *Marital status* was measured by a dichotomous variable with (0) indicating married (reference group) and (1) indicating cohabitation. Mothers and fathers' *age* was measured (in years) as continuous variables. Mothers and fathers' *education* level was measured using four categories: (1) less than high school (reference), (2) high school or equivalent, (3) some college or tech training, and (4) college graduate or more. *Physical health* (measured at the 1-year follow-up for parents and child) was measured by asking parents the following question: "In general, how is your health?" Mothers reported child's health with responses ranging from (1) poor to (5) excellent. *Employment status* was measured with a dichotomous item indicating whether each parent "Did any regular work for pay last week?" Response were (0) no and (1) yes.

*Social support* was measured with a dichotomous question (0=no, 1=yes) asking both parents “since child was born, have you received any financial help or money from anyone other than [partner]?” Mothers reported on fathers’ *incarceration history* (at the 1-year follow-up) indicating whether fathers have ever been in jail or prison (0=no, 1=yes). Parent’s *impulsivity* was gauged using Dickman’s (1990) impulsivity scale (6-items) to capture the ability to have self-control; responses range from (1) strongly disagree to (4) strongly agree, with higher scores reflecting higher impulsivity. “Mothers reported the number of children in the household at the 1-year follow-up. Parents’ fertility history was gauged with two separated measures: First, a measure was created to indicate whether the focal child is a higher order birth or first birth (0=first birth, 1=higher order birth). Second, a series of dummy variables indicating *multipartnered fertility* (at 1-year follow-up) which reflects whether mothers and fathers reported having a child with another partner: neither parent has a child by another partner (reference), father has child by another partner only, mother has child by another partner only, and both parents has a child by another partner. Poverty status (at the baseline survey) was measured using the household income-to-needs ratio based on the official U.S. poverty thresholds from the Census Bureau (adjusted for household composition and year). The variable was dichotomized to indicate that a ratio of 1 or less reflects a family lived in poverty, and a ratio above 1 reflects a family lived above the poverty line (0=no poverty, 1=poverty). The study also takes into account additional child characteristics such as child’s *sex* (boy=1) and *temperament*—which is measured by 6-items that gauges the difficulty of a child’s temperament with higher scores indicating higher levels of difficult temperament.

### *Analytic Strategy*

Structural equation modeling (SEM; Bollen 1989) was employed using *Mplus* 6.11 (Muthen and Muthen 2010) to estimate the hypothesized paths in Figures 3.1 and 3.2. SEM is a useful statistical technique for handling dyadic data within the context of Actor-Partner Interdependent Model (APIM) with distinguishable dyads (i.e., mothers and fathers; (Kenny, Kashy, and Cook 2006). In Figure 3.1, the analyses examine the direct effect of each parent's depressive symptoms on their own cooperative coparenting, and the effect of the other partner's depressive symptoms on their own cooperative coparenting. The outcome variables are standardized, and thus reflect the following interpretation: a unit change in the independent variable is associated with a standard deviation change in the endogenous variable. For the APIM for the effects of coparenting on depressive symptoms (Figure 3.2), the model was estimated using Negative Binomial Regression with Maximum Likelihood Estimation with robust standard errors. This was done to take into account the over-dispersion of both depressive symptoms as count variables. The parameter estimates are exponentiated; thus, the interpretation is as follows: a unit change in the independent variable is associated with a multiplicative change in the expected count in the dependent variable. To address whether the association between depressive symptoms and coparenting varies by race/ethnicity, the APIMs were both reestimated using multi-group SEM to allow the estimates for each group to be tested independently. This approach allows the parameter estimates to be analyzed separately for each race and ethnic group.



## RESULTS

### *Descriptive Statistics*

Table 3.1 presents the mean, percentages, and standard deviations for the demographic characteristics for couples by race and ethnicity (weighted using the city sampling weights). White couples were more likely to be married (89%) compared to African American (39%) and Hispanic (59%) couples. A larger percentage of white couples have a bachelor's degree (53% for mothers; 49% for fathers) whereas a larger portion African American couples have a high school diploma (47% for mothers; 42% for fathers), and a larger portion of Hispanic couples have less than a high school diploma (45% for mothers; 54% for fathers). On average, white couples were older than both African American and Hispanic couples. In addition, a majority of the Hispanic parents were born outside the U.S. (60%) while Black parents and White parents (over 80%) were born in the U.S.

<INSERT TABLE 3.1>

Table 3.2 shows the means for depressive symptoms and cooperative coparenting (weighted using city sampling weights) with significant differences evaluated by race and ethnicity using *t-tests* (noted by subscripts). Overall, both parents' depressive symptoms were similar at Year-1 and Year-5 but increased at the Year-3 follow-up. Coparenting remained relatively stable across survey waves for both mothers and fathers. On average, Black and Hispanic mothers displayed higher levels of depressive symptomology than white mothers at the 1- and 3-Year survey. Only Black mothers' and White mothers', however, were statistically different (subscript a). For fathers, depressive symptoms were significant different between Black fathers and White fathers at the 1-Year (subscript d) with Black fathers displaying higher depressive symptoms levels. At the 3-Year survey,

Black fathers and White fathers remained statistically different (subscript e), and Hispanic fathers were statistically different from White fathers (subscript f); in both cases, White fathers depressive symptoms levels were higher. In regards to coparenting, white mothers reported higher levels than Black and Hispanic mothers at Year-1 with White mothers reporting significantly higher coparenting levels (subscripts b and c). Hispanic fathers reported significantly higher levels of cooperative coparenting than Black fathers (subscript g) and White fathers (subscript c) at the 1-Year survey. The significant differences were consistent at the 3-Year survey (subscripts h and i). At the 5-Year survey, only Hispanic fathers and Black fathers were significantly different (subscript j) with Hispanic fathers reporting higher coparenting levels.

<INSERT TABLE 3.2>

### ***Actor-Partner Interdependent Models***

#### **Depressive Symptoms and Coparenting**

The first research question was whether parents' depressive symptoms were associated with lower levels of cooperative coparenting for couples during their child's early years (i.e., infant, toddler, and preschool). To address this question, the analyses were executed using actor-partner interdependence models. As Table 3.3, Panel A shows, with respect to depressive symptoms at Year-1 and coparenting at Year-3, a one-standard deviation increase in depressive symptoms was significantly associated with .09-standard deviation decrease in coparenting for mothers (actor effect). For fathers, a one-standard deviation increase in depressive symptoms was significantly but modestly associated with .06-standard deviation decrease in coparenting (actor effect). There were no significant partner effects. From Year-3 to Year-5, only fathers' depressive symptoms were significantly associated with .06-standard deviation decrease in coparenting for mothers

(partner effect). Taken together, the results demonstrate that depressive symptoms are associated with coparenting among mothers and fathers. Also, the effects are consistent for mothers over Years 1 to 3 and Years 3 to 5 after the birth of a child. All in all, the results support the research hypothesis that depressive symptoms lower cooperative coparenting.

### **Coparenting and Depressive Symptoms**

The second question addressed whether coparenting was associated with lower levels of depressive symptoms in couple dyads. Table 3.3, Panel B shows the association between coparenting and depressive symptoms over time. The results indicated that as coparenting (mothers' report) at Year 1 increases, depressive symptoms for mothers modestly decreased by a factor of .54 ( $p < .10$ ; actor effects). The partner effects, however, yielded no statistically significant results. For fathers, there were significant partner and actor effects: when fathers' report higher levels of cooperative coparenting at Year-1, depressive symptoms decreased by a factor of .41 at Year-3 ( $p < .05$ ); and, mothers' report of coparenting at Year-1 was significantly associated with a reduction in fathers' depressive symptoms at Year-3 by a factor of .46 ( $p < .05$ ). From Years 3 to 5, no statistically significant association emerged. These findings give some support for the research hypothesis that cooperative coparenting is associated with lower levels of depressive symptoms. Moreover, the results show that cooperative coparenting may be beneficial for fathers' mental health over Years 1 to 3 after a child's birth.

### **Race/Ethnicity, Depressive Symptoms, and Coparenting**

To address the third question—whether the association between depressive symptoms and coparenting varies by race and ethnicity—the analyses were executed using multi-group SEM for the models encompassing depressive symptoms to cooperative coparenting, and cooperative coparenting to depressive symptoms (see Tables 3.4 and

3.5, respectively). In Table 3.4, the results show the effect of depressive symptoms on coparenting—for Years 1 to 3 and Years 3 to 5—across race and ethnicity. For Black couples, no statistically significant results emerged for the association between depressive symptoms and coparenting from Years 1 to 3. In regards to Years 3 to 5, fathers' depressive symptoms is associated with .09 standard deviation decrease in coparenting for mothers (partner effect) and a .09 standard deviation decrease in coparenting for fathers (actor effect). In Table 3.5, the association between cooperative coparenting and depressive symptoms is presented. The results show that, for Black couples, as fathers' report of cooperative coparenting increases, depressive symptoms decrease by a factor of .23 ( $p < .05$ ) from Year 1 to Year 3. In regards to Year-3 to Year-5, no significant association between coparenting and depressive symptoms emerged.

For Hispanic couples (see Table 3.4), mothers' depressive symptoms were significantly associated with a .16-standard deviation decrease in coparenting (actor effect). Similarly, fathers' depressive symptoms were significantly associated with .11 standard deviations in coparenting from Years 1 to 3 (actor effect). For Years 3 to 5, no significant effects emerged, however. For the association between cooperative coparenting and depressive symptoms (Table 3.5), as fathers' report of cooperative coparenting increases at Year-1, depressive symptoms for mothers at Year-3 marginally increase by a factor of 3.52 ( $p < .10$ ; partner effect)—which is contrary to the research hypothesis. From Years 3 to 5, the findings were not statistically significant for Hispanic couples.

Turning to White couples, Table 3.4 shows that mothers' with higher levels of depressive symptoms was associated with a .16 standard deviation decrease in

cooperative coparenting. No significant effects emerged from Years 3 to 5. In Table 3.5, as mothers' report of higher levels of cooperative coparenting increases, mothers' depressive symptoms decrease by a factor of .31 (actor effect;  $p < .10$ ); and, mothers' report of higher levels of cooperative coparenting was significantly associated with a decrease in depressive symptoms for fathers by a factor of .17 (partner effect;  $p < .001$ ). The results for Years 3 to 5 were not statically significant.

In sum, the results show that race and ethnic variations exist in the longitudinal and dyadic association between depressive symptoms and cooperative coparenting. The variations, however, are largely contingent upon the age of the child. More specifically, depressive symptoms tend to lower coparenting for Hispanic and White couples from Year-1 to Year-3 whereas depressive symptoms affect coparenting for Black couples from Year-3 to Year-5. Moreover, the association between coparenting and depressive symptoms tends to matter more for Black and White couples (particularly fathers) than Hispanic couples.

## **DISCUSSION**

The purpose of the present study was to examine the longitudinal association between (1) depressive symptoms and cooperative coparenting, (2) coparenting and depressive symptoms, and (3) whether race/ethnic variations emerged in the associations among couples living in urban cities after their child's birth ages one, three, and five. The findings corroborate prior studies that depressive symptoms are associated with levels of coparenting among parents with young children (Cabrera et al. 2009; Carlson and Hognas 2011; Elliston et al. 2008). The current study extends this line of research by examining the longitudinal association between parents' mental health and the extent to which mothers and fathers cooperatively co-parent with each other as children grow from

infants to toddlers; and, from toddlers to preschoolers. Overall, the results support the notion that stress-crossover in which parents' psychological distress has adverse effects on family functioning (Neff and Karney 2007). Specifically, higher levels of depressive symptoms were associated with decreased cooperative coparenting between parents.

With regards to the association between cooperative coparenting and parents' depressive symptoms, the findings give credence to the idea that when parents work together in supportive ways in the context of child rearing, parents' psychological distress decreases. Although the findings from the current study show a modest association for mothers, the finding for fathers are quite telling: that is, fathers' depressive symptoms are reduced when fathers give and receive coparenting support, especially as children age from infant to toddler. Indeed, prior research shows that giving and receiving support can be beneficial for mental health (Ko and Lewis 2011). These findings are particularly striking because mothers are more likely to be involved in early child care responsibilities than fathers (Bianchi and Milkie 2010). Being an active participant in early child rearing tasks can be beneficial to fathers' health, however (Eggebeen and Knoester 2001). Although scholars have suggested the potential association between coparenting and depression (Feinberg 2003), little empirical investigation has explored the association. The present study is one of the first to explicitly address the association between cooperative coparenting and depression. Moreover, the findings show evidence that coparenting can be helpful to parents' psychological well-being, especially fathers.

Turning to race and ethnicity, the relationship between depressive symptoms and coparenting varies between race and ethnic groups. The analyses were performed separately for each race and ethnic group because many families are organized around

many cultural norms and scripts, and as a result, may respond differently (or similarly) to certain stressors and family processes (Dilworth-Anderson, Burton, and Johnson 1993). Although the results show that depressive symptomology matters in coparenting similarly for each group, the pattern of results indicates that the variation is contingent upon the developmental stage of the focal child. For example, depressive symptoms were associated with cooperative coparenting for Hispanic couples (mothers and fathers) and White couples (mothers only) during their child's infant to toddler years. For Black couples (particularly fathers), the association emerged from the toddler to preschool years.

One explanation for the variations in the effects for race and ethnic groups during certain developmental ages could be because some parents are more engaged with their children during later stages. For example, Black fathers are involved with preschoolers more than infants (Black, Dubowitz, and Starr 1999), monitor their children more (Hofferth 2003), and tend to hold more traditional family and gender ideologies (e.g., separate spheres; Toth and Xu 1999) than fathers from other race and ethnic groups. Thus, the temporal variation in the effects may reflect the following: as a child grows older, Black fathers want (and may be expected) to be more involved in the childrearing process but mental health interferes with actively engaging with their preschool-age child, especially in the context of coparenting. Simply put, depressive symptoms may be a hindrance in coparenting relationship during the preschool years—a time when Black fathers are more engaged with their children. Although there has been a limited amount of studies on race and ethnic variations in the association between mental health and coparenting, the present study corroborates a prior study that investigated depression and

coparenting among Mexican American families (Cabrera et al. 2009) as well as providing an extension to other racial groups.

Moreover, race and ethnic differences also emerged for couples in regards to the association between coparenting and depressive symptoms for the Year-1 to Year-3 analysis only. More specifically, cooperative coparenting plays an important role in decreasing psychological distress for both Black and White fathers (and modestly for White mothers). These findings point to the importance of social support in the parental role for some families. Contrary to expectations, Hispanic fathers' report of coparenting was associated with higher levels of mothers' depressive symptoms, though the association was modest. To speculate, this association may suggest that although Hispanic fathers are reporting high levels of coparenting, mothers may be involved in the lion's share of the parenting duties, and subsequently affecting mothers' psychological health, or, given that the expectation in certain Hispanic groups is that mothers take on much of the parenting role and thus fathers increase in coparenting may lead to psychological distress among mothers who see this as part of their sphere of influence. Nevertheless, the overall findings points to the importance of coparenting education (Fagan 2008)—not only for parents' relationships and children's well-being but also for parents' mental health. Moreover, the findings also highlight the importance of a culturally relevant approach to the study of families given the variability in the association between depressive symptoms and coparenting for different race and ethnic groups during particular child developmental stages.

### ***Implications***

In regards to implications for research, the results highlight family systems theory in general (Cox and Paley 1997), and stress-crossover association of psychological distress



and family functioning among couple dyads in particular (Neff and Karney 2007). The results also point to the importance of examining whether or not couples of different race and ethnic groups vary in the association between psychological distress and family processes, and in this case, cooperative coparenting—which points to the importance of culturally relevant research. Future research can move this line of inquiry forward by examining how depression affects coparenting as children get older. Moreover, other factors such as marital status, birth-order, and socioeconomic status may moderate the extent to which depressive symptoms affect supportive coparenting.

The results may also have policy implications. For example, in light of public policy that focuses on strengthening relationship quality among low-income couples to promote father involvement and favorable outcomes for children, the notion of coparenting has been somewhat ignored (McHale 2010). Yet, studies show that cooperative coparenting is beneficial to children's well-being (Palkovitz, Fagan, and Hull 2013) and paternal involvement (Carlson et al. 2008). The current study provides some evidence that cooperative coparenting may also improve parents' mental health over critical periods of child development. Thus, public policy efforts that focus on strengthening relationship quality between parents may also find it valuable to include ways to increase cooperative coparenting in an efforts to help parents work together to mutually care for their child.

### ***Limitations***

Although the current study provides valuable insight on the association between depression and coparenting, there are notable limitations. First, the analyses are based on a sample of urban couples after the birth of a child in the late 1990s; therefore, the inferences cannot be generalized to the larger population. Moreover, the sample was

restricted to couples living together across survey years; therefore, less is known about couples who separate over time (i.e., single mothers and nonresident fathers). Second, as in many studies using survey data, the potential for missing variable bias should be noted. Even though several control variables are employed in the current study (see Tables 3.10 through 3.15), and the analysis takes into account the longitudinal design of these data, the threat of unobserved variables may bias the parameter estimates. Ideally, observational studies and studies with an experimental design would be beneficial in this regard. In addition, missing data is not random; for example, minorities and respondents with lower levels of socioeconomic status are more likely drop out of the study over time (see Tables 3.6 and 3.7). As such, coparenting may be overestimated and depressive symptoms may be underestimated as respondents who dropped out of the study tend to have lower levels of coparenting and higher levels of depressive symptomology. Lastly, given that coparenting is a multi-dimensional construct (Van Egeren and Hawkins 2004; Feinberg 2003), the present study only uses cooperative coparenting. Future studies may benefit using additional measures of the coparental relationship that tap into negative aspects of coparenting such as parental undermining.

### ***Strengths***

Despite the noted limitations, there are valuable strengths to the current analyses. First, the present study uses a large, diverse longitudinal sample of parents living in urban cities with a sizeable number of couples from the three largest race and ethnic groups in the U.S. Second, one of the strengths of the Fragile Families data is that both parents were interviewed, and thus, this study leverages data from both parents to understand the how depression and coparenting is linked for mothers and fathers which extends prior studies using reports from only one parent (Bronte-Tinkew et al. 2007; Carlson and Hognas

2011). Moreover, using Actor-Partner Interdependent Models provide an empirical approach to test the theoretical perspective that parenting is inherently dyadic (e.g., stress-crossover). Last, although coparenting researchers have noted that cooperative coparenting may affect parents' mental health (Feinberg 2003), the current study is one of the first to empirically test the association.

## **CONCLUSION**

In conclusion, the current study explored the association between depressive symptoms and coparenting, coparenting and depressive symptoms, and whether the associations varied by race and ethnicity among an urban parents after a child's birth in the late 1990s. Using Actor-Partner Interdependent Models, the results show that the longitudinal association between depressive symptoms and coparenting matters in three distinct ways: (1) depressive symptoms is detrimental for coparenting, particularly for mothers, and (2) the link between coparenting and depressive symptoms may be more beneficial for fathers, and (3) race and ethnic variations emerged in the associations, particularly during specific child developmental stages. Future research can move this line of research further by understanding the association between psychological distress and coparenting as children enter into middle and high school.

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APPENDIX B

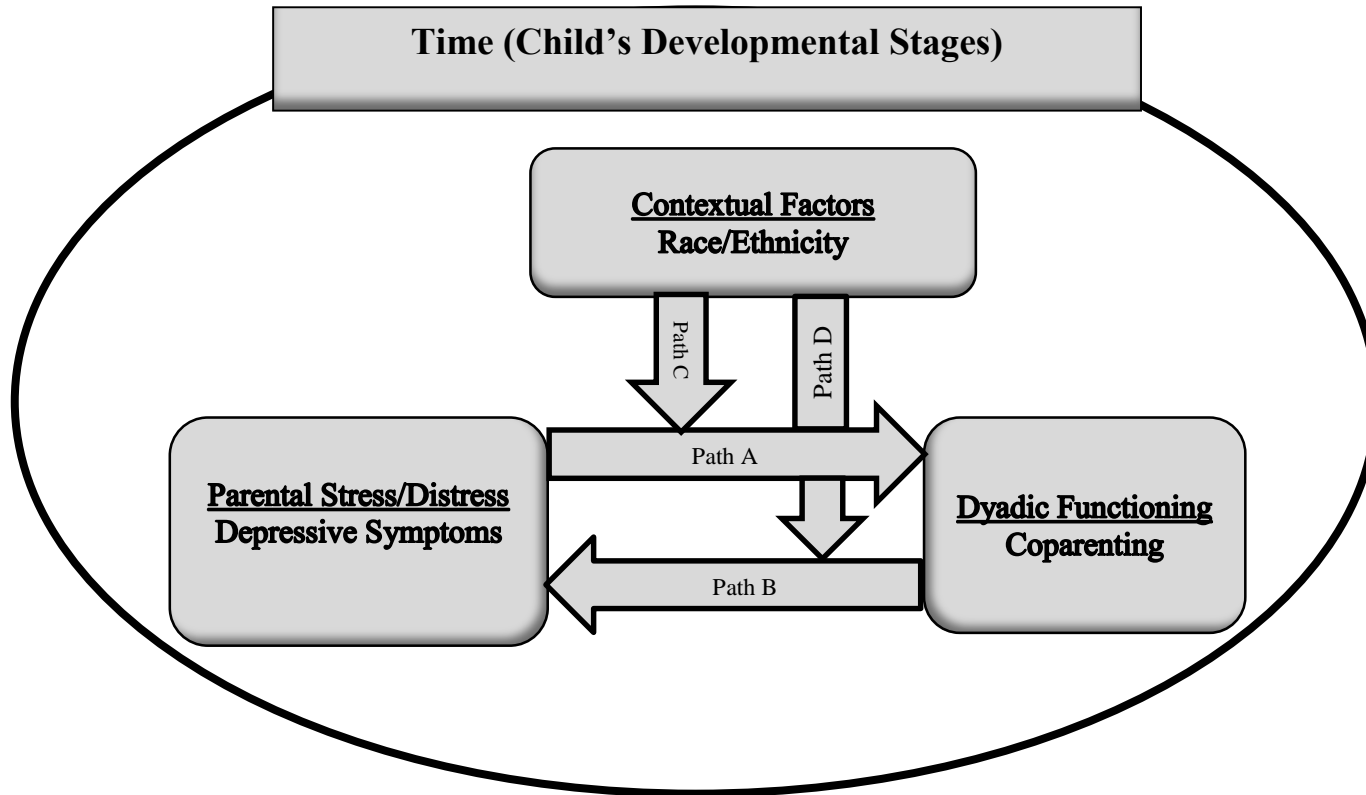


Figure 3.1: Conceptual Model Linking Depressive Symptoms, Coparenting, and Race/Ethnicity over Time

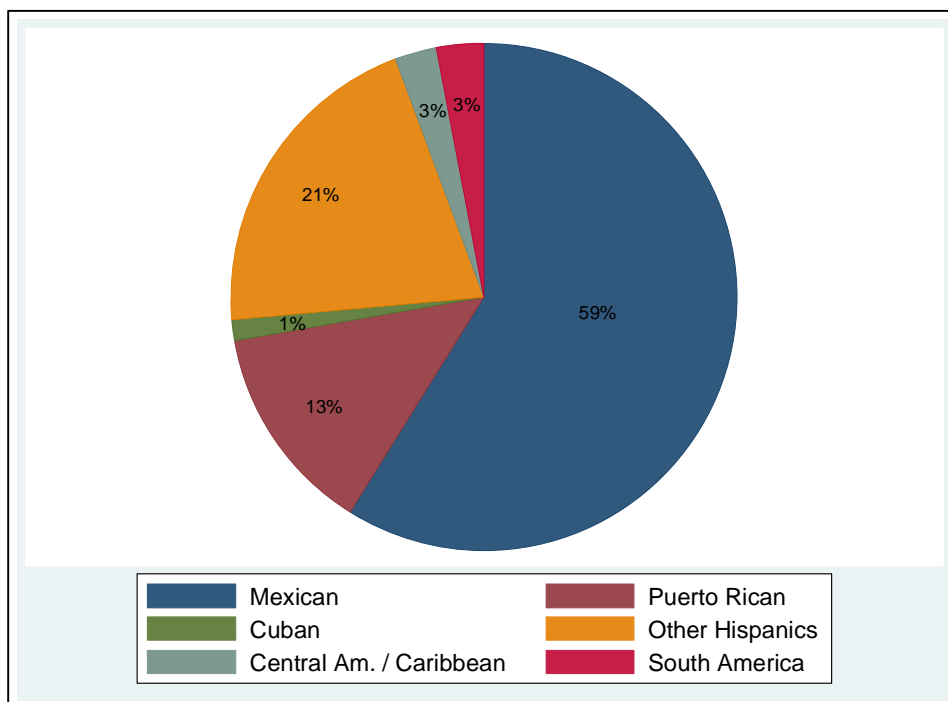


Figure 3.2: Latino Ancestry among Mothers

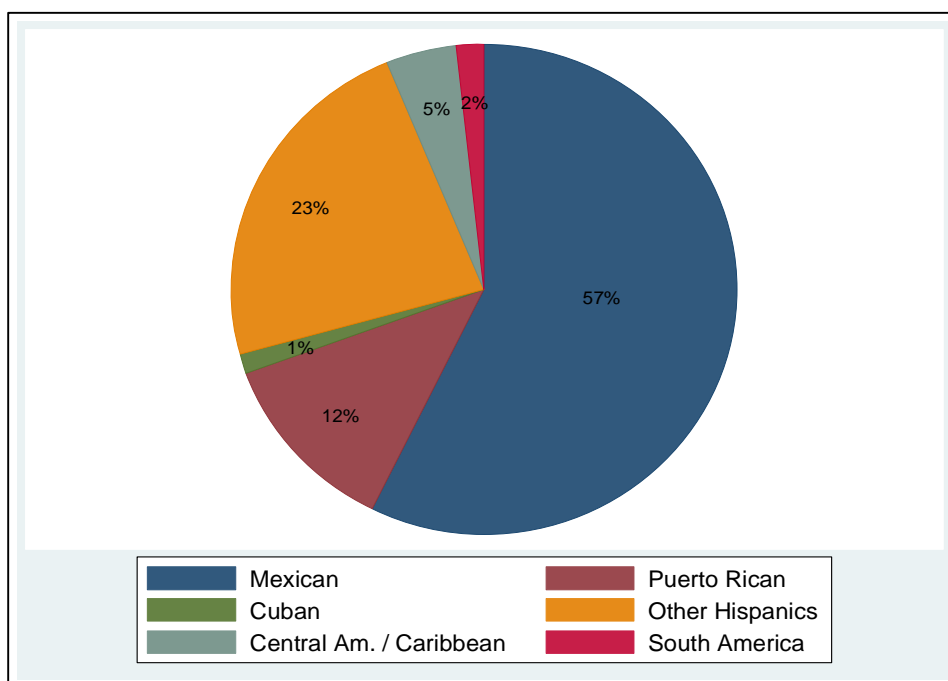


Figure 3.3: Latino Ancestry among Fathers

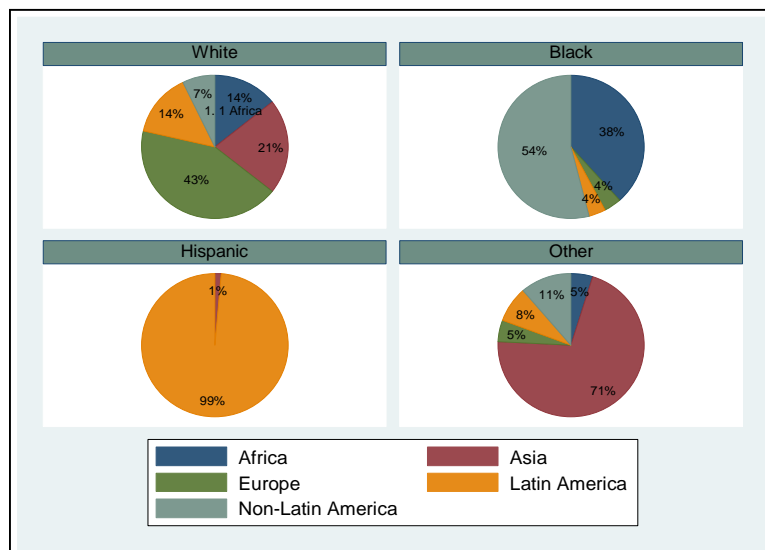


Figure 3.4: Geographic Location for Mothers, by Race/Ethnicity

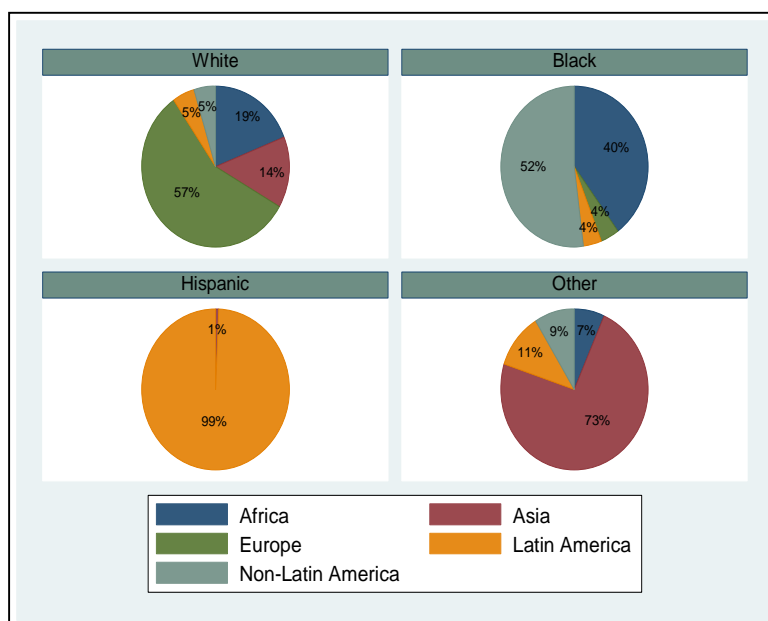


Figure 3.5: Geographic Location for Fathers, by Race/Ethnicity

Table 3.1: Weighted Descriptive Statistics by Race/Ethnicity (N = 1052)

	All Couples		Black Couples		Hispanic Couples		White Couples	
	Mean or %	SD	Mean or %	SD	Mean or %	SD	Mean or %	SD
Marital Status (Baseline)								
Married	67.02		38.63		58.78		89.92	
Cohabiting	32.98		61.40		41.20		10.10	
Parent's Age at birth								
Mother's Age	27.95	5.75	26.79	5.86	25.88	4.79	30.29	5.57
Father's Age	30.40	6.67	29.76	6.87	28.35	6.12	32.43	6.41
Mother's Education								
Less than HS	22.44		19.70		45.30		5.49	
HS Diploma	33.45		47.00		33.70		25.60	
Some College	18.41		26.40		16.20		15.50	
Bachelor's Degree or higher	25.70		6.91		4.77		53.40	
Father's Education								
Less than HS	25.35		21.60		53.90		4.35	
HS Diploma	26.56		41.90		20.90		22.30	
Some College	22.88		30.00		16.50		24.00	
Bachelor's Degree or higher	25.21		6.43		8.66		49.30	
Immigrant Status (Born in U.S.)								
Mother's Immigrant Status	0.74		0.85		0.39		0.96	
Father's Immigrant Status	0.69		0.83		0.40		0.85	
Relationship Quality								
Mothers Relationship Quality	4.24	0.84	4.09	0.81	4.04	0.98	4.48	0.66
Fathers Relationship Quality	4.27	0.88	4.08	0.97	4.14	0.89	4.49	0.77
Health Status								
Mother's Health	3.99	0.93	3.90	1.03	3.65	0.84	4.30	0.82
Father's Health	4.04	0.92	4.09	0.82	3.74	1.03	4.26	0.81
Child Health (1-Year)	4.53	0.74	4.58	0.72	4.27	0.90	4.71	0.52
Employment Status								
Mother has job (1-Year)	50.70		59.80		38.40		55.40	
Father has job (1-Year)	89.43		77.30		92.90		93.60	
Social Support								
Mother social support	24.62		36.40		15.20		25.40	
Father social support	31.26		41.10		14.00		39.60	
Father's Incarceration History								
Father Incarcerated	8.01		14.2		9.75		3.11	

TABLE 3.1 continued on next page

Table 3.1: Weighted Descriptive Statistics by Race/Ethnicity (N = 1052)

	All Couples		Black Couples		Hispanic Couples		White Couples	
	Mean or %	SD	Mean or %	SD	Mean or %	SD	Mean or %	SD
Parent's Impulsivity <sup>a</sup>								
Mother Impulsivity	1.92	0.57	1.96	0.55	2.01	0.64	1.82	0.50
Father Impulsivity	1.86	0.62	1.84	0.67	2.00	0.63	1.77	0.55
# of children in HH	1.12	1.30	1.50	1.48	1.21	1.31	0.83	1.11
Fertility History								
Higher order birth	54.12		55.80		54.90		52.50	
No MFP <sup>b</sup>	69.13		37.70		66.00		89.60	
Father only MFP	9.89		18.30		9.08		5.78	
Mother only MFP	10.97		19.00		14.90		3.07	
Both MFP	10.01		25.00		9.97		1.54	
Poverty Status								
Lives in poverty	19.74		30.90		34.60		1.36	
Child Characteristics								
Boy=1	60.38		57.60		68.30		55.60	
Child Temperament	2.46	0.69	2.51	0.80	2.62	0.68	2.31	0.59
N	1052		379		315		358	

Note: Variables are from baseline survey or 1-year follow-up survey unless otherwise noted. All variables are weighted by city sampling weights; however, the number of cases (N) is unweighted.

<sup>a</sup>Multi-partnered fertility; <sup>b</sup>measured at the 3-year follow-up survey.

Table 3.2: Weighted Mean Differences

Variables	All Couples		Black Couples		Hispanic Couples		White Couples	
	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers
Dep. Sym. Year 1	0.43	0.36	0.48	0.53 <sup>d</sup>	0.51	0.28 <sup>d</sup>	0.34	0.34
Dep. Sym. Year 3	0.70	0.52	1.03 <sup>a</sup>	0.32 <sup>e</sup>	0.77	0.43 <sup>f</sup>	0.45 <sup>a</sup>	0.71 <sup>ef</sup>
Dep. Sym. Year 5	0.40	0.32	0.41	0.34	0.35	0.31	0.43	0.33
Coparenting Year 1	2.86	2.89	2.83 <sup>b</sup>	2.87 <sup>g</sup>	2.83 <sup>c</sup>	2.91 <sup>g</sup>	2.90 <sup>bc</sup>	2.89
Coparenting Year 3	2.82	2.86	2.80	2.83 <sup>i</sup>	2.83	2.92 <sup>hi</sup>	2.83	2.84 <sup>h</sup>
Coparenting Year 5	2.81	2.90	2.83	2.86 <sup>j</sup>	2.81	2.92 <sup>j</sup>	2.81	2.90

Means with identical superscripts denote significant difference.



Table 3.3: Parameter Estimates for the Association between Depressive Symptoms and Coparenting

	Year 1 to Year 3				Year 3 to Year 5			
	Mothers		Fathers		Mothers		Fathers	
	b	se	b	se	b	se	b	se
<b>Panel A: Dep. Symptoms --&gt; Coparenting<sup>a</sup></b>								
<i>Actor Effects</i>	-0.09**	0.03	-0.05†	0.03	-0.02	0.03	-0.02	0.03
<i>Partner Effects</i>	-0.004	0.03	0.02	0.03	-0.06*	0.03	-0.04	0.03
	Year 1 to Year 3				Year 3 to Year 5			
	Mothers		Fathers		Mothers		Fathers	
	exp(b)	t	exp(b)	t	exp(b)	t	exp(b)	t
<b>Panel B: Coparenting --&gt; Dep. Symptoms<sup>b</sup></b>								
<i>Actor Effects</i>	0.54 †	-1.83	0.41*	-2.05	0.66	-1.47	0.84	-0.43
<i>Partner Effects</i>	0.94	-0.16	0.46*	-2.19	0.80	0.58	0.66	-1.28

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 3.4: Standardized Coefficients Linking Depressive Symptoms to Coparenting, by Race/Ethnicity

<b>Panel A: Dep. Symptoms --&gt; Coparenting</b>												
<b>Year 1 to Year 3</b>												
	Black Couples				Hispanic Couples				White Couples			
	Mothers		Fathers		Mothers		Fathers		Mothers		Fathers	
	b	se	b	se	b	se	b	se	b	se	b	se
<i>Actor Effects</i>	-0.02	0.05	-0.08	0.05	-0.15**	0.05	-0.11*	0.05	-0.16***	0.04	0.02	0.05
<i>Partner Effects</i>	-0.03	0.05	0.01	0.05	0.00	0.05	0.03	0.05	0.00	0.04	0.04	0.05

<b>Panel B: Dep. Symptoms --&gt; Coparenting</b>												
<b>Year 3 to Year 5</b>												
	Black Couples				Hispanic Couples				White Couples			
	Mothers		Fathers		Mothers		Fathers		Mothers		Fathers	
	b	se	b	se	b	se	b	se	b	se	b	se
<i>Actor Effects</i>	0.00	0.05	-0.09†	0.05	-0.03	0.05	-0.01	0.05	-0.04	0.04	-0.03	0.05
<i>Partner Effects</i>	-0.09*	0.04	-0.05	0.05	-0.06	0.05	-0.03	0.05	-0.02	0.04	-0.01	0.05

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 3.5: Exponentiated Estimates Linking Coparenting to Depressive Symptoms, by Race/Ethnicity

<b>Panel A: Coparenting --&gt; Dep. Symptoms</b>												
<b>Year 1 to Year 3</b>												
	Black Couples				Hispanic Couples				White Couples			
	Mothers		Fathers		Mothers		Fathers		Mothers		Fathers	
	exp(b)	t	exp(b)	t	exp(b)	t	exp(b)	t	exp(b)	t	exp(b)	t
Actor Effects	0.64	-1.07	0.23*	-2.00	0.36	-1.47	1.26	0.30	0.36†	-1.86	0.54	-0.63
Partner Effects	0.57	-1.06	0.65	-1.10	3.56†	-1.10	0.59	-0.80	1.03	0.03	0.13***	-2.93

<b>Panel B: Coparenting --&gt; Dep. Symptoms</b>												
<b>Year 3 to Year 5</b>												
	Black Couples				Hispanic Couples				White Couples			
	Mothers		Fathers		Mothers		Fathers		Mothers		Fathers	
	exp(b)	t	exp(b)	t	exp(b)	t	exp(b)	t	exp(b)	t	exp(b)	t
Actor Effects	0.64	-1.39	0.71	-1.34	1.14	0.61	0.76	-0.75	0.90	-0.15	0.87	-0.68
Partner Effects	1.60	0.16	1.01	-0.03	0.89	-0.55	0.62	-1.58	0.86	-0.43	0.84	-0.76

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 3.6: Attrition for Mothers and Fathers Between Years 1 - 3

Variables	Mothers		Fathers	
	exp(b)	t	exp(b)	t
Coparenting	1.27	0.67	0.95	-0.14
Depressive Symptoms	1.05	0.76	1.00	0.02
Marital Status				
Married (reference)				
Cohabiting	1.10	0.43	1.89**	2.63
Parent's Age	1.02	0.89	0.99	-0.69
Race/Ethnicity				
Non-Hispanic White (reference)				
Non-Hispanic Black	1.21	0.72	0.82	-0.79
Hispanic	1.92*	2.47	1.46	1.52
Other	1.98	1.54	0.50	-1.12
Parent's Education				
Less than H.S. (reference)				
High School Diploma	0.78	-1.07	0.94	-0.28
Some College	0.78	-0.98	0.85	-0.64
Bachelor's Degree or higher	0.53+	-1.66	0.99	-0.02

Exponentiated coefficients

+ p&lt;0.10, \* p&lt;0.05, \*\* p&lt;0.01, \*\*\* p&lt;0.001

Table 3.7: Attrition for Mothers and Fathers Between Years 3 - 5

Variables	Mothers		Fathers	
	exp(b)	t	exp(b)	t
Coparenting	1.16	0.49	0.64	-1.33
Depressive Symptoms	0.99	-0.25	0.86+	-1.94
Marital Status				
Married (reference)				
Cohabiting	1.17	0.73	1.11	0.48
Parent's Age	1.02	0.97	0.98	0.48
Race/Ethnicity				
Non-Hispanic White (reference)				
Non-Hispanic Black	0.88	-0.51	1.09	0.36
Hispanic	1.39	1.34	1.02	0.07
Other	1.89+	1.69	0.91	-0.17
Parent's Education				
Less than H.S. (reference)				
High School Diploma	0.66+	-1.65	1.46+	1.78
Some College	0.99	-0.06	0.59+	-1.87
Bachelor's Degree or higher	0.69	-1.11	0.61	-1.34

Exponentiated coefficients

+ p&lt;0.10, \* p&lt;0.05, \*\* p&lt;0.01, \*\*\* p&lt;0.001

Table 3.8: Relationship Ended Between Years 1 - 3

Variables	Mothers		Fathers	
	exp(b)	t	exp(b)	t
Coparenting	0.40***	-3.83	0.45**	-2.72
Depressive Symptoms	1.05	1.07	1.08	1.32
Marital Status				
Married (reference)				
Cohabiting	2.82***	5.08	2.35***	3.88
Parent's Age	0.95***	-3.86	0.97*	-2.24
Race/Ethnicity				
Non-Hispanic White (reference)				
Non-Hispanic Black	1.70**	2.99	1.68*	2.45
Hispanic	0.57*	-2.52	0.73	-1.31
Other	0.97	-0.06	1.96+	1.66
Parent's Education				
Less than H.S. (reference)				
High School Diploma	1.10	0.53	1.27	1.31
Some College	1.04	0.18	0.75	-1.26
Bachelor's Degree or higher	0.50+	-1.87	0.12***	-3.40

Exponentiated coefficients

+ p&lt;0.10, \* p&lt;0.05, \*\* p&lt;0.01, \*\*\* p&lt;0.001

Table 3.9: Relationship Ended Between Years 3 - 5

Variables	Mothers		Fathers	
	exp(b)	t	exp(b)	t
Coparenting	0.60*	-2.48	0.61+	-1.88
Depressive Symptoms	1.03	0.70	1.11*	2.18
Marital Status				
Married (reference)				
Cohabiting	3.35***	6.12	3.02***	5.64
Parent's Age	0.977+	-1.71	0.98*	-2.02
Race/Ethnicity				
Non-Hispanic White (reference)				
Non-Hispanic Black	1.57*	2.45	1.96**	3.25
Hispanic	0.74	-1.46	1.15	0.60
Other	1.15	0.35	0.50	-1.10
Parent's Education				
Less than H.S. (reference)				
High School Diploma	0.91	-0.54	1.13	0.69
Some College	0.73	-1.63	0.86	-0.75
Bachelor's Degree or higher	0.56+	-1.85	0.78	-0.78

Exponentiated coefficients

+ p&lt;0.10, \* p&lt;0.05, \*\* p&lt;0.01, \*\*\* p&lt;0.001

Table 3.10: Standardized Estimates for Control Variables on Coparenting at Year-3 and Year 5 (All Couples)

Control Variables	Year-1 to Year-3 (N=1052)				Year-3 to Year-5 (N=1181)			
	Mother		Father		Mother		Father	
	b	se	b	se	b	se	b	se
Coparenting (Lagged)	0.43***	0.03	0.31***	0.03	0.45***	0.03	0.36***	0.03
Cohabitation = 1	-0.01	0.04	-0.01*	0.04	-0.04	0.03	-0.01	0.04
Black	0.02	0.04	0.02	0.04	0.07†	0.03	-0.02	0.04
Hispanic	0.01	0.04	0.07†	0.04	0.03	0.04	-0.02	0.04
U.S. Citizen = 1	-0.09**	0.03	-0.03	0.03	0.03	0.03	-0.06†	0.03
HS Diploma	0.02	0.04	-0.08*	0.04	0.00	0.03	0.01	0.03
Some College	0.01	0.04	-0.10*	0.04	-0.03	0.04	-0.05	0.04
Bachelor's Degree or higher	-0.01	0.04	-0.09*	0.04	-0.02	0.04	-0.06	0.04
Parent's Age	0.00	0.03	0.04	0.04	-0.06†	0.03	-0.01	0.03
Employed = 1	0.03	0.03	-0.04	0.03	0.00	0.03	0.01	0.03
Social Support = 1	0.01	0.03	-0.03	0.03	-0.04†	0.03	0.00	0.03
Father has a child by another partner	-0.01	0.03	-0.03	0.03	0.02	0.03	0.02	0.03
Mother has a child by another partner	-0.01	0.03	0.04	0.03	-0.01	0.03	-0.02	0.03
Both parents have a child by another partner	0.00	0.03	0.02	0.03	-0.03	0.03	-0.08*	0.03
Father ever been incarcerated =1	-0.01	0.03	-0.04	0.03	-0.07*	0.03	0.00	0.03
Parent's Health	0.03	0.03	0.04	0.03	-0.05†	0.03	-0.01	0.03
Parent's Impulsivity	-0.02	0.03	-0.04	0.03	0.00	0.03	-0.05	0.03
Relationship Quality	0.12***	0.03	0.07*	0.03	0.12***	0.03	0.16***	0.03
Child's Health	0.07*	0.03	0.01	0.03	0.01	0.03	0.05†	0.03
Child is male = 1	0.02	0.03	0.02	0.03	0.02	0.03	-0.02	0.03
Child Temperament	-0.03	0.03	0.01	0.03	-0.01	0.03	-0.01	0.03
Poverty = 1	-0.01	0.03	-0.01	0.03	0.03	0.03	0.01	0.03

+ p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001



Table 3.11: Negative Binomial Estimates for Control Variables on Depressive Symptoms at Year-3 and Year 5 (All Couples)

Control Variables	Year-1 to Year-3 (N=1052)				Year-3 to Year-5 (N=1181)			
	Mother		Father		Mother		Father	
	b	se	b	se	b	se	b	se
Dep. Symptoms (Lagged)	0.38***	0.04	0.36***	0.06	0.38***	0.04	0.44***	0.06
Cohabitation = 1	0.10	0.23	-0.11	0.23	0.14	0.26	0.33	0.27
Black	0.24	0.24	-0.33	0.24	-0.37	0.25	0.01	0.28
Hispanic	0.02	0.31	-0.13	0.29	-0.07	0.30	0.19	0.36
U.S. Citizen = 1	0.41	0.30	0.05	0.30	-0.01	0.28	0.50	0.37
HS Diploma	-0.16	0.26	0.54*	0.25	0.81**	0.26	0.15	0.28
Some College	0.13	0.29	0.16	0.27	1.09***	0.28	-0.11	0.37
Bachelor's Degree or higher	-0.07	0.41	-0.33	0.40	1.24**	0.37	0.23	0.45
Parent's Age	0.01	0.02	-0.03†	0.02	0.01	0.02	0.02	0.02
Employed = 1	-0.51**	0.18	-0.58*	0.28	-0.33†	0.20	-0.13	0.27
Social Support = 1	0.22	0.18	0.28	0.20	0.81***	0.19	0.31	0.22
Higher order birth = 1	0.08	0.19	0.82***	0.19	0.19	0.21	0.22	0.25
Father has a child by another partner	0.82**	0.24	0.18	0.28	0.59*	0.25	0.03	0.30
Mother has a child by another partner	0.40	0.25	0.25	0.27	-0.18	0.25	-0.53	0.40
Both parents have a child by another partner	0.64*	0.26	0.12	0.30	0.48	0.31	0.53	0.34
Father ever been incarcerated = 1	-0.45†	0.26	0.08	0.23	0.53*	0.23	0.40	0.27
Parent's Health	0.60	0.13	-0.09	0.10	0.01	0.10	-0.33**	0.11
Parent's Impulsivity	0.60***	0.13	0.55***	0.15	0.54**	0.16	0.08	0.19
Relationship Quality	-0.01	0.10	0.25*	0.11	0.03	0.11	-0.32**	0.12
Child's Health	-0.34**	0.11	0.15	0.15	-0.29*	0.11	-0.09	0.13
Child Temperament	-0.15	0.12	-0.16	0.13	0.03	0.12	-0.18	0.15
Poverty = 1	-0.02	0.22	-0.50*	0.23	0.47**	0.22	0.00	0.27

† p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Table 3.12: Standardize Estimates for Control Variables on Coparenting by Race/Ethnicity (Year– 3)

Variables	Black Couples				Hispanic Couples				White Couples			
	Mothers		Fathers		Mothers		Fathers		Mothers		Fathers	
	b	se	b	se	b	se	b	se	b	se	b	se
Coparenting (Lagged)	0.47***	0.05	0.29***	0.05	0.27***	0.05	0.24***	0.05	0.50***	0.04	0.37***	0.05
Cohabitation = 1	0.04	0.05	-0.06	0.06	-0.04	0.05	-0.11†	0.06	0.03	0.06	-0.09	0.07
U.S. Citizen = 1	-0.10†	0.05	0.02	0.05	-0.08	0.05	-0.07	0.06	-0.03	0.04	0.01	0.05
HS Diploma	0.00	0.06	-0.14*	0.06	0.06	0.05	-0.06	0.06	0.10	0.07	0.02	0.08
Some College	0.05	0.07	-0.10	0.07	0.03	0.06	-0.07	0.06	0.07	0.08	-0.07	0.09
Bachelor's Degree or higher	0.07	0.06	-0.02	0.06	-0.03	0.05	-0.12*	0.06	0.06	0.09	-0.09	0.10
Parent's Age	0.00	0.05	-0.09	0.06	0.12*	0.06	0.20**	0.06	-0.05	0.05	0.05	0.06
Employed = 1	0.00	0.05	-0.06	0.05	0.04	0.05	-0.02	0.05	0.06	0.04	0.00	0.05
Social Support = 1	-0.01	0.05	-0.03	0.05	0.02	0.05	0.03	0.06	0.03	0.05	-0.06	0.05
Higher order birth = 1	0.05	0.05	-0.03	0.05	-0.06	0.05	-0.05	0.06	0.01	0.05	0.02	0.05
Father has a child by another partner	-0.03	0.05	-0.01	0.06	0.00	0.05	-0.08	0.05	0.03	0.04	0.00	0.05
Mother has a child by another partner	0.00	0.05	0.06	0.06	0.00	0.06	0.07	0.06	-0.05	0.05	0.00	0.05
Both parents have a child by another partner	0.04	0.05	0.06	0.06	-0.08	0.05	0.00	0.06	-0.04	0.05	0.03	0.05
Father ever been incarcerated =1	0.02	0.05	0.02	0.05	-0.12*	0.05	-0.06	0.05	0.10*	0.05	-0.14**	0.05
Parent's Health	0.10*	0.05	0.05	0.06	-0.10†	0.05	0.11*	0.05	0.01	0.05	-0.01	0.05
Parent's Impulsivity	-0.02	0.05	-0.08	0.05	-0.03	0.05	-0.02	0.05	-0.01	0.04	-0.03	0.05
Relationship Quality	0.03	0.05	0.07	0.05	0.20***	0.05	0.03	0.06	0.21***	0.05	0.11†	0.06
Child's Health	0.11*	0.05	-0.03	0.05	0.05	0.05	0.08	0.05	-0.04	0.04	0.05	0.05
Child is male = 1	-0.03	0.05	-0.04	0.05	-0.02	0.05	0.10*	0.05	0.14**	0.04	0.00	0.05
Child Temperament	-0.01	0.05	0.01	0.05	-0.10*	0.05	-0.03	0.05	-0.01	0.04	0.03	0.05
Poverty = 1	0.01	0.05	-0.10†	0.06	-0.08	0.05	0.04	0.05	0.03	0.05	0.11*	0.05

+ p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Table 3.13: Standardize Estimates for Control Variables on Coparenting by Race/Ethnicity (Year– 5)

Variables	Black Couples				Hispanic Couples				White Couples			
	Mothers		Fathers		Mothers		Fathers		Mothers		Fathers	
	b	se	b	se	b	se	b	se	b	se	b	se
Coparenting (Lagged)	0.46***	0.05	0.36***	0.05	0.33***	0.07	0.27***	0.06	0.54***	0.07	0.41***	0.11
Cohabitation = 1	-0.04	0.06	-0.01	0.05	-0.04	0.05	0.06	0.05	-0.02	0.06	-0.05	0.06
U.S. Citizen = 1	-0.03	0.03	-0.02	0.05	0.02	0.05	-0.08	0.07	0.00	0.04	-0.01	0.04
HS Diploma	-0.03	0.06	0.09	0.06	-0.01	0.05	-0.07	0.05	0.00	0.08	0.07	0.08
Some College	-0.10	0.06	0.04	0.06	0.00	0.05	-0.04	0.06	0.01	0.10	-0.01	0.10
Bachelor's Degree or higher	-0.09	0.07	-0.03	0.06	0.04	0.04	0.01	0.04	-0.01	0.12	-0.02	0.12
Parent's Age	-0.02	0.06	-0.04	0.06	-0.11†	0.06	0.07	0.06	-0.02	0.06	-0.01	0.05
Employed = 1	-0.07	0.05	-0.13*	0.05	0.01	0.05	0.15*	0.07	0.07†	0.04	0.02	0.04
Social Support = 1	-0.01	0.05	0.02	0.05	-0.15*	0.06	0.01	0.06	-0.02	0.05	-0.02	0.05
Higher order birth = 1	0.08	0.05	0.09†	0.05	-0.07	0.05	0.04	0.06	0.03	0.05	-0.02	0.05
Father has a child by another partner	-0.01	0.05	0.08†	0.05	0.01	0.05	-0.04	0.06	-0.09†	0.05	-0.02	0.06
Mother has a child by another partner	0.00	0.05	0.01	0.05	0.04	0.05	-0.02	0.05	0.02	0.04	-0.06	0.05
Both parents have a child by another partner	-0.06	0.05	-0.04	0.06	0.03	0.06	-0.11	0.07	0.01	0.04	-0.08	0.06
Father ever been incarcerated = 1	-0.09	0.05	-0.06	0.05	-0.09	0.06	0.02	0.05	-0.08	0.06	0.02	0.06
Parent's Health	-0.05	0.04	0.00	0.05	0.00	0.06	0.01	0.05	-0.08*	0.04	-0.05	0.05
Parent's Impulsivity	0.05	0.05	-0.05	0.04	-0.08	0.05	-0.09†	0.05	0.01	0.05	0.02	0.06
Relationship Quality	0.10*	0.05	0.16***	0.05	0.16**	0.06	0.12*	0.06	0.05	0.06	0.21***	0.06
Child's Health	0.02	0.04	0.08	0.05	0.02	0.05	0.07	0.06	-0.01	0.04	0.02	0.04
Child is male = 1	0.02	0.04	-0.06	0.04	0.01	0.05	0.03	0.05	0.04	0.04	-0.01	0.04
Child Temperament	-0.06	0.05	0.00	0.05	0.02	0.05	0.01	0.05	0.02	0.04	-0.04	0.04
Poverty = 1	0.04	0.04	-0.09	0.05	0.02	0.05	0.06	0.05	-0.03	0.06	0.09*	0.04

+ p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Table 3.14: Negative Binomial Coefficients for Control Variables on Depressive Symptoms by Race/Ethnicity (Year– 3)

Variables	Black Couples				Hispanic Couples				White Couples			
	Mothers		Fathers		Mothers		Fathers		Mothers		Fathers	
	b	se	b	se	b	se	b	se	b	se	b	se
Dep. Symptoms (Lagged)	0.31***	0.07	0.56***	0.12	0.42***	0.09	0.20†	0.11	0.53***	0.08	0.50***	0.11
Cohabitation = 1	-0.34	0.30	-0.23	0.34	0.00	0.47	-0.33	0.36	0.53	0.45	0.62	0.52
U.S. Citizen = 1	1.28	0.82	1.84†	0.99	0.47	0.38	0.20	0.40	0.22	0.64	-0.45	0.52
HS Diploma	0.00	0.38	0.80*	0.35	-0.08	0.40	0.40	0.39	-0.70	0.84	0.76	0.50
Some College	-0.08	0.42	0.39	0.41	-0.43	0.55	1.12*	0.46	0.34	0.79	-0.05	0.50
Bachelor's Degree or higher	-0.72	0.68	-1.25	0.93	2.00**	0.73	0.98	0.73	-0.70	0.90	-0.27	0.59
Parent's Age	-0.03	0.03	-0.03	0.02	0.02	0.03	0.00	0.03	0.07†	0.04	-0.05	0.03
Employed = 1	-0.19	0.26	-0.21	0.32	-1.12**	0.35	-0.43	0.55	-0.60*	0.29	-1.67*	0.69
Social Support = 1	0.28	0.24	-0.04	0.26	0.09	0.35	0.74†	0.39	0.12	0.30	0.84*	0.35
Higher order birth = 1	0.23	0.26	0.34	0.28	-0.83*	0.36	0.64†	0.33	0.39	0.36	1.823***	0.36
Father has a child by another partner	0.61†	0.36	0.12	0.44	1.26†	0.40	0.44	0.54	0.78	0.55	-0.75	0.50
Mother has a child by another partner	0.26	0.36	-0.53	0.38	1.30**	0.52	0.68	0.47	-0.07	0.48	0.74	0.50
Both parents have a child by another partner	0.96*	0.38	-0.35	0.42	0.95†	0.54	-0.48	0.66	0.15	0.75	-0.12	0.60
Father ever been incarcerated =1	-0.89**	0.31	0.17	0.34	0.44	0.40	0.90†	0.46	-0.77	0.95	0.42	0.44
Parent's Health	-0.252†	0.13	0.26	0.15	-0.26	0.17	-0.12	0.19	0.01	0.21	-0.56**	0.18
Parent's Impulsivity	0.60***	0.17	0.76***	0.21	0.49*	0.25	0.50*	0.25	0.70*	0.24	0.40	0.30
Relationship Quality	0.02	0.13	0.18	0.13	0.04	0.17	0.47*	0.22	0.03	0.24	0.37	0.28
Child's Health	-0.28†	0.16	0.53**	0.19	-0.32*	0.15	0.19	0.20	-0.54*	0.25	0.17	0.35
Child Temperament	-0.05	0.18	0.22	0.18	-0.16	0.20	-0.04	0.23	-0.20	0.22	-0.88**	0.27
Poverty = 1	-0.12	0.28	0.00	0.31	-0.27	0.34	-0.25	0.34	0.99	0.78	-2.85***	0.69

+ p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

Table 3.15: Negative Binomial Coefficients for Control Variables on Depressive Symptoms by Race/Ethnicity (Year– 5)

Variables	Black Couples				Hispanic Couples				White Couples			
	Mothers		Fathers		Mothers		Fathers		Mothers		Fathers	
	b	se	b	se	b	se	b	se	b	se	b	se
Dep. Symptoms (Lagged)	0.24*	0.10	0.19	0.12	0.23	0.15	0.21*	0.10	0.36†	0.20	0.28	0.18
Cohabitation = 1	0.08	0.19	0.13	0.17	-0.03	0.18	0.08	0.13	0.41	0.56	-0.10	0.26
U.S. Citizen = 1	-0.21	0.24	0.08	0.12	-0.17	0.17	0.27	0.18	0.31	0.28	-0.11	0.23
HS Diploma	0.11	0.24	-0.02	0.18	0.20	0.20	-0.15	0.12	-0.16	0.30	0.11	0.25
Some College	0.33	0.24	-0.10	0.20	0.08	0.19	0.10	0.22	-0.01	0.30	0.17	0.25
Bachelor's Degree or higher	0.29	0.37	-0.09	0.20	1.04	0.69	-0.07	0.22	-0.11	0.26	0.16	0.35
Parent's Age	-0.02	0.08	0.02	0.03	-0.05	0.19	0.02	0.01	0.05	0.08	0.02	0.01
Employed = 1	-0.20	0.22	-0.14	0.25	-0.01	0.20	0.24	0.17	-0.07	0.14	-0.63†	0.38
Social Support = 1	0.25	0.19	0.42	0.52	0.58†	0.30	0.10	0.14	0.23	0.22	-0.01	0.11
Higher order birth = 1	0.09	0.32	0.11	0.16	0.08	0.17	0.07	0.15	-0.12	0.16	-0.11	0.10
Father has a child by another partner	0.01	0.21	-0.13	0.18	0.35	0.26	-0.21	0.21	0.23	0.44	0.47	0.29
Mother has a child by another partner	0.02	0.19	-0.14	0.16	-0.10	0.48	-0.08	0.13	-0.28	0.29	-0.09	0.17
Both parents have a child by another partner	0.01	0.25	0.29	0.24	0.68	0.49	-0.19	0.23	-0.24	0.44	-0.02	0.31
Father ever been incarcerated =1	0.68†	0.40	0.20	0.22	-0.27	0.24	-0.19	0.15	-0.14	0.31	0.14	0.30
Parent's Health	-0.12	0.10	-0.09	0.15	0.11	0.09	-0.03	0.05	0.02	0.10	-0.18*	0.09
Parent's Impulsivity	0.21	0.13	-0.02	0.13	0.17	0.20	0.21†	0.12	-0.05	0.20	-0.01	0.12
Relationship Quality	0.01	0.10	-0.05	0.09	0.01	0.10	-0.11	0.08	-0.03	0.18	0.01	0.69
Child's Health	-0.08	0.20	-0.09	0.10	-0.09	0.10	0.07	0.09	-0.40*	0.17	-0.10	0.12
Child Temperament	0.04	0.13	0.03	0.09	0.10	0.10	-0.01	0.11	-0.05	0.10	-0.08	0.14
Poverty = 1	-0.08	0.18	-0.11	0.17	0.28	0.21	0.05	0.11	0.43	0.50	-0.27	0.27

+ p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001

## CHAPTER IV

### *Parents' Parenting Stress and Relationship Quality Over Time: The Role of Poverty*

#### **INTRODUCTION**

The birth of a child is a joyous and exciting occasion for many parents, and having a child contributes to parents' overall life satisfaction and happiness (Nelson et al. 2013). Yet, extant research suggests that the demands of parenting young children result in two general outcomes: (1) an increase in parental stress or distress (Crnic, Low, and Bornstein 2002; Evenson and Simon 2005; Umberson, Pudrovska, and Reczek 2010) and (2) a decrease in relationship quality between intimate partners (Lavee 2013; Randall and Bodenmann 2009; Umberson and Reczek 2007). The general argument is that the day-to-day hassles of parenting result in elevated levels of stress and strain in the parenting role, and as parents adjust to the needs of their child, it is often at the expense of the mother-father relationship leading to declines in relationship quality and satisfaction. Both parenting stress and relationship quality are critically important given the impact these factors have on broader family processes and children's well-being (Benzies, Harrison, and Magill-Evans 2004; Crnic, Gaze, and Hoffman 2005; Cui, Donnellan, and Conger 2007). Although prior studies have examined the parenting stress and relationship quality nexus (Lavee, Sharlin, and Katz 1996; Quittner, Glueckauf, and Jackson 1990), these studies have been limited to small, homogenous samples. Moreover, prior research has either examined the link between stress in the parenting role and its effect on the quality of intimate relationships, or how supportive partners help to reduce parenting stress. As a consequence, the direction of the association remains unclear. Thus, the purpose of the

current study is to examine parenting stress and couple's relationship quality as a longitudinal and reciprocal process among couples five years after the birth of a child.

The longitudinal and reciprocal association between parenting stress and couple's relationship quality may change as children develop over time. Developmental and life-course perspectives highlights that the birth of a child tend to set the stage for complex family dynamics whereby parental stress, intimate relationships, and children change in tandem (e.g., Umberson et al. 2010). Specifically, prior research suggests that, when children are young, parenthood tends to be more stressful and often create strain between partners because early childhood is more demanding; however, as children grow older, both stress in parenting and relationship strain gradually dissipates (Nomaguchi and Milkie 2003; Umberson, Williams, Powers, Chen, et al. 2005).

Parenting stress refers to the extent to which parents perceive that their parental demands exceed familial and social resources to meet those demands (Abidin 1992). As such, economic disadvantage makes the parenting role especially challenging by further exacerbating stressful conditions. Factors such as poverty and economic hardship reflect the lack of financial and material resources that hinder families from accessing basic needs (e.g. food, housing, health care, etc.). As a result, many parents become frustrated and overwhelmed leading to negative parenting behaviors (McLeod and Shanahan 1993; McLoyd 1995) and conflict between partners (Hardie and Lucas 2010). Prior research has highlighted the ways in which poverty affects both parenting stress and relationship quality (Cunradi et al. 2000; Middlemiss 2003; Raikes and Thompson 2005). Many of these studies, however, have examined families in poverty using cross-sectional data. Consequently, prior research inherently conceals poverty fluctuations or histories (i.e.,

poverty entries and exits) that many families experience over time (e.g., Edin and Kissane 2010). Understanding the association between parenting stress and couple's relationship quality longitudinally in the context of families' continual and temporal poverty experiences as children develop paints a more holistic picture of stress in the parenting role, couples, and economic inequality. Thus, the present study, using data from the Fragile Families and Child Well-being Study (FFCW), addresses the following questions: (1) is there a longitudinal and reciprocal association between parenting stress and relationship quality; (2) does the association change over time as children age from infant to toddler, and from toddler to preschooler; and (3) does the association vary across families' poverty histories?

## **LITERATURE REVIEW**

### ***Theoretical Perspective***

The current study draws on two theoretical perspectives and additional empirical studies that highlight the association between parenting stress and couple's relationship quality. First, I rely on the stress spillover hypothesis (Bolger et al. 1989; Larson and Almeida 1999; Neff and Karney 2007) to understand the how stress in one familial domain (e.g., parenting) affects another domain (e.g., mother-father relationship quality). Stress spillover contends that family roles can generate stress, subsequently creating a contagion of stressful experiences that affects the well-being of couple dyads. Second, I draw on parenting stress research (Abidin 1992; Crnic et al. 2002) which suggests that stress in the parenting role is associated with parent, child, and situational factors. Similar to prior research, the present study focuses on supportive relationship quality between intimate partners as a situational factor (e.g., Bronte-Tinkew, Horowitz, and Carrano 2010). Being in a supportive relationship refers to the extent to which individuals in intimate



partnerships receive emotional sustenance (i.e., love, care, support, etc. Cutrona 1996), which works as an important resource that buffers stress (e.g., Lavee 2013). Taken together, the theoretical perspectives highlight the interdependent nature of families (Cox and Paley 1997; O'Brien 2005), the importance of stress in intimate relationships (Umberson and Reczek 2007), and the determinants and consequences of parenting stress (Abidin 1992). Figure 4.1 presents the conceptual model and is used for the review of research (outlined below) and orientates the hypothesized association between constructs guiding the empirical analyses.

<INSERT FIGURE 4.1 ABOUT HERE>

### ***Parenting Stress and the Quality of Mother-Father Relationships***

Stress, parenthood, and the quality of intimate relationships has been a concern for many scholars (Lavee 2013; Randall and Bodenmann 2009; Umberson and Reczek 2007; Umberson et al. 2005). Although stress is conceptualized and operationalized in different ways across studies, the general conclusion is that stress negatively impacts individuals and families. Stress in the parenting role, which is distinct from work stress and marital stress, has important implications for parent, child, and family functioning (e.g., Belsky 1984). Parenting stress is the result of the combination of individual, couple, child, and contextual factors that directly affects the parenting role (Abidin 1992). In some instances, parental stress may interfere with the quality of the intimate partnership between parents. As parents adjust to and deal with the demands and challenges of parenthood, a significant amount of emotional and physical energy is dispensed (Deater-Deckard 2008). Subsequently, intimate partners begin to show less intimacy, become less supportive, and spend less time together (Cowan and Cowan 2000; Kirby, Baucom, and Peterman 2005), which, in turn, affects the quality and stability of the intimate

partnership (e.g., Bradbury, Fincham, and Beach 2000) which is represented in Figure 4.1, Path A.

Prior research shows that stress in the parenting role is associated with a decrease in relationship quality between partners. For example, in a sample of 287 married Israeli couples, Lavee, Sharlin, and Katz (1996) found that mother's and father's parenting stress was associated with lower levels of marital quality. In a study of resident fathers, Bronte-Tinkew, Horowitz, and Carrano (2010) revealed that paternal parenting stress was associated with less supportive coparenting between mothers and fathers. Quittner, Glueckauf, and Jackson (1990) found that parenting stress lowered mothers' perceptions of emotional support. Additional research on the transition to parenthood and parents with children with disabilities and health problems (mental and physical) gives credence to the negative association between parenting stress and couple's relationship quality (e.g., Gupta 2007; Schulz, Cowan, and Cowan 2006).

### ***The Quality of Mother-Father Relationships and Parenting Stress***

The quality of intimate relationships have important implications for family functioning that affect both individual and family well-being (Bradbury, Fincham, and Beach 2000; Fincham and Beach 2010a). Relationship quality between partners can be positive (e.g., supportiveness) or negative (e.g., conflict; Fincham and Beach 2010b). The current study examines a positive dimension of relationship quality. In many ways, positive relationship quality is similar to the notion of partner support. Couples in a supportive relationship offer each other important emotional sustenance and coping resources (Lavee 2013) that can be extremely helpful to reduce the effects of stressful situations as indicated in Figure 4.1, Path B. For many intimate partners, the feeling of support,

respect, and love (Cutrona 1996; Don and Mickelson 2012) leads to better psychological well-being and parental adjustment (Thoits 2011; Umberson and Montez 2010).

Supportive relationships may be especially true for couples after the birth of a child given the stress associated with having young children (e.g., Umberson et al. 2010).

Although prior studies have not explicitly examined the association between couple's relationship quality and parenting stress per se, research shows that partner's social support lowers parenting stress. For example, in a study of mothers and infants, Mulsow et al. (2002) found that intimacy between partners (e.g., my spouse/partner can really understand my hurts and joys, etc.) and general social support reduced parenting stress. Also, in a sample of Swedish mothers, Ostberg and Hagekull (2000) discovered that parents with higher levels of support were associated with less stress in parenting. In contrast, Raikes and Thompson (2005), in a sample of 65 low-income mothers, revealed no significant association between social support and parenting stress. Nevertheless, many prior studies support the notion that a positive, supportive partner serves as a buffer against stress in parenting (e.g., Wadsworth 2012). Studies also show that parents in supportive relationships tend to display positive parenting behaviors (Green, Furrer, and McAllister 2007) and feel positive about parenting (Suarez and Baker 1997). Similarly, low levels of support are associated with higher levels of parenting stress (Gelfand, Teti, and Radin Fox 1992; Ostberg and Hagekull 2000). Based on the reviewed research above, I expect a mutual influence between parenting stress and couple's relationship quality over time. Specifically, I present the following hypotheses:

*H1: Early parenting stress levels will be associated with lower levels of couple's relationship quality for both mothers and fathers over time.*

H2: *Early couple's relationship quality levels will be associated with higher levels of parenting stress both mothers and fathers over time.*

### ***Changes in the Associations as Children Develop Over Time***

Although prior studies have examined changes in both parenting stress and relationship quality over time (Putnick et al. 2010; Umberson et al. 2010; Umberson, Williams, Powers, Liu, et al. 2005), these studies have been investigated in isolation of each other. Thus, we know less about the potential longitudinal and reciprocal effects between parenting stress and relationship quality as children develop. One may expect that during the early stages of development—from infant to toddler—may be the most stressful and straining for parents (in comparison with toddler to preschooler). Specifically, during the early years, children need more attention (feeding, changing diapers, etc.), and thus require more parental time and energy (e.g., Nomaguchi and Milkie 2003) which leads to elevated stress and strain. Thus, parental stress may be more influential in lowering couple's relationship quality during the infant to toddler years compared to the toddler to preschool year. Likewise, being in a positive supportive relationship may matter more in reducing stress during the early developmental stages compared to the later stages. More explicitly, I present the following hypothesis:

H3: *The longitudinal and reciprocal effects between parenting stress and couple's relationship quality will be stronger for both parents from Year-1 to Year-3 than from Year-3 to Year-5*

### ***Living in (and out) of Poverty***

Poverty has several deleterious consequences for families and children (Conger, Conger, and Martin 2010; Edin and Kissane 2010). The extent to which families experience poverty, however, is complex. Specifically, with the availability of longitudinal data, the empirical evidence suggests that poverty is a dynamic process whereby families undergo stability and change in poverty experiences (Cellini, McKernan, and Ratcliffe 2008; Edin

and Kissane 2010). For example, results from the Survey of Income and Program Participation (SIPP) revealed that from 2009 to 2011, only 3.5 percent of people lived in poverty; of people who were poor in 2009, 5.4 percent remained poor in 2011; and, of the people who were in poverty in 2009, 35.4 percent were not in poverty in 2011 (Edwards 2014). Indeed, these statistics confirm the continuity and change in the experiences of poverty histories for many families.

Although prior studies have examined how poverty and other indices of economic disadvantage affect stress in the parenting role and relationship quality (e.g., Hardie and Lucas 2010; Raikes and Thompson 2005), many studies have been limited by cross-sectional data. This is surprising given the deleterious effects that both persistent poverty and changes in poverty have on families (Corcoran and Chaudry 1997; Edin and Kissane 2010). Thus, the present study examines the longitudinal and reciprocal effects of parenting stress and relationship quality across three poverty groups: (a) no poverty, (b) transient poverty, and (c) persistent poverty. The extent to which poverty affect these familial processes are described below.

The potential moderating effect of families' poverty histories on the association between stress in the parenting role and relationship quality may work differently (or similarly) across families as shown in Figure 4.1, Paths C and D. On the one hand, parenting stress may be salient for all parents, regardless of socioeconomic status. Given that parenthood is stressful even under the most optimal conditions (Rodriguez-JenKins and Marcenko 2014), the quality of intimate partnerships may be vulnerable to parental stress for all couples, thus leading to no differences between families across poverty groups. Prior research using samples of middle-class parents (e.g., Crnic et al. 2005;

Deater-Deckard and Scarr 1996) and low-income parents (e.g., Middlemiss 2003; Raikes and Thompson 2005) shows that parenting stress leads to unfavorable outcomes for both family types. Similarly, being in a supportive relationship may help to reduce stress in the parenting role for all families. Indeed, supportive partners serve as a valuable resource to aid individuals to cope with different forms of stress and distress (Lavee 2013; Turner, Turner, and Hale 2014). As a result, regardless of families' poverty histories, all couples in a positive, healthy relationship may reap the benefits of supportive resources that intimate partners provide.

On the other hand, poverty may further exacerbate stress in the parenting role as families lack the resources to deal with stressful events associated with parenting (Wadsworth 2012). As a result, families living in poverty may experience an increase in stress and strain that often manifest itself through less than optimal parenting practices and generate conflict between partners (Hardie and Lucas 2010; Kotchick, Dorsey, and Heller 2005). Simply put, poverty tends to amplify other stressors, making bad situations worse. In regards to couples' relationship quality, having a positive, supportive partner may be more helpful for families in poverty than families experiencing no poverty. More specifically, strong partner support in the context of economic disadvantage may help to generate higher levels of self-efficacy (Green et al. 2007) leading to more positive parenting (Coleman and Karraker 1998). Some studies show, however, that supportive relationships may not be as effective for families in poverty (Raikes and Thompson 2005) as many members of the same support network may also be experiencing similar stressful events (e.g., Ceballo and McLoyd 2002) rendering social support less effective. That is,

although supportive relationships may serve as an important resource for some families, it is no panacea (e.g., Wadsworth 2012).

Taken together, the research presented above paints a complicated picture on the ways poverty may moderate the association between parenting stress and couples' relationship quality. Given that poverty generates its own stress within families (Wadsworth 2012), the longitudinal and reciprocal association between parenting stress and relationship quality may be more detrimental for families who live in transient or persistent poverty compared to families who experience no poverty. Alternately, stress in the parenting role may be challenging for all parents, regardless of socioeconomic status, leading to lower levels of couple's relationship quality across families' poverty histories. Moreover, being in a positive, support relationship may be a valuable resource for all families. Thus, the longitudinal and reciprocal association between parenting stress and relationship quality may yield no differences between families across poverty histories. Given the equally important ways poverty may (or may not) affect parental stress and couples' relationship quality, no specific hypothesis is offered on the differences (or similarities) across poverty groups.

### ***Additional Factors***

The current study employs several control variables that are associated with both parenting stress and couple's relationship quality. Indeed, scholars have noted that parents, child, and contextual factors contribute to parenting stress (Deater-Deckard 2008) and relationship quality (Bradbury and Karney 2004). Thus, the current study adjusts for such factors. For instance, parenting stress may vary between union types (e.g., married versus cohabiting parents; Cooper et al. 2009) and studies show that

married couples display higher levels of relationship quality (Brown and Booth 1996) compared to cohabiting parents. Race and ethnic minorities report higher levels of parenting stress (Nomaguchi and House 2013) and lower levels of relationship quality (Bulanda and Brown 2007) compared to white couples. Age is associated with stress in the parenting role (Ostberg and Hagekull 2000) and relationship quality over time (Umberson, Williams, Powers, Chen, et al. 2005). Education (Cooper et al. 2009), employment status (Gyamfi, Brooks-Gunn, and Jackson 2001), parents' mental and physical health (Crnic and Acevedo 1995) are associated with parenting stress and relationship quality. Social support (from family and friends) has been linked to lower levels of parenting stress (Lavee 2013) and associated with an increase in relationship quality (Cutrona 1996). The number of children affects both parenting stress and relationship quality (Lavee et al. 1996), birth order is associated with parenting stress (Krieg 2007), multi-partnered fertility, incarceration is associated with stress in the parenting role (Loper et al. 2009) and strains couple's relationship quality (Lopoo and Western 2005). In addition, child characteristics such as child's sex, temperament, and physical health is associated with parenting stress (Crnic et al. 2002; McBride, Schoppe, and Rane 2002). These factors are adjusted for in the analyses (see Tables 4.9 through 4.16).

## **METHODS**

### ***Data***

Data for this study are from the Fragile Families and Child Well-being Study (FFCW). The FFCW is a nationally representative, longitudinal study that follows an urban birth cohort of 4,898 children and their parents (3,712 unmarried and 1,186 married births) in 20 U.S. cities with populations of 200,000 or more. The study is based on a stratified,



multistage probability sample with an oversample of unmarried births in urban cities. The study began 1998-2000 and contains 4,898 mothers and 3,830 fathers. At baseline, mothers were interviewed in person while in the hospital within 48 hours of the birth, and fathers were interviewed in person or by phone once he was located (for more detailed information, see Reichman et al. 2001). Parents were re-interviewed when the child was one, three, and five years of age. The response rate for eligible mothers and fathers at baseline was 86% and 78%, respectively. Subsequent 1-, 3-, and 5-year follow-ups yielded 90%, 88%, and 87% response rates for eligible mothers, and 74%, 72%, and 70% for eligible fathers (Bendheim-Thomas Center on Child Wellbeing 2008).

The sample includes couples (biological mothers and fathers of the focal child) who were living together (either married or cohabiting) at the baseline survey and remained in the subsequent surveys and has no missing values on the focal variables. All survey waves are used; however, the main analyses are based on the 1-, 3-, and 5-year follow-up surveys because the focal variables (i.e., parenting stress and relationship quality) were measured at the 1-, 3-, and 5-year surveys only. The selection criteria of the sample for the data analyses are parents who were either married or cohabiting from the 1-year to the 3-year surveys, and from the 3-year to the 5-year surveys. This is done in order to maintain couples who were romantically involved consistently over all survey years.

As a result of the selection criteria, of the couples living together at the 1-year follow-up (N = 2, 341), 347 cases were dropped (15%) from the sample because either the mother or father was not interviewed at the 3-year survey, 317 cases (14%) were dropped because the parents ended their relationship between the 1- and 3-year surveys,

and 397 cases (17%) were dropped because information on parenting stress and relationship quality were missing. This resulted in a sample of 1,280 (55%). For couples who were living together at the 3-year follow-up (N=2,032), 324 cases (16%) were dropped because either mother or father were not interviewed at the 5-year follow-up, 288 cases (14%) because the relationship ended between the 3- and 5-year waves, and 141 cases (7%) because of missing data on parenting stress and relationship quality. This resulted in a sample of 1,279 (63%) couples who were romantically involved and consistently living together over 3- and 5-year follow-up surveys. Taken together, the final sample resulted in 942 couples (mothers and fathers) across the 1-, 3-, and 5-year follow-up surveys. Given that the random and fixed effects models (see Analytic Strategy below) pooled cases across survey years, parents were observed at multiple time points which results in 2,826 person-year observations.

In analyses of attrition, the excluded cases were more likely to be racial/ethnic minorities, somewhat younger, and had lower levels of education compared to parents who remain in the sample (see Tables 4.5 through 4.8). Comments about potential implications of attrition are in the Discussion section. To maximize sample size, multiple imputation technique was employed to impute missing data on the covariates, but not the focal variables for which Full Information Maximum Likelihood (FIML) was used (Acock 2005; Allison 2002; Enders and Bandalos 2001). Ten multiple imputation data sets were constructed using imputation by chained equations in Stata and then the analyses were conducted and combined using Rubin's rules (Rubin and Little 2002) in Mplus. City sampling weights are used for the descriptive statistics to adjust for oversampling of nonmarital births but not for the analyses because the study controls for

key characteristics associated with the weights (e.g., marital status at the birth of the child, age, race, and education; see Winship and Radbill 1994).

### *Measures*

#### **Parenting Stress**

Parenting stress was measured at the 1-, 3-, and 5-year follow-up surveys using four items adapted from the Parenting Stress Index developed by Abidin (1983). The FFCW study used a short form to identify stress in parenting. Mothers ( $\alpha = .56, .59, \text{ and } .64$ ) and fathers ( $\alpha = .58, .61, \text{ and } .61$ ) were asked about their agreement (1 = *strongly disagree* to 4 = *strongly agree*) to four questions about parenting at Year-1, 3, and 5, respectively: (1) “Being a parent is harder than I thought it would be,” (2) “I feel trapped by my responsibilities as a parent,” (3) “I find that taking care of my child(ren) is much work than pleasure,” and (4) I often feel tired, worn out, or exhausted from raising a family.” Higher scores reflect higher levels of parenting stress. Despite the modest alpha scores, these items have been employed elsewhere (e.g., Bronte-Tinkew et al. 2010; Cooper et al. 2009).

#### **Relationship Quality**

Relationship quality was measured at the 1-, 3-, and 5-year follow-up surveys using five items. Mothers and fathers were asked identical questions about the frequency of their partner in the following supportive ways: (1) “is fair and willing to compromise when you have a disagreement,” (2) “expresses affection or love for you,” (3) “encourages or helps you to do things that are important to you,” (4) “listens to you when you need someone to talk to,” and (5) “really understands your hurts and joys.” Response choices range from (1) never to (3) often. The identical items for mothers and fathers were combined to create a dyadic measure ( $\alpha = .76, .77, \text{ and } .80$ ) for Year-1, 3, and 5,

respectively. Further, the combined items were averaged with higher scores reflect higher levels of supportive relationship quality. This measure is similar to a prior study using the FFCW study (e.g., Carlson et al. 2011).

### **Poverty Histories**

Poverty histories were gauged using mothers' reports at the baseline, 1-, 3-, and 5-year follow-up surveys using the household income-to-needs ratio based on official U.S. poverty thresholds from the Census Bureau which is adjusted by family size, family composition, and year. A ratio of 1 or less indicated that the family lived in poverty. Thus, the poverty measure was dichotomized to indicate (0) not in poverty and (1) in poverty. The items were summed across the four survey years (i.e., baseline, 1-, 3-, and 5-year follow-up years) to create an index ranging from 0 (not in poverty) to 4 (live in poverty across the four survey years). Further, the item was collapsed into three categories to gauge poverty histories: no poverty, transient poverty (experience poverty once or twice), and persistent poverty (experienced poverty three or four times).

### **Control Variables**

Control variables were included in all statistical models (described above) that are expected to be associated with parenting stress and couple's relationship quality. Identical measures were used for both mothers and fathers at the baseline survey (unless otherwise specified). *Marital status* was measured by a dichotomous variable with (0) indicating married (reference group) and (1) indicating cohabitation. Race/ethnicity was gauged (using mother's self-report) by a series of dummy variables reflecting non-Hispanic white (reference), non-Hispanic Black, Hispanic, and non-Hispanic other. A dichotomized measure of mixed race couples was also included. Mothers and fathers' *age* was measured (in years) as continuous variables. Mothers and fathers' *education* level was

measured using four categories: (1) less than high school (reference), (2) high school or equivalent, (3) some college or tech training, and (4) college graduate or more. *Physical health* (measured at the 1-year follow-up for parents and child) was measured by asking parents the following question: “In general, how is your health?” Mothers reported child’s health with responses ranging from (1) poor to (5) excellent. Both parents’ *mental health* was gauged using the Composite International Diagnostic Interview Short Form (CIDI-SF) to indicate feelings of dysphoria or anhedonia—a dummy variable was employed to represent having met the criteria. *Employment status* was measured with a dichotomous item indicating whether each parent “Did any regular work for pay last week?” Response were (0) no and (1) yes.

*Social support* was measured with a dichotomous question (0=no, 1=yes) asking both parents “since child was born, have you received any financial help or money from anyone other than [partner]?” Mothers reported on fathers’ *incarceration history* (at the 1-year follow-up) indicating whether fathers have ever been in jail or prison (0=no, 1=yes). Mothers reported the *number of children in the household* at the 1-year follow-up. Parents’ fertility history was gauged with two separated measures: First, a measure was created to indicate whether the focal child is a *higher order birth or first birth* (0=first birth, 1=higher order birth). Second, a measure was created to indicate a series of dummy variables indicating *multipartnered fertility* (at 1-year follow-up) which reflects whether mothers and fathers reported having a child with another partner: neither parent has a child by another partner (reference), father has child by another partner only, mother has child by another partner only, and both parents has a child by another partner. The study also takes into account additional child characteristics such as child’s *sex*

(boy=1) and *temperament*—which is measured by 6-items that gauges the difficulty of a child's temperament with higher scores indicating higher levels of difficult temperament.

### ***Analytic Strategy***

The current study uses several analytic techniques to address the longitudinal and dyadic association between parenting stress and relationship quality. Each technique takes advantage of the longitudinal design of the data with repeated measures spanning over three years. First, random effects models are employed to examine the association between parenting stress and relationship quality, and vice versa. Random effects model assumes that the variation across individuals is random and uncorrelated with the independent variables included in the model, capturing variation between and within respondents. Second, fixed effects models are also used to test the research hypothesis in the current study. Fixed effects models, unlike random effects, takes into account time-invariant factors (e.g., race/ethnicity), which only account for the variation within respondents. Although supplementary analysis (i.e., Hausman test) suggests that the model favors fixed effects over random effects, the parameter estimates are shown to allow the reader to see the extent to which the magnitude of the association changes between models (for a detailed explanation of fixed and random effects models, see Greene 2010). Third, cross-lagged path models are used to examine the directionality of parenting stress and relationship quality. More specifically, is early parenting stress associated with later relationship quality, or vice versa, or both? Last, the aforementioned models were re-estimated across the different family experiences of poverty (no poverty, transient poverty, persistent poverty). For each analytic technique, the parameter estimates, for the focal variables (i.e., parenting stress and couple's relationship quality)

are standardized which indicates that a change in the independent variable is associated with a standardized change in the dependent variable.

## RESULTS

### *Descriptive Statistics*

Table 4.1 shows the descriptive statistics for the variables in the study for all couples and by poverty histories (the statistics are weighted by city sampling weights). A substantial amount of cohabiting couples experienced both transient and persistent poverty.

Moreover, couples living in transient or persistent poverty were more likely to be from a race/ethnic minority group, have lower levels of education, tend to be younger, and reported lower levels of physical health compared to couples who did not experience poverty over the four survey years. Mothers living in persistent poverty were more likely to be unemployed (83%) compared to mothers who experienced no poverty and transient poverty. Fathers who experienced transient and persistent poverty were more likely to ever been incarcerated (15% and 11%, respectively) compared to fathers who experienced no poverty.

Table 4.2 provides the means for parenting stress and couple's relationship quality with indications of significant differences by poverty histories (weighted ANOVA)<sup>2</sup>. The results show that mothers reported relatively low levels of parenting stress and no significant differences emerged between mothers across poverty histories. Fathers also reported lower levels of parenting stress but some differences emerged between fathers across poverty histories. For example, fathers who experienced no poverty across survey years reported significantly higher levels of parenting stress (mean score of 2.08) than

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<sup>2</sup> The F-Test results vary across variables. For mothers, the F-Test results for parenting stress was non-significant across the survey years. The F-Test results for paternal parenting stress and couple's relationship quality were significant ( $p < .05$ ).

fathers who experienced transient poverty (2.23) but higher levels than fathers who experienced persistent poverty (1.90) at the Year-1 survey. No significant differences emerged during the Year-3 survey. For Year-5, fathers who lived in no poverty (2.02) had a significantly higher level of parenting stress than fathers who lived in persistent poverty (1.86). In regards to couple's relationship quality, couples who experienced no poverty across survey years, on average, reported higher levels of relationship quality compared to couples who lived in both transient and persistent poverty across survey years.

### ***Multivariate Models***

To address the first research question—is there an association between parenting stress and relationship quality, the analyses were executed using both random and fixed effects models (see Table 4.3; Models 1 and 2, respectively). First, the association between parenting stress and couple's relationship quality was examined. Model 1 presents the results for the random effects models for mothers. The findings show that a standard deviation change in parenting stress is associated with a .12 ( $p < .001$ ) standard deviation decrease in couple's relationship quality. Similar to the random effects results, the fixed effects model (Model 2) shows that mother's parenting stress is significantly associated with couple's relationship quality: a standard deviation change in mother's parenting stress is associated with a .06 standard deviation decrease in couple's relationship quality. For fathers (Model 1), parenting stress was also associated with a .11 standard deviation decrease in couple's relationship quality. The fixed effects also yielded significant result. That is, a standard deviation increase in parenting stress is associated with a .09 standard deviation decrease in couple's relationship quality. The effects, however, were modest.



The results demonstrate that, across two analytic techniques, both mother's and father's parenting stress is associated with lower levels of couple's relationship quality.

Also, the converse association was examined—is couple's relationship quality associated with lower levels of parenting stress for both mothers and fathers? To address this question, random and fixed effect models were also employed. Model 1 shows the random effects results for the association between couple's relationship and parenting stress for mothers. The findings reveal that a standard deviation change in couple's relationship quality is associated with a standard deviation decrease in parenting stress ( $b = .11$ ;  $p < .001$ ). Again, the fixed effects model show similar results. Specifically, couple's relationship quality is associated with a .05 standard deviation decrease in maternal parenting stress ( $p < .05$ ). For fathers (Model 1), a standard deviation change in couple's relationship quality is associated with a .10 standard deviation decrease in parenting stress. Moreover, the fixed effects results (Model 2) were similar to the fixed effects model which shows that a standard deviation change in couple's relationship quality is associated with a .08 standard deviation decrease in parenting stress. Similar to the results presented above, the effects are also modest. Taken together, these results support the notion that there is an association between parenting stress and couple's relationship quality.

Although the random and fixed effects models (discussed above) demonstrate an association between both parents' parental stress and couple's relationship quality, and vice versa, Model 3 displays the results for the cross-lagged path models in order to test for reciprocity—the second research question. For mothers (Panel A), there was no significant association between early parenting stress to later couple's relationship quality

from Years 1 to 3 or Years 3 to 5. Reciprocally, the association between couple's relationship and maternal stress yield significant results. Specifically, a standard deviation increase in couple's relationship quality at Years 1 and 3 is associated with a standard deviation decrease in maternal stress at Years 3 and 5, respectively ( $b = -.07$  and  $-.06$ ;  $p < .05$ ). This suggests that when couples display supportive relationship quality, maternal parenting stress is significantly lowered in the subsequent survey years. These results give additional support that couple's relationship quality is associated with lower levels of parenting stress. For fathers, the longitudinal and reciprocal association between parenting stress and relationship quality was not statistically significant. Thus, hypothesis *H1* was not support. Moreover, given that early couple's relationship quality was associated with lower levels of parenting stress at the later years for mothers only, the hypothesis *H2* was partially supported.

In regards to change over time—the third research question, the analyses were executed to examine whether the association between parenting stress and couple's relationship was significantly different between Year-1 to Year-3 and Year-3 to Year-5. In order to test for differences, two models were compared: one model with the parameters estimated across survey years are allowed to estimated freely, and another model with the parameters constrained to be equal—that is, Years 1-3 equal to Years3-5. The models were compared using the  $\chi^2$  difference test. The results indicated that the differences between Years 1-3 and Years3-5 were not statistically significant for both mothers ( $p = .80$ ) and fathers ( $p = .88$ ). The findings suggest that there is no added or diminishing effect between parenting stress and relationship quality for either parent over time. Thus, the research hypothesis *H3* was not supported.

To address the last question—do the associations (discussed above) vary across families with different poverty histories—the models were re-estimated across poverty groups (i.e., no poverty, transient poverty, and persistent poverty). In regards to the association between parenting stress and couple's relationship quality, the results are presented in Table 4.4. First, for couples who did not experience poverty over the four survey years, Panel A (Model 1) shows the results for the random effects models for mothers. The results indicate that a standard deviation change in parenting stress is associated with a .15 standard deviation decrease in couple's relationship quality ( $p < .001$ ). In Model 2, the fixed results demonstrate similar finding with a .08 standard deviation decrease in couple's relationship quality. For Model 3, the cross-lagged model, the results reveal a modest significant association for early maternal parenting stress Year-1 and later couple's relationship quality Year-3 ( $b = -.06$ ;  $p < .10$ ) and a significant association from Year-3 to Year-5 ( $b = -.07$ ;  $p < .05$ ). For fathers, the results are also consistent across the random and fixed effects results ( $b = -.11$  and  $-.07$ ) indicating that parenting stress is associated with lower levels of couple's relationship quality. The cross-lagged model (see Model 3), however, yielded no significant results for fathers. All in all, the results show that, for couples who experience no poverty over time, parental stress consistently lowers couple's relationship quality for mothers but not fathers across models.

Second, for couples who experienced transient poverty across the four survey years (Panel B), the random and fixed effects models revealed no significant association between maternal parenting stress and couple's relationship quality. Moreover, the cross-lagged association yielded no significant association from early parenting stress to later

couple's relationship quality. For fathers (Panel B, Model 1), the random effects show that paternal parenting stress is modestly associated with a .07 standard deviation decrease in couple's relationship quality ( $p < .10$ ). The fixed effects results also show a modest association ( $b = -.09$ ;  $p < .10$ ). In Model 3, the cross-lagged model reveals that the effects of paternal parenting was associated with couple's relationship quality only from Year-3 to Year 5 ( $b = -.17$ ;  $p < .01$ ).

Last, turning to couples who experienced persistent poverty over the four survey years (Panel C, Model 1), the random effects results indicate that a standard deviation change in maternal parenting stress is associated with a .12 standard deviation decrease in couple's relationship quality. The fixed effects (Panel C, Model 2) results showed a modest association ( $b = -.11$ ;  $p < .10$ ). The cross-lagged model revealed no significant association. For fathers, the results show that paternal parenting stress is associated with lower levels of couple's relationship quality in the random effects ( $b = -.12$ ;  $p < .05$ ) and fixed effects ( $b = -.14$ ;  $p < .05$ ) models. The cross-lagged model (Model 3) revealed no significant results for fathers, however.

The reverse association—the association between couple's relationship quality and parenting stress—across poverty histories was also examined. For couples who experienced no poverty across survey years (Panel A), the results revealed that for mothers, couple's relationship quality is associated with lower levels of maternal parenting stress for the random effects ( $b = -.13$ ;  $p < .001$ , see Model 1) and the fixed effects ( $b = -.07$ ;  $p < .05$ , see Model 2). The cross-lagged model shows that couple's relationship quality at Year 1 was associated with a .08 standard deviation decrease in maternal parenting stress ( $p < .05$ ) at Year-3. The findings were not significant from

Years 3 to 5, however. For fathers, the results show that couple's relationship quality is associated with a decrease in paternal parenting stress for the random effects ( $b = -.09$ ;  $p < .001$ ) and the fixed effects ( $b = -.06$ ;  $p < .05$ ) models. No significant results emerged for fathers in the cross-lagged model.

For couples who experience transient poverty across time (Panel B), couple's relationship quality was not significantly associated with maternal parenting stress for the random and fixed effects models, as well as the cross-lagged model. For fathers, the random effects model displayed a significant but modest association ( $b = -.09$ ;  $p < .10$ ) and the fixed effects model also yielded modest results ( $b = -.08$ ;  $p < .10$ ). The cross-lagged results revealed no significant results for fathers. These findings suggest couples who experience transient poverty, relationship quality does not affect parental stress for both parents.

For couples who experienced persistent poverty across the four survey years, the random effects show that couple's relationship quality is associated with lower levels of maternal parenting stress ( $b = -.13$ ;  $p < .05$ ) and the fixed effects model also revealed a modest association ( $b = -.12$ ;  $p < .10$ ). In the cross-lagged model, the results were not significant from Year-1 to Year-3; however, couple's relationship quality at Year-3 was associated with a .15 standard deviation decrease in maternal parenting stress at Year-5. In regards to fathers, the random effects and fixed models yielded significant results ( $b = -.14$  and  $-.15$ , respectively;  $p < .05$ ). The cross-lagged results, for fathers, revealed no significant associations. Overall, couple's relationship quality consistently lowers parental stress for mothers across models but not for fathers.

## **DISCUSSION**

Extant research shows that the demands of having a young child is associated with an increase in the day-to-day hassles for many parents, which generates elevated levels of stress and distress for many parents (e.g., Umberson et al. 2010) and leads to decreases in relationship quality among intimate partners (e.g., Umberson and Reczek 2007).

Although prior studies revealed that stress in the parenting role and relationship quality are empirically related, these studies have been limited to small, non-representative samples. Moreover, the direction of the association between parental stress and relationship quality is less clear. The current study extends prior research by using a representative and longitudinal sample of couples living in urban areas 1-, 3-, and 5-years after the birth of a child to examine the following questions: (a) is there an association between parenting stress and relationship quality; (b) does the association change over time as children age from infant to toddler, and from toddler to preschooler; and (c) does the association vary across families' poverty histories?

First, the results revealed that parental stress was associated with couple's relationship quality, and vice versa. Particularly, the findings corroborate previous research that indicates that stress in the parenting role lowers the quality of the relationship between partners (Lavee et al. 1996; Quittner et al. 1990), which gives credence to stress spillover research (Bolger et al. 1989) suggesting that stress in one family domain (e.g., parenting) affects the family functioning in another domain (e.g., relationship quality). Conversely, the current study also shows that couple's with higher levels of relationship quality between parents reduces parenting stress, supporting the idea that positive partner support works as a valuable resource in the time of stress (Lavee 2013; Randall and Bodenmann 2009; Umberson and Reczek 2007). Although

these findings are consistent with prior studies, the models do not account for the lagged scores or bi-directionality between parenting stress and couple's relationship quality. In many ways, these results are confirmatory, with the possibility that parameter estimates are biased—this is especially true for the random effects models due to omitted variables.

Second, with respect to mutual influence in the association between parenting stress and couple's relationship quality appeared to follow mostly in one direction—from early relationship quality to later parenting stress (for mothers only). Compared to the random- and fixed-effects results above, the cross-lagged approach appears to be more robust as it adequately controls for prior scores and reverse causation. The results suggest that a positive, supportive relationship is a helpful resource for mothers, which has long-term benefits in parenting a young child. The finding is extremely important because mothers are more likely to engage in child rearing responsibilities than fathers (Bianchi and Milkie 2010) and less stress in the parenting role can lead to positive parenting (Green et al. 2007) and subsequent favorable outcomes for children (e.g., Conger, Conger, and Martin 2010).

In contrast, there was no indication that early parenting stress affected later relationship quality between mother and fathers when controlling for lagged scores and reciprocal associations. These results are contrary to cross-sectional studies (e.g., Quittner et al. 1990; Raikes and Thompson 2005). The unidirectional finding suggests that supportive partners are much more of a valuable resource in reducing stress than the role of stress in undermining the quality of the romantic relationship. The current study moves this line of research forward by addressing and clarifying the directionality in the

parenting stress and relationship quality nexus, with the results pointing to the significance of supportive intimate partnerships.

In regards to change over time, the cross-lagged results reveal that the association between parenting stress and couple's relationship quality remain relatively stable across survey years. Although prior studies suggest that young children increases parental stress and put strain on intimate partnerships (e.g., Nomaguchi and Milkie 2003), the association between these factors is similar across time as children develop. The general conclusion from these findings suggest that the association between couple's relationship quality and parenting stress is positively related for couples who are romantically involved five years after the birth of a child—with the results being more beneficial for mothers than fathers. Simply put, consistent positive partnerships equal less stress in the parenting role for mothers.

Last, in regards to variations in the association between families experiencing different poverty histories, the results yielded important and interesting results. The random and fixed effects results suggest that, regardless of families' poverty history, the association between parenting stress and couple's relationship quality was similar—although the results are less compelling for mothers and fathers who experience transient poverty. The directionality results were consistent with the full sample. That is, supportive relationship quality reduced maternal parenting stress. More specifically, whether under optimal circumstances (i.e., no poverty) or under adverse conditions (i.e., persistent poverty), having a supportive partner is *modestly* beneficial in reducing stress in the parenting role.



Although the results were largely similar across families experiencing different poverty histories, some additional findings are worth noting: First, no significant association emerged between parenting stress and couple's relationship quality for mothers who experience transient poverty. These results are somewhat surprising given the stress associated with poverty (e.g., Wadsworth 2012). Some studies, however, show that families can be resilient in the midst of poverty (e.g., Mullin and Arce 2008). To some degree, these findings are consistent with a prior study that found no significant association between couple's quality and parenting stress for parents living in poverty (Raikes and Thompson 2005). Second, paternal stress was associated with lower levels of couple's relationship quality for fathers who experience transient poverty. To speculate, fathers who experience transient poverty may find such variations particularly frustrating. As a consequence, parenting stress increases, leading to unfavorable interactions between parents. Last, the cross-lagged results show, among mothers experiencing no poverty and transient poverty, that supportive relationship quality between parents mattered more for decreasing maternal parenting stress when their child was younger (infant to toddler) whereas for mothers who experienced persistent poverty, supportive relationship mattered more when their child was older (toddler to preschool). The divergence in these findings may be a result of mothers' interpretation of having a child. For instance, although parenting can be stressful, for many low-income mothers having a child can give meaning to life (e.g., Edin and Kefalas 2005). Once a child ages to the preschool years and become more independent, especially living in persistent poverty, being in a positive, supportive relationship may be paramount to decreasing maternal stress.

### *Implications*

The current study has implications for research. Specifically, the results highlights family systems theory which suggests that individuals within families are interdependent (Cox and Paley 1997) and the dyadic nature of stress and family functioning among parents (e.g., spillover; Bolger et al. 1989; Larson and Almeida 1999). The directionality results are more persuasive in regards to couple's relationship quality reduces parenting stress than parenting stress affecting relationship quality. Examining the association as children get older would be a valuable contribution for future research. Moreover, additional factors such as race/ethnicity, marital status, and child's health may be moderate the association between parenting stress and relationship and thus warrant consideration.

In regards to implications for policy, the current study can be particularly useful. For example, recent public policy has emphasized building and improving relationship quality among parents (Hawkins, Amato, and Kinghorn 2013). The findings in the current study demonstrates that improving couple's relationship skills to promote positive relationship quality may be valuable in reducing stress in the parenting role, especially for mothers. This is particularly important given that maternal stress has far-reaching implications for children's well-being (Bornstein and Bradley 2003). Interestingly, although current policy aims at low-income families (Dion 2005), the findings suggest that promoting supportive relationship quality can be beneficial for all parents in terms of parenting stress, regardless of socioeconomic status (e.g., poverty histories). Moreover, given that many family policies target mothers, targeting both parents could yield beneficial results (e.g., Carlson et al. 2011).

### ***Limitations***

Although the current study makes an important contribution to the study of parenting stress, relationship quality, and poverty histories, there are notable limitations that must be discussed. First, although longitudinal designs are beneficial in many regards, some respondents drop out of the original sample—through attrition or relationship dissolution. Given that many parents leave the study are disadvantaged, display higher levels of parenting stress, and lower levels of relationship quality, the parameter estimates may be biased downward for parenting stress and biased upward for relationship quality. Second, one obstacle for survey research is missing variable bias. Although the current study employs several analytic techniques to test the robustness of the association, each technique is vulnerable to the threat of missing variable bias. Third, the parenting stress measure reflects parents' responses to broad notions of parenting stress and may miss particular hassles associated with the parenting role. Last, given that the sample reflects couples living in urban areas who had a child in the late 1990s, the generalizability of the results is limited to this population and not the general population.

### ***Strengths***

Despite the limitations, there are several strengths. First, the current study uses a large, diverse, urban sample of mothers and fathers who had a child in the 1990s, and the families were followed over time and re-interviewed when their child was an infant, toddler, and in preschool. Early studies on parenting stress have been limited by small, homogenous samples (i.e., middle-class white families). Second, taking advantage of the panel design, the current study examines the longitudinal and reciprocal associations between parenting stress and couple's relationship. Last, although several studies have examined parenting stress and relationship quality in the context of economic inequality

(e.g., low-income, economic hardship, poverty), many of these studies have been cross-sectional. Given the dynamic nature of poverty, understanding the association between parenting stress and relationship quality over time simultaneously as families move in and out of poverty may be fruitful to understanding how economic inequality affects individual and family processes.

## **CONCLUSION**

The current study takes an important step in addressing the association between parenting stress and couple's relationship quality in the context of poverty using a large sample of urban parents who had a child in the late 1990s. The longitudinal design permits the use of multiple empirical techniques to examine the aforementioned association during their child's early developmental period: infant, toddler, and preschooler. The findings reveal consistent evidence that couple's supportive relationship quality is a valuable resource that protects mothers from elevated levels of stress in the parenting role, even across poverty histories. Simply put, being in a supportive partnership means less parenting stress for mothers. Future research can move this line of inquiry forward by examining parenting stress and relationship quality as children get older and gain more independence.

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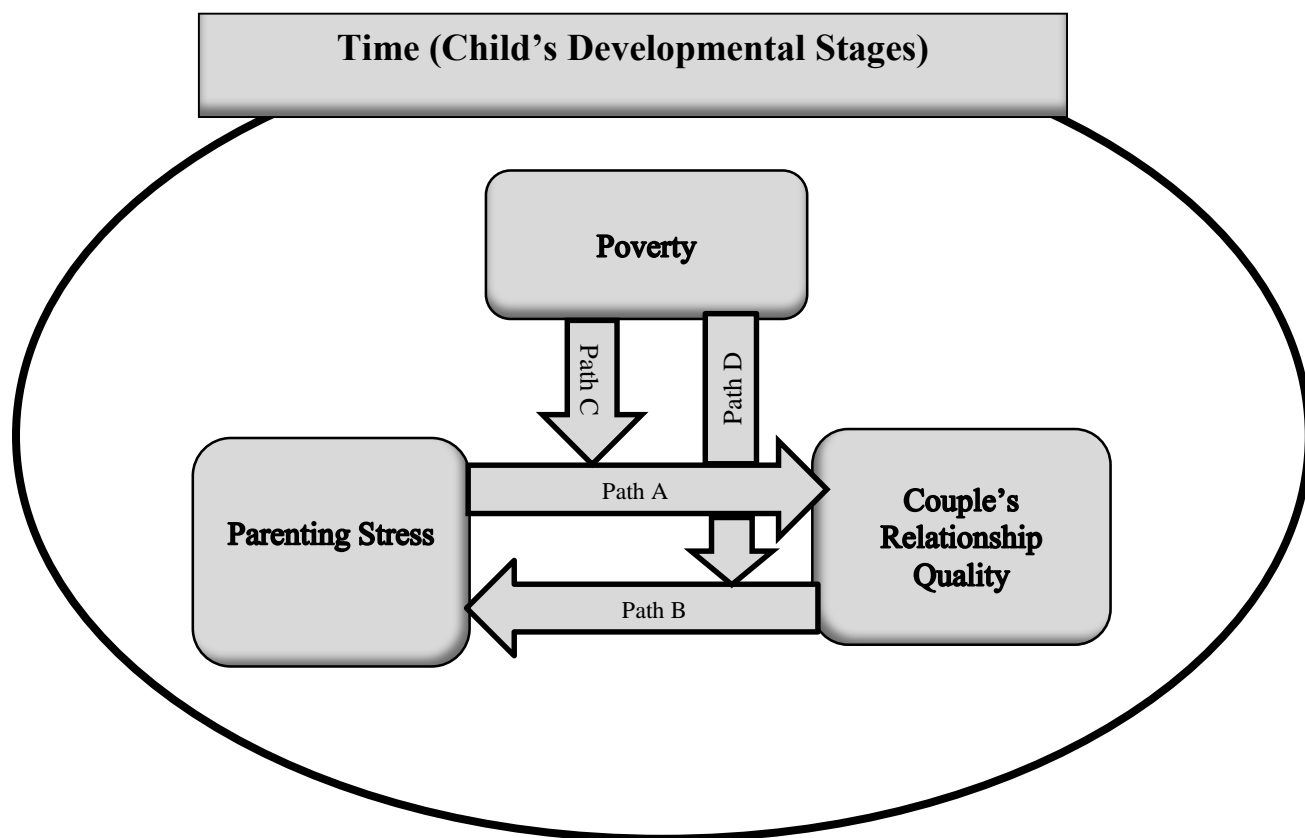


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## APPENDIX C



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Figure 4.1: Conceptual Model for Parenting Stress, Couple's Relationship Quality, Poverty Histories Over Time

Table 4.16: Descriptive Statistics, by Poverty Histories

	All Couples		No poverty		Transient poverty		Persistent poverty	
	M or %	SD	M or %	SD	M or %	SD	M or %	SD
Marital Status (Baseline)								
Married								
Cohabiting	25.14		14.20		56.30		46.60	
Parent's Age								
Mother's Age	28.96	5.63	30.54	5.16	24.85	5.36	25.51	4.32
Father's Age	31.05	6.15	32.57	5.68	26.85	6.35	27.98	4.90
Mother's Race/Ethnicity								
Non-Hispanic White	44.04		58.60		12.30		5.47	
Non-Hispanic Black	18.61		15.50		34.90		16.80	
Hispanic	29.11		15.30		48.20		77.30	
Non-Hispanic Other	8.24		10.60		4.56		.42	
Parents are a different race/ethnicity	10.97		13.10		7.43		4.14	
Mother's Education								
Less than High School	17.40		4.10		34.10		65.60	
High school diploma or equivalent	24.46		18.70		45.00		31.30	
Some college	21.14		26.10		15.10		2.98	
Bachelor's degree or higher	36.99		51.10		5.83		.07	
Father's Education								
Less than High School	19.01		5.42		33.60		70.90	
High school diploma or equivalent	16.18		13.30		29.70		16.10	
Some college	28.23		30.80		31.40		12.10	
Bachelor's degree or higher	36.59		50.40		5.36		0.91	
Parent's Physical Health								
Mother	4.08	0.83	4.24	0.77	3.77	0.79	3.60	0.91
Father	4.05	0.90	4.19	0.79	3.72	0.96	3.73	1.15
Parent's Mental Health								
Mother	6.42		5.63		2.88		14.00	
Father	5.20		4.36		11.10		3.20	
Employment Status								
Mother has job 1yr	59.54		71.60		43.20		17.20	
Father has job 1yr	92.16		95.50		79.00		89.10	
Social Support								
Mother received social support	23.05		21.40		26.20		27.90	
Father received social support	29.35		31.50		27.90		20.20	
Incarceration History								
Father Incarcerated	7.29		4.84		15.00		11.40	
# of children in HH	0.94	1.20	0.73	0.89	1.474	1.50	1.416	1.76
Fertility History								

Table 4.1, continued

	All Couples		No poverty		Transient poverty		Persistent poverty	
	M or %	SD	M or %	SD	M or %	SD	M or %	SD
Couples Higher Order Birth (Yes=1)	49.32		45.6		63.60		52.70	
Multi-partnered Fertility								
Neither parent has a child by another partner	73.79		81.5		51.20		59.10	
Father has a child by another partner	9.70		7.54		14.20		15.70	
Mother has a child by another partner	11.26		7.16		25.80		16.30	
Both parents have a child by another partner	5.26		3.79		8.77		8.87	
Below poverty line = 1 (Baseline)	13.49							
Child Characteristics								
Child Health(Yr1)	4.63	0.65	4.69	0.58	4.73	0.57	4.23	0.85
Boy=1	60.02		57.3		55.70		78.20	
Child Temperament	2.43	0.67	2.35	0.59	2.52	0.75	2.74	0.83
N	942		596		207		139	

Table 4.17: Means on Parenting Stress and Couple's Relationship Quality

	All Couples		No Poverty		Transient Poverty		Persistent Poverty	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Parenting Stress (Mothers)								
Year 1	2.16	0.60	2.15	0.60	2.10	0.60	2.26	0.60
Year 3	2.29	0.59	2.29	0.59	2.37	0.62	2.22	0.57
Year 5	2.23	0.58	2.22	0.55	2.21	0.71	2.33	0.61
Parenting Stress (Fathers)								
Year 1	2.08	0.61	2.08 <sup>ab</sup>	0.55	2.23 <sup>ac</sup>	0.58	1.90 <sup>bc</sup>	0.83
Year 3	2.10	0.64	2.14	0.60	2.02	0.63	2.03	0.79
Year 5	1.98	0.64	2.02 <sup>d</sup>	0.61	1.90	0.62	1.86 <sup>d</sup>	0.80
Relationship Quality (Couple)								
Year 1	2.76	0.21	2.78 <sup>ef</sup>	0.19	2.72 <sup>e</sup>	0.23	2.72 <sup>f</sup>	0.23
Year 3	2.77	0.19	2.77 <sup>g</sup>	0.19	2.73 <sup>g</sup>	0.20	2.77	0.20
Year 5	2.75	0.23	2.77 <sup>h</sup>	0.22	2.69 <sup>h</sup>	0.23	2.73	0.27

Note: means with identical superscripts denotes statistical difference.

Table 4.18: Standardized Parameter Estimates

	Model 1: Random Effects		Model 2: Fixed Effects		Model 3: Cross-Lagged	
	B	SE	B	SE	B	SE
<b>Mothers</b>						
Parenting Stress --> Rel. Quality	-.12***	0.02	-0.06*	0.02	-0.04	0.03 <sup>a</sup>
					-0.04	0.03 <sup>b</sup>
Rel. Quality --> Parenting Stress	-.11***	0.02	-0.05*	0.02	-0.07*	0.03 <sup>a</sup>
					-0.06*	0.03 <sup>b</sup>
<b>Fathers</b>						
Parenting Stress --> Rel. Quality	-.11***	0.02	-.09***	0.02	-0.04	0.03 <sup>a</sup>
					-0.04	0.03 <sup>b</sup>
Rel. Quality --> Parenting Stress	-.10***	0.02	-0.08***	0.02	-0.03	0.03 <sup>a</sup>
					-0.02	0.03 <sup>b</sup>

a = Year 1 to Year 3; b = Year 3 to Year 5; \*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.19: Standardized Parameter Estimates, by Poverty Histories

	Panel A: No Poverty						Panel B: Transient Poverty						Panel C: Persistent Poverty					
	Model 1: Random Effects		Model 2: Fixed Effects		Model 3: Cross- Lagged		Model 1: Random Effects		Model 2: Fixed Effects		Model 3: Cross- Lagged		Model 1: Random Effects		Model 2: Fixed Effects		Model 3: Cross- Lagged	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
<b>Mothers</b>																		
Parenting Stress --> Rel. Quality	-.15***	.03	-.08*	.03	-.06†	.04 <sup>a</sup>	-.04	.04	.02	.05	-.006	.06 <sup>a</sup>	-.12*	.05	-.11†	.06	.07	.08 <sup>a</sup>
				-.07*	.03 <sup>b</sup>						-.001	.06 <sup>b</sup>					-.02	.08 <sup>b</sup>
Rel. Quality --> Parenting Stress	-.13***	.02	-.07*	.03	-.08*	.03 <sup>a</sup>	.03	.04	.02	.05	-.103	.06 <sup>a</sup>	-.13*	.05	-.12†	.06	.06	.07 <sup>a</sup>
				-.03	.03 <sup>b</sup>						-.09	.06 <sup>b</sup>					-.15*	.07 <sup>b</sup>
<b>Fathers</b>																		
Parenting Stress --> Rel. Quality	-.11***	.03	-.07*	.03	-.05	.03 <sup>a</sup>	-.07†	.04	-.09†	.05	.02	.06 <sup>a</sup>	-.12*	.05	-.14*	.06	.04	.08 <sup>a</sup>
				.01	.03 <sup>b</sup>						-.17**	.06 <sup>b</sup>					.004	.07 <sup>b</sup>
Rel. Quality --> Parenting Stress	-.09***	.02	-.06*	.03	-.02	.03 <sup>a</sup>	-.09†	.04	-.08†	.05	.03	.06 <sup>a</sup>	-.14**	.05	-.15*	.06	-.001	.07 <sup>a</sup>
				-.02	.03 <sup>b</sup>						.02	.06 <sup>b</sup>					-.02	.07 <sup>b</sup>

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10;

Note: a = Year 1 to Year 3; b = Year 3 to Year 5



Table 4.20: Attrition for Mothers and Fathers between Years 1 and Year 3

	Mother		Father	
	exp(b)	t	exp(b)	t
Parenting Stress(Yr1)	0.89	-0.77	1.10	-0.75
Couple's Relationship Quality (Yr1)	1.19	-0.52	0.66	-1.38
Cohabiting(Baseline)	1.07	-0.29	2.121**	-3.22
Mother's Age	1.01	-0.63	0.99	-0.41
Non-Hispanic Black	1.19	-0.64	0.76	-1.10
Hispanic	1.931*	-2.49	1.46	-1.54
Non-Hispanic Other	2.03	-1.59	0.45	-1.29
High School Diploma or Equivalent	0.76	-1.17	0.91	-0.45
Some College	0.78	-1.00	0.80	-0.88
Bachelor's Degree or higher	0.526+	-1.67	0.93	-0.22

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.21: Attrition for Mothers and Fathers between Year 1 and Year 3

	Mothers		Fathers	
	exp(b)	t	exp(b)	t
Parenting Stress (Yr3)	1.13	-0.86	0.91	-0.70
Couple's Relationship Quality (Yr3)	1.03	-0.09	1.39	-1.01
Cohabiting(Baseline)	1.15	-0.63	1.14	-0.62
Mother's Age	1.02	-0.90	0.98	-1.28
Non-Hispanic Black	0.92	-0.35	1.09	-0.34
Hispanic	1.46	-1.53	1.00	-0.01
Non-Hispanic Other	1.921+	-1.72	0.91	-0.17
High School Diploma or Equivalent	0.70	-1.40	1.603*	-2.16
Some College	1.04	-0.15	0.576+	-1.88
Bachelor's Degree or higher	0.73	-0.93	0.64	-1.21

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.22: Relationship Dissolution for Mothers and Fathers between Year 1 and Year 3

	Mother		Father	
	exp(b)	t	exp(b)	t
Parenting Stress (Yr1)	1.01	-0.07	0.830+	-1.74
Couple's Relationship Quality (Yr1)	0.331***	-4.68	0.318***	-4.56
Cohabiting(Baseline)	2.763***	-4.98	2.584***	-4.73
Mother's Age	0.940***	-4.16	0.957***	-3.57
Non-Hispanic Black	1.589**	-2.61	1.519*	-2.11
Hispanic	0.548**	-2.70	0.578*	-2.29
Non-Hispanic Other	0.95	-0.13	1.76	-1.46
High School Diploma or Equivalent	1.15	-0.83	1.23	-1.21
Some College	1.10	-0.47	0.71	-1.64
Bachelor's Degree or higher	0.485+	-1.93	0.175***	-3.50

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.23: Relationship Dissolution for Mothers and Fathers between Year 3 and Year 5

	Mothers		Fathers	
	exp(b)	t	exp(b)	t
Parenting Stress (Yr3)	0.96	-0.42	0.99	-0.12
Couple's Relationship Quality (Yr3)	0.263***	-5.99	0.263***	-5.46
Cohabiting(Baseline)	3.209***	-5.89	2.852***	-5.17
Mother's Age	0.972*	-2.06	0.976*	-2.00
Non-Hispanic Black	1.530*	-2.30	1.926**	-2.97
Hispanic	0.699+	-1.70	1.18	-0.69
Non-Hispanic Other	1.10	-0.23	0.54	-0.97
High School Diploma or Equivalent	0.87	-0.81	1.03	-0.15
Some College	0.698+	-1.86	0.85	-0.75
Bachelor's Degree or higher	0.519*	-2.09	0.81	-0.65

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.24: Parameter Estimates for Control Variables on Relationship Quality (Y-Standardized)

	Mothers						Fathers					
	Random Effects		Cross-Lagged				Random Effects		Cross-Lagged			
	Relationship Quality		Relationship Quality (Year 3)		Relationship Quality (Year 5)		Relationship Quality		Relationship Quality (Year 3)		Relationship Quality (Year 5)	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Relationship Quality (Year-1 lagged)	—	—	1.90***	0.09	1.01***	0.12	—	—	1.87***	0.09	1.03***	0.11
Relationship Quality (Year-3 lagged)	—	—	—	—	0.38***	0.03	—	—	—	—	0.37***	0.03
Cohabitation = 1	-0.12†	0.07	-0.06	0.08	-0.18*	0.07	-0.09	0.07	-0.06	0.07	-0.18**	0.07
Non-Hispanic Black	-0.18*	0.07	-0.05	0.08	-0.07	0.07	-0.14*	0.07	-0.05	0.07	-0.05	0.07
Hispanic	0.02	0.07	-0.03	0.08	0.00	0.08	0.04	0.07	-0.02	0.08	0.02	0.07
Non-Hispanic Other	-0.12	0.12	0.07	0.13	0.12	0.13	-0.15	0.12	0.06	0.13	0.13	0.13
Couple is mixed race	-0.10	0.08	-0.08	0.09	0.01	0.09	-0.06	0.08	-0.04	0.09	0.01	0.09
High school diploma or equivalent	0.12	0.08	0.07	0.09	0.00	0.08	-0.09	0.08	-0.10	0.09	-0.09	0.08
Some college	0.15†	0.09	0.03	0.09	-0.03	0.09	-0.01	0.08	-0.12	0.09	-0.05	0.08
Bachelor's degree or higher	0.13	0.10	0.03	0.11	-0.07	0.11	0.19†	0.10	0.02	0.11	0.03	0.10
Parent's Age (in years)	-0.01	0.01	0.00	0.01	0.00	0.01	-0.01	0.00	-0.01	0.01	0.00	0.01
Employed = 1	0.06	0.05	0.05	0.06	0.02	0.06	0.01	0.08	0.03	0.09	0.10	0.09
Social Support = 1	-0.12	0.06	-0.20**	0.06	-0.06	0.06	-0.05	0.06	-0.14*	0.06	0.07	0.06
Parent's Health	0.09**	0.03	0.04	0.03	0.01	0.03	0.06*	0.03	0.08*	0.03	0.04	0.03
Parent's Depression	-0.19*	0.09	-0.02	0.10	0.09	0.09	-0.55***	0.12	-0.37**	0.13	-0.19	0.12
Lived in poverty = 1 (baseline)	0.08	0.07	0.05	0.08	0.01	0.08	0.07	0.08	0.07	0.08	0.02	0.08
Higher-order birth = 1	0.05	0.06	0.09	0.07	0.02	0.07	0.06	0.06	0.10	0.07	0.03	0.06
# of children in HH < 18	-0.03	0.03	-0.03	0.03	-0.02	0.03	-0.03	0.03	-0.03	0.03	-0.01	0.03
Father's multipartnered fertility	-0.14†	0.08	-0.06	0.09	-0.02	0.09	-0.12	0.09	-0.01	0.07	-0.01	0.06
Mother's multipartnered fertility	-0.03	0.08	-0.05	0.09	-0.02	0.09	-0.04	0.08	-0.01	0.07	-0.01	0.06
Both parent's multipartnered fertility	0.11	0.10	-0.01	0.11	0.01	0.10	0.16	0.10	0.08	0.08	0.07	0.07
Father been incarcerated (Yr1)	-0.22**	0.08	0.09	0.09	-0.17*	0.08	-0.21*	0.08	-0.05	0.07	-0.04	0.06
Child's health	0.06	0.04	0.04	0.04	0.00	0.04	0.18*	0.04	0.06	0.04	0.00	0.04
Child is boy = 1	0.07	0.05	0.03	0.06	0.09†	0.05	0.07	0.05	0.03	0.06	0.09†	0.05
Child's Temperament	-0.07†	0.04	-0.04	0.04	0.07†	0.04	-0.09*	0.04	-0.05	0.04	0.07†	0.04

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.25: Parameter Estimates for Control Variables on Parenting Stress (Y-Standardized)

Variables	Mothers						Fathers					
	Random Effects		Cross-Lagged				Random Effects		Cross-Lagged			
	Parenting Stress		Parenting Stress (Year 3)		Parenting Stress (Year 5)		Parenting Stress		Parenting Stress (Year 3)		Parenting Stress (Year 5)	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Parenting Stress (Year-1 lagged)	—	—	0.88***	0.04	0.40***	0.05	—	—	0.87***	0.03	0.51***	0.05
Parenting Stress (Year-3 lagged)	—	—	—	—	0.45***	0.03	—	—	—	—	0.39***	0.03
Cohabitation = 1	-0.03	0.07	-0.02	0.07	0.09	0.07	-0.06	0.07	-0.08	0.07	0.02	0.06
Non-Hispanic Black	-0.11	0.07	0.02	0.07	-0.22**	0.07	-0.11	0.07	-0.12†	0.07	0.00	0.07
Hispanic	-0.13†	0.07	-0.04	0.08	-0.17*	0.07	-0.12	0.08	-0.06	0.08	-0.04	0.07
Non-Hispanic Other	0.20	0.13	-0.08	0.13	-0.07	0.12	0.07	0.13	0.03	0.13	0.13	0.12
Couple is mixed race	-0.09	0.09	0.03	0.09	0.10	0.08	-0.01	0.09	-0.18*	0.09	-0.16†	0.08
High school diploma or equivalent	-0.02	0.08	0.00	0.08	0.01	0.08	0.07	0.08	0.16†	0.08	0.14†	0.08
Some college	0.05	0.09	0.07	0.09	0.07	0.08	-0.09	0.09	0.10	0.09	0.06	0.08
Bachelor's degree or higher	0.04	0.11	0.16	0.11	0.05	0.10	0.12	0.11	0.13	0.10	0.21*	0.10
Parent's Age (in years)	0.013*	0.006	0.01	0.01	0.01	0.01	-0.01	0.01	-0.01*	0.01	-0.01	0.01
Employed = 1	-0.13*	0.06	-0.08	0.06	0.00	0.05	-0.16†	0.09	-0.09	0.09	0.04	0.08
Social Support = 1	0.17**	0.06	0.14*	0.06	-0.03	0.06	0.05	0.06	0.02	0.06	-0.05	0.06
Parent's Health	-0.08*	0.03	-0.02	0.03	-0.01	0.03	-0.07*	0.03	-0.05†	0.03	-0.06†	0.03
Parent's Depression	0.33***	0.09	0.07	0.09	0.15†	0.09	0.12	0.12	-0.03	0.12	0.12	0.12
Lived in poverty = 1 (baseline)	0.12	0.08	0.01	0.08	0.14†	0.07	0.08	0.08	0.03	0.08	-0.13†	0.07
Higher-order birth = 1	0.06	0.06	0.06	0.07	-0.08	0.06	0.14*	0.07	0.05	0.07	-0.02	0.06
# of children in HH < 18	0.04	0.03	0.04	0.03	-0.03	0.03	0.01	0.03	0.01	0.03	0.03	0.03
Father's multipartnered fertility	-0.07	0.09	-0.12	0.09	0.13	0.08	-0.13	0.09	-0.08	0.06	-0.08	0.06
Mother's multipartnered fertility	-0.14	0.09	-0.05	0.09	0.00	0.08	-0.18*	0.09	-0.15*	0.06	-0.15*	0.06
Both parent's multipartnered fertility	-0.12	0.10	0.03	0.10	0.18†	0.10	-0.11	0.10	0.08	0.07	0.08	0.07
Father been incarcerated (Yr1)	-0.05	0.08	-0.02	0.08	0.03	0.08	0.17*	0.09	0.13*	0.06	0.13*	0.06
Child's health	-0.08†	0.04	-0.05	0.04	-0.09*	0.04	-0.03	0.04	-0.06	0.04	0.00	0.04
Child is boy = 1	0.06	0.05	0.03	0.05	0.04	0.05	0.09	0.05	0.01	0.05	0.01	0.05
Child's Temperament	0.17***	0.04	0.07†	0.04	0.01	0.04	0.01	0.04	0.05	0.04	-0.03	0.04

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.26: Parameter Estimates for Control Variables on Relationship Quality (Y-Standardized), by No Poverty

Variables	Mothers						Fathers					
	Random Effects		Cross-Lagged				Random Effects		Cross-Lagged			
	Relationship Quality		Relationship Quality (Year 3)		Relationship Quality (Year 5)		Relationship Quality		Relationship Quality (Year 3)		Relationship Quality (Year 5)	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Relationship Quality (Year-1 lagged)	—	—	2.11	0.12	1.16***	0.15	—	—	2.07***	0.12	1.17***	0.15
Relationship Quality (Year-3 lagged)	—	—	—	—	0.40***	0.04	—	—	—	—	0.41***	0.04
Cohabitation = 1	-0.14	0.09	-0.09	0.09	-0.12	0.09	-0.08	0.09	-0.05	0.09	-0.13	0.09
Non-Hispanic Black	-0.16†	0.09	-0.04	0.09	-0.09	0.09	-0.10	0.09	-0.03	0.09	-0.04	0.08
Hispanic	0.11	0.10	0.07	0.10	-0.08	0.10	0.18†	0.10	0.08	0.10	-0.03	0.10
Non-Hispanic Other	0.05	0.13	0.13	0.14	0.18	0.13	-0.01	0.14	0.14	0.14	0.15	0.14
Couple is mixed race	-0.05	0.11	0.00	0.11	-0.06	0.10	-0.04	0.11	0.01	0.11	-0.01	0.10
High school diploma or equivalent	0.22	0.16	0.14	0.16	0.20	0.15	-0.01	0.14	-0.04	0.14	-0.15	0.13
Some college	0.21	0.15	0.08	0.16	0.17	0.15	0.07	0.13	-0.07	0.14	-0.05	0.13
Bachelor's degree or higher	0.17	0.16	0.18	0.17	0.11	0.16	0.27†	0.14	0.07	0.14	-0.01	0.14
Parent's Age (in years)	-0.01	0.01	-0.01	0.01	0.00	0.01	0.00	0.01	-0.01	0.01	0.00	0.01
Employed = 1	0.09	0.07	0.04	0.08	-0.01	0.07	-0.01	0.15	0.28†	0.15	-0.01	0.14
Social Support = 1	-0.15*	0.07	-0.16*	0.08	-0.13†	0.07	-0.07	0.07	-0.16*	0.08	0.04	0.07
Parent's Health	0.13**	0.04	-0.01	0.05	-0.05	0.04	0.11†	0.04	0.12**	0.04	0.03	0.04
Parent's Depression	-0.07	0.11	-0.13	0.12	0.11	0.11	-0.57**	0.17	-0.45**	0.17	-0.18	0.16
Higher-order birth = 1	0.18*	1.09	0.17†	0.09	0.08	0.09	0.21*	0.09	0.18*	0.09	0.06	0.08
# of children in HH < 18	-0.08†	0.04	-0.09*	0.05	-0.02	0.04	-0.09*	0.04	-0.09*	0.04	-0.01	0.04
Father's multipartnered fertility	-0.31**	0.11	-0.26*	0.12	0.11	0.11	-0.24*	0.11	0.01	0.07	0.01	0.06
Mother's multipartnered fertility	0.02	0.12	0.11	0.12	0.02	0.12	0.04	0.12	0.01	0.06	0.01	0.06
Both parent's multipartnered fertility	-0.10	0.15	-0.05	0.16	0.09	0.15	-0.01	0.15	0.10	0.08	0.09	0.07
Father been incarcerated (Yr1)	-0.20	0.13	0.25†	0.14	-0.33*	0.13	-0.12	0.14	-0.08	0.07	-0.07	0.06
Child's health	0.07	0.05	0.05	0.06	-0.04	0.05	0.10†	0.05	0.06	0.06	-0.05	0.05
Child is boy = 1	0.11†	0.06	-0.01	0.07	0.12†	0.06	0.10	0.07	-0.02	0.07	0.11†	0.06
Child's Temperament	-0.13*	0.05	-0.07	0.06	0.04	0.05	-0.14**	0.05	-0.09	0.05	0.03	0.05

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.27: Parameter Estimates for Control Variables on Parenting Stress (Y-Standardized), by No Poverty

Variables	Mother						Fathers					
	Random Effects		Cross-Lagged				Random Effects		Cross-Lagged			
	Parenting Stress		Parenting Stress (Year 3)		Parenting Stress (Year 5)		Parenting Stress		Parenting Stress (Year 3)		Parenting Stress (Year 5)	
Parenting Stress (Year-1 lagged)	—	—	0.94***	0.05	0.49***	0.06	—	—	0.99***	0.05	0.65***	0.06
Parenting Stress (Year-3 lagged)	—	—	—	—	0.45***	0.04	—	—	—	—	0.38***	0.04
Cohabitation = 1	-0.05	0.09	-0.02	0.09	0.07	0.08	-0.03	0.09	-0.09	0.09	0.05	0.08
Non-Hispanic Black	-0.11	0.09	0.06	0.09	-0.26**	0.08	-0.16†	0.09	-0.26**	0.08	0.02	0.08
Hispanic	-0.31**	0.10	-0.16†	0.10	-0.19*	0.09	-0.11	0.10	0.02	0.10	0.13	0.09
Non-Hispanic Other	0.14	0.13	-0.13	0.13	-0.21†	0.13	-0.04	0.14	-0.02	0.14	0.22†	0.13
Couple is mixed race	-0.08	0.10	-0.01	0.11	0.20*	0.10	-0.03	0.11	-0.32**	0.11	-0.23*	0.10
High school diploma or equivalent	-0.05	0.15	-0.06	0.15	0.07	0.14	-0.07	0.14	0.07	0.14	0.09	0.12
Some college	0.08	0.15	0.00	0.15	0.14	0.14	-0.12	0.14	0.04	0.13	0.03	0.12
Bachelor's degree or higher	0.05	0.16	0.11	0.16	0.14	0.15	0.08	0.15	0.03	0.14	0.22†	0.13
Parent's Age (in years)	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.01	-0.01	0.01	-0.01	0.01
Employed = 1	-0.18*	0.07	-0.11	0.07	-0.11†	0.07	0.06	0.15	0.12	0.15	0.13	0.13
Social Support = 1	0.13†	0.07	0.16*	0.07	-0.02	0.07	0.16*	0.08	0.13†	0.07	0.07	0.07
Parent's Health	-0.11**	0.04	0.02	0.04	-0.05	0.04	-0.11*	0.04	-0.09*	0.04	-0.06	0.04
Parent's Depression	0.41***	0.11	0.09	0.11	0.12	0.11	0.33†	0.17	0.26	0.17	0.15	0.15
Higher-order birth = 1	0.02	0.09	0.03	0.09	-0.01	0.08	0.12	0.09	-0.04	0.09	-0.01	0.08
# of children in HH < 18	0.04	0.04	0.04	0.04	-0.07†	0.04	0.01	0.04	-0.02	0.04	0.08*	0.04
Father's multipartnered fertility	-0.19†	0.11	-0.24*	0.11	0.30**	0.10	-0.05	0.12	-0.10	0.07	-0.09	0.06
Mother's multipartnered fertility	-0.26*	0.12	-0.17	0.12	0.17	0.11	-0.19	0.12	-0.16	0.06	-0.15	0.06
Both parent's multipartnered fertility	-0.20	0.15	-0.10	0.15	0.22	0.14	-0.17	0.15	0.07	0.08	0.07	0.07
Father been incarcerated (Yr1)	-0.07	0.13	-0.09	0.13	0.04	0.12	0.25†	0.14	0.16	0.07	0.15	0.06
Child's health	-0.09	0.05	-0.13*	0.05	-0.08	0.05	-0.06	0.06	-0.05	0.05	0.05	0.05
Child is boy = 1	0.12†	0.06	0.08	0.06	-0.01	0.06	0.10	0.07	-0.07	0.07	0.03	0.06
Child's Temperament	0.20***	0.05	0.09†	0.05	-0.05	0.05	0.06	0.05	0.14**	0.05	-0.02	0.05

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.28: Parameter Estimates for Control Variables on Relationship Quality (Y-Standardized), by Transient Poverty

Variables	Mothers						Fathers					
	Random Effects		Cross-Lagged				Random Effects		Cross-Lagged			
	Relationship Quality		Relationship Quality (Year 3)		Relationship Quality (Year 5)		Relationship Quality		Relationship Quality (Year 3)		Relationship Quality (Year 5)	
Relationship Quality (Year-1 lagged)	—	—	1.52***	.21	0.75**	.26	—	—	1.45***	0.20	0.79**	0.23
Relationship Quality (Year-3 lagged)	—	—	—	—	0.28***	.07	—	—	—	—	0.25***	0.07
Cohabitation = 1	-0.16	.13	-0.13	0.14	-0.20	0.15	-0.22†	0.13	-0.17	0.14	-0.23†	0.14
Non-Hispanic Black	-0.38*	.15	-0.45**	0.17	-0.14	0.18	-0.37*	0.16	-0.38*	0.18	-0.16	0.18
Hispanic	-0.16	.15	-0.48**	0.17	-0.05	0.18	-0.18	0.15	-0.42*	0.17	-0.05	0.17
Non-Hispanic Other	-1.12***	.33	-0.86*	0.37	-0.50	0.39	-1.07**	0.35	-0.67†	0.41	-0.18	0.40
Couple is mixed race	-0.37*	.18	-0.52*	0.20	-0.05	0.22	-0.31	0.19	-0.50*	0.21	-0.14	0.21
High school diploma or equivalent	.17	.13	0.17	0.14	-0.03	0.15	-0.16	0.14	-0.20	0.15	-0.25†	0.15
Some college	0.48**	.14	0.35*	0.16	-0.06	0.17	0.09	0.15	-0.06	0.17	-0.07	0.16
Bachelor's degree or higher	0.71*	.32	-0.01	0.36	0.11	0.38	0.32	0.34	-0.17	0.38	-0.19	0.37
Parent's Age (in years)	-0.02	.01	0.00	0.01	-0.01	0.01	-0.01	0.01	0.01	0.01	-0.01	0.01
Employed = 1	.06	.11	0.06	0.12	0.06	0.12	-0.01	0.14	-0.03	0.17	0.06	0.16
Social Support = 1	-0.12	.11	-0.43**	0.13	-0.09	0.14	-0.07	0.12	-0.12	0.14	0.02	0.13
Parent's Health	-0.03	.06	0.13*	0.07	0.00	0.07	-0.01	0.06	0.04	0.07	0.04	0.06
Parent's Depression	-0.31	.21	0.13	0.23	0.18	0.24	-0.46*	0.21	-0.25	0.24	-0.11	0.23
Higher-order birth = 1	-0.09	.12	-0.12	0.13	-0.05	0.14	-0.11	0.12	-0.11	0.13	-0.02	0.13
# of children in HH < 18	-0.05	.05	-0.01	0.05	-0.04	0.06	-0.04	0.05	-0.02	0.05	-0.03	0.05
Father's multipartnered fertility	-0.04	.16	0.22	0.18	-0.30	0.19	-0.10	0.17	0.01	0.07	0.01	0.06
Mother's multipartnered fertility	-0.04	.15	-0.10	0.17	-0.16	0.18	-0.04	0.15	0.01	0.07	0.01	0.06
Both parent's multipartnered fertility	.26	.17	0.12	0.19	-0.17	0.20	0.30†	0.18	0.10	0.08	0.09	0.07
Father been incarcerated (Yr1)	-0.24†	.13	0.00	0.15	0.00	0.15	-0.28*	0.13	-0.08	0.07	-0.07	0.06
Child's health	0.16†	.08	0.00	0.09	0.20*	0.09	0.18*	0.08	0.07	0.09	0.17†	0.09
Child is boy = 1	.04	0.10	0.21†	0.11	-0.01	0.12	0.07	0.10	0.28*	0.12	0.06	0.12
Child's Temperament	.13	.07	0.03	0.07	0.27***	0.07	0.10	0.07	0.02	0.07	0.28***	0.07

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.29: Parameter Estimates for Control Variables on Parenting Stress (Y-Standardized), by Transient Poverty

Variables	Random Effects		Cross-Lagged				Random Effects		Cross-Lagged			
	Parenting Stress		Parenting Stress (Year 3)		Parenting Stress (Year 5)		Parenting Stress		Parenting Stress (Year 3)		Parenting Stress (Year 5)	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Parenting Stress (Year-1 lagged)	—	—	0.82***	0.08	0.18†	0.10	—	—	0.66***	0.08	0.41***	0.09
Parenting Stress (Year-3 lagged)	—	—	—	—	0.52***	0.06	—	—	—	—	0.39***	0.06
Cohabitation = 1	-0.03	0.15	-0.14	0.14	0.13	0.13	-0.16	0.14	-0.09	0.14	-0.07	0.13
Non-Hispanic Black	0.04	0.18	0.04	0.17	0.04	0.17	0.10	0.18	0.11	0.18	-0.17	0.17
Hispanic	0.28	0.18	0.18	0.17	-0.02	0.16	0.12	0.17	0.07	0.17	-0.32*	0.16
Non-Hispanic Other	0.66†	0.38	0.05	0.36	0.46	0.35	1.10**	0.38	0.84*	0.40	0.04	0.38
Couple is mixed race	0.21	0.22	0.30	0.20	0.06	0.20	-0.03	0.21	-0.04	0.21	0.00	0.20
High school diploma or equivalent	0.01	0.15	0.12	0.14	-0.04	0.13	0.15	0.15	0.11	0.15	0.40**	0.14
Some college	-0.10	0.17	0.10	0.16	0.06	0.15	-0.35*	0.16	-0.06	0.16	0.10	0.15
Bachelor's degree or higher	-0.27	0.37	-0.29	0.35	0.06	0.34	-0.31	0.37	-0.32	0.38	0.12	0.35
Parent's Age (in years)	0.02†	0.01	0.02†	0.01	0.00	0.01	-0.02†	0.01	-0.01	0.01	-0.01	0.01
Employed = 1	0.11	0.12	0.01	0.12	0.22†	0.11	-0.18	0.16	0.01	0.16	0.08	0.15
Social Support = 1	0.09	0.13	0.02	0.13	-0.09	0.12	-0.12	0.13	-0.11	0.13	-0.13	0.12
Parent's Health	0.00	0.07	-0.01	0.07	-0.06	0.06	0.09	0.06	-0.02	0.06	0.05	0.06
Parent's Depression	0.17	0.24	0.10	0.23	0.05	0.22	-0.33	0.23	-0.26	0.23	-0.15	0.22
Higher-order birth = 1	0.18	0.13	0.11	0.13	0.00	0.12	0.15	0.13	0.22†	0.13	0.07	0.12
# of children in HH < 18	0.06	0.05	0.04	0.05	-0.08†	0.05	0.04	0.05	0.08†	0.05	-0.05	0.05
Father's multipartnered fertility	-0.01	0.19	-0.08	0.18	-0.32†	0.17	-0.23	0.18	-0.09	0.06	-0.10	0.06
Mother's multipartnered fertility	-0.06	0.18	-0.16	0.17	-0.06	0.16	-0.19	0.16	-0.14*	0.06	-0.16*	0.06
Both parent's multipartnered fertility	-0.22	0.20	-0.08	0.19	0.08	0.18	-0.22	0.20	0.07	0.07	0.07	0.07
Father been incarcerated (Yr1)	0.21	0.15	0.19	0.14	0.14	0.14	0.11	0.15	0.14*	0.06	0.16*	0.06
Child's health	0.07	0.09	0.06	0.09	0.04	0.08	-0.08	0.09	-0.14	0.09	-0.02	0.08
Child is boy = 1	0.12	0.12	-0.07	0.11	0.33**	0.11	0.12	0.12	0.16	0.12	-0.14	0.11
Child's Temperament	0.16*	0.08	0.07	0.07	0.04	0.07	0.00	0.07	-0.02	0.07	-0.07	0.07

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10



Table 4.30: Parameter Estimates for Control Variables on Relationship Quality (Y-Standardized), by Persistent Poverty

Variables	Mother						Fathers					
	Random Effects		Cross-Lagged				Random Effects		Cross-Lagged			
	Relationship Quality		Relationship Quality (Year 3)		Relationship Quality (Year 5)		Relationship Quality		Relationship Quality (Year 3)		Relationship Quality (Year 5)	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Relationship Quality (Year-1 lagged)	—	—	1.60***	0.26	0.77*	.3	—	—	1.64***	0.26	0.78**	0.28
Relationship Quality (Year-3 lagged)	—	—	—	—	0.39***	.08	—	—	—	—	0.37***	0.07
Cohabitation = 1	.01	.21	-0.058	0.219	-0.155	0.21	0.02	0.20	-0.26	0.21	-0.14	0.19
Non-Hispanic Black	-.15	.26	-0.216	0.273	0.404	0.262	-0.06	0.26	-0.25	0.28	0.52*	0.24
Hispanic	-.32	.25	-0.298	0.261	0.49†	0.25	-0.23	0.24	-0.19	0.26	0.52*	0.23
Non-Hispanic Other	-.53	.65	0.033	0.682	0.118	0.656	-0.33	0.63	0.33	0.68	0.40	0.61
Couple is mixed race	-.09	.26	0.024	0.273	0.344	0.259	0.05	0.24	-0.06	0.26	0.45†	0.23
High school diploma or equivalent	-.03	.17	-0.218	0.178	-0.068	0.173	-0.08	0.17	-0.03	0.18	0.09	0.16
Some college	.12	.25	-0.119	0.263	0.157	0.252	-0.17	0.24	0.09	0.26	-0.47*	0.23
Bachelor's degree or higher	.25	.84	-0.77	0.883	0.345	0.864	0.09	0.49	0.91†	0.53	0.51	0.48
Parent's Age (in years)	.02	.02	0.03†	0.019	-0.004	0.019	0.01	0.02	0.01	0.02	0.00	0.01
Employed = 1	-.02	.16	0.116	0.174	0.044	0.167	0.24	0.17	-0.15	0.19	0.29†	0.17
Social Support = 1	-.04	.17	-0.166	0.174	0.118	0.168	0.15	0.16	-0.01	0.17	0.23	0.15
Parent's Health	.09	.08	0.08	0.083	0.048	0.081	0.05	0.08	0.05	0.08	0.00	0.07
Parent's Depression	-.26	.21	0.23	0.227	-0.01	0.222	-0.39	0.30	-0.21	0.32	-0.51†	0.28
Higher-order birth = 1	-.19	.17	0.154	0.182	-0.081	0.176	-0.20	0.17	0.19	0.18	-0.13	0.16
# of children in HH < 18	.01	.06	0.009	0.059	-0.012	0.057	0.03	0.06	0.00	0.06	-0.02	0.05
Father's multipartnered fertility	.34	.24	0.41†	0.247	-0.154	0.242	0.33	0.25	0.01	0.07	0.01	0.06
Mother's multipartnered fertility	-.12	.2	-0.309	0.214	0.018	0.206	-0.13	0.20	0.01	0.07	0.01	0.05
Both parent's multipartnered fertility	.28	.21	0.018	0.225	0.124	0.215	0.30	0.22	0.11	0.08	0.08	0.07
Father been incarcerated (Yr1)	-0.33†	.18	-0.34†	0.182	-0.19	0.181	-0.36*	0.17	-0.09	0.07	-0.07	0.05
Child's health	-.04	.09	0.077	0.092	-0.065	0.088	0.00	0.08	0.05	0.09	-0.07	0.08
Child is boy = 1	.17	0.15	0.038	0.16	0.082	0.154	0.17	0.15	-0.08	0.16	0.10	0.14
Child's Temperament	-0.23*	0.10	-0.073	0.103	-0.17†	0.098	-0.28**	0.10	-0.10	0.11	-0.14	0.09

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

Table 4.31: Parameter Estimates for Control Variables on Parenting Stress (Y-Standardized), by Persistent Poverty

Variables	Mother						Fathers					
	Random Effects		Cross-Lagged				Random Effects		Cross-Lagged			
	Parenting Stress		Parenting Stress (Year 3)		Parenting Stress (Year 5)		Parenting Stress		Parenting Stress (Year 3)		Parenting Stress (Year 5)	
	B	SE	B	SE	B	SE	B	SE	B	SE	B	SE
Parenting Stress (Year-1 lagged)	—	—	0.66***	0.10	0.40***	0.11	—	—	0.75***	0.08	0.25*	0.11
Parenting Stress (Year-3 lagged)	—	—	—	—	0.39***	0.08	—	—	—	—	0.43***	0.08
Cohabitation = 1	-0.11	0.22	0.07	0.20	-0.07	0.19	0.03	0.24	-0.05	0.19	-0.06	0.19
Non-Hispanic Black	0.07	0.28	0.21	0.25	-0.26	0.24	-0.33	0.30	0.05	0.24	-0.19	0.24
Hispanic	-0.17	0.26	0.02	0.24	-0.12	0.23	-0.36	0.29	0.02	0.23	-0.40†	0.23
Non-Hispanic Other	0.10	0.69	-0.14	0.63	0.59	0.60	-0.33	0.74	-0.29	0.60	-0.24	0.60
Couple is mixed race	-0.37	0.27	0.13	0.25	-0.39	0.24	0.20	0.28	0.16	0.23	-0.23	0.23
High school diploma or equivalent	0.00	0.18	-0.19	0.17	0.13	0.16	0.25	0.20	0.40*	0.16	0.03	0.16
Some college	-0.09	0.26	0.17	0.24	0.07	0.23	0.15	0.28	0.26	0.23	0.23	0.23
Bachelor's degree or higher	0.70	0.89	2.41**	0.80	0.16	0.80	0.11	0.58	0.24	0.48	0.14	0.47
Parent's Age (in years)	0.04†	0.02	0.04*	0.02	0.01	0.02	-0.01	0.02	-0.03*	0.01	0.00	0.02
Employed = 1	-0.30†	0.17	-0.19	0.16	0.13	0.15	-0.36†	0.20	-0.35*	0.16	0.01	0.17
Social Support = 1	0.39*	0.17	0.20	0.16	0.08	0.16	-0.10	0.18	-0.19	0.15	-0.42**	0.15
Parent's Health	-0.15†	0.08	-0.13	0.08	0.08	0.07	-0.19*	0.09	0.02	0.08	-0.15†	0.08
Parent's Depression	0.35	0.22	0.30	0.21	0.10	0.20	-0.05	0.35	-0.41	0.28	0.40	0.28
Higher-order birth = 1	-0.19	0.18	-0.12	0.17	-0.25	0.16	0.28	0.20	0.13	0.16	-0.26†	0.16
# of children in HH < 18	0.02	0.06	0.09	0.06	0.02	0.05	-0.04	0.07	-0.02	0.05	0.06	0.05
Father's multipartnered fertility	-0.01	0.25	-0.15	0.23	0.39†	0.22	-0.33	0.28	-0.08	0.06	-0.09	0.06
Mother's multipartnered fertility	-0.09	0.21	0.13	0.20	-0.06	0.19	-0.09	0.23	-0.14*	0.05	-0.14*	0.05
Both parent's multipartnered fertility	0.12	0.22	0.27	0.21	0.30	0.20	0.03	0.25	0.06	0.06	0.06	0.07
Father been incarcerated (Yr1)	-0.19	0.19	-0.22	0.17	0.05	0.17	0.12	0.20	0.14*	0.06	0.14*	0.06
Child's health	-0.17†	0.09	-0.02	0.09	-0.23**	0.08	0.06	0.10	0.01	0.08	-0.09	0.08
Child is boy = 1	-0.41**	0.16	-0.18	0.15	-0.17	0.14	-0.06	0.17	0.06	0.14	0.03	0.14
Child's Temperament	-0.04	0.10	0.01	0.10	0.08	0.09	-0.21†	0.11	-0.05	0.09	-0.10	0.09

\*\*\*p < .001; \*\*p < .01; \*p < .05; †p < .10

## CHAPTER V

### *Discussion & Conclusion*

#### **RE-INTRODUCTION**

Empirical studies indicate that, on average, children living in stable, two-parent, well-functioning, and higher income families tend to have better overall well-being (Brown 2004, 2010; Teachman 2008). In contrast, children living with unmarried parents (or low-income married couples) are at an increased risk of experiencing family instability and economic disadvantage (Avellar and Smock 2005; Jalovaara 2003; Lichter, Qian, and Mellott 2006), which is associated with adverse outcomes such as academic and behavioral problems (McLanahan 2004, 2009; Thomson, Hanson, and McLanahan 1994). These disadvantages can set the stage for long-term intergenerational inequality for many children and families (Amato and Cheadle 2005; Sobolewski and Amato 2005).

Based on these prior findings, and with intentions to improve the stability and quality of intimate partners with children, policymakers have put forth efforts to build strong families by strengthening couple relationships as a way to encourage family stability and favorable outcomes for children. Initial arguments about strengthening couple's relationships were based on assumptions that many low-income families did not value marriage (e.g., Karney and Bradbury 2005). To the contrary, qualitative and quantitative studies show that low-income couples desire to marry but other factors such as the lack of financial resources and other interpersonal stressors hinder many parents from getting or staying married (Edin and Kefalas 2005; Edin 2000; Gibson-Davis, Edin, and McLanahan 2005; Randles 2012). Thus, if state and federal policy-makers are serious about building strong families, programmatic efforts must also help to directly tackle the

interpersonal and contextual stressors many couples experience (Johnson 2012; Karney and Bradbury 2005).

Since the emergence of policies that are aimed at strengthening couple's relationships, empirical studies have consistently found that intimate partners are faced with challenges that affect both the parent-child and mother-father relationship after the birth of a child (Nomaguchi and Milkie 2003). Yet, as current family policies stand, many scholars question the effectiveness of state and federal strategies for strengthening couple relationships because they do not address the intricacies of dyadic relationships, especially interpersonal and contextual stressors (for a review of the debate, see Hawkins, Amato, and Kinghorn 2013; Hawkins and Ooms 2012; Hawkins, Stanley, et al. 2013; Johnson 2012, 2013, 2014). Moreover, given the differences between social groups in the levels of both parental stress/distress and dyadic/couple functioning, can policy efforts be culturally sensitive and context-specific in the implementation of programs to strengthen couple's relationships? There is no simple answer to this question. However, it may be beneficial to address couple's parental and contextual stressors as these factors contribute to the stability and quality of intimate partners.

Thus, the research presented in this dissertation is concerned with parental stress/distress that affect couple's relationships, and the extent to which positive, supportive relationships reduce parental stress and distress. Further, the three empirical essays that are included in this dissertation addressed how these processes unfold following the birth of a child as this is a critical time when couples are more vulnerable to parental stress and relationship strain (Nomaguchi and Milkie 2003). Last, this research examined contextual factors moderated the associations. Undoubtedly, there is much

complexity in family and dyadic relationships. Examining parental stress and dyadic functioning together can help unpack and highlight this complexity by revealing the relative importance of these factors and how they vary across social contexts. A discussion of the research findings from the prior chapters is provided below.

## **DISCUSSION**

### ***Conceptual & Theoretical Model***

Drawing on several theoretical perspectives, I have attempted to create an integrated conceptual and theoretical model that addresses the longitudinal and reciprocal association between parental stress/distress and dyadic functioning, whether these processes vary across social context, and whether the association changes over time. This framework builds on prior conceptual models that emphasize the importance of stress and contextual factors for studying intimate partners (Huston 2000; Johnson 2012; Karney and Bradbury 1995). By emphasizing the direct and reciprocal pathways between parental stress/distress and dyadic functioning, and examining the continuity and change in these processes as a function of children's early developmental stages, this dissertation pays attention to the multilayered and interdependent nature of many factors that affect each individual parent and the intimate partnership. Scholars continue to suggest that taking a more holistic approach (as implemented in this research) advances our understanding of couple dyads in theoretically and empirically informed ways (Helms 2013). The conceptual and theoretical model was thus used as a blueprint to guide the empirical analyses across the analytic studies in Chapters II, III, and IV.

In Chapter II, I investigated the association between economic hardship, parents' depressive symptoms, and relationship distress. This study was executed in two parts: the first part examined the longitudinal, dyadic, and reciprocal association between economic

hardships and parents' depressive symptoms, and the second part focused on the effects of both economic hardship and parents' depressive symptoms on mothers' and fathers' report of relationship distress. The findings revealed that hardships lead to higher levels of depressive symptoms as children age from infant to toddler for both mothers and fathers, and from toddler to preschool for mothers only. Reciprocally, maternal depressive symptoms was associated with an increase in family hardships as children aged from infant to toddler. Also, during the preschool years (age 5), economic hardship and depressive symptoms increased relationship distress for both mothers and fathers. These findings were similar across married and cohabiting couples.

Overall, consistent with family stress (Conger, Conger, and Martin 2010; Umberson and Reczek 2007) and stress crossover (Bolger et al. 1989; Neff and Karney 2007; Thompson and Bolger 1999) perspectives, Chapter II showed that economic hardship have consistent effects on parents' mental health over time, and mother's early mental health contributes to later family hardships. Moreover, each parent's mental health creates distress within the relationship revealing both an actor and cross-partner effect which extends prior studies on parental mental health and relationship outcomes.

Chapter III explored parents' depressive symptoms and coparenting as a longitudinal and reciprocal process. Using a series of actor-partner interdependent models, the results showed that depressive symptoms lowered coparenting for mothers and fathers as their child aged from one to three-years of age, and for mothers only as their child aged from three- to five-years of age. Conversely, coparenting reduced the rate of depressive symptomology for parents at the Year-1 to Year-3 (infant to toddler) but not Year-3 to Year-5 (toddler to preschool). These findings corroborate the few studies

that previously investigated this association (e.g., Cabrera, Shannon, and La Taillade 2009; Elliston et al. 2008). Further, the results also revealed that depressive symptoms was associated with a decline in coparenting for Hispanic mothers and fathers, White mothers, and Black mothers and fathers. Conversely, cooperative coparenting was associated with lower depressive symptoms levels for Black fathers, White fathers and mothers.

Taken together, the Chapter III results indicated that mental health is detrimental to coparenting relationship, especially among mothers. Conversely, cooperative coparenting reduced mental health risk for fathers. Not only do these results corroborate findings from prior studies, they also advance our knowledge of the importance of coparenting within couple dyads by showing that parents who work together in the joint enterprise of child rearing has mental health advantages. These findings also suggest that more culturally sensitive approaches to mental health and coparenting are needed because the processes that drive them can differ across race and ethnicity and children's developmental stages.

Chapter IV examined the longitudinal and reciprocal association between parenting stress and couple's relationship quality. Using several analytic techniques, the findings revealed that parenting stress for both mothers and fathers was associated with lower levels of couple's relationship quality. Couple relationship quality was also linked to lower levels of parenting stress in both the fixed- and random-effects models. The cross-lagged model revealed that, for mothers, early positive reports of couple's relationship quality lowered maternal parenting stress at the later years. The findings also

showed that, among families who experienced no poverty and families who experienced persistent poverty, being in a positive relationship reduced maternal parenting stress. By

In many ways, Chapter IV demonstrated that parenting stress and couple's relationship quality are empirically related, as shown in with prior studies. The longitudinal results extend prior finding, however, by showing that couple's relationship quality in the early years lowers maternal parenting stress at the later years. Early parenting stress, however, does not affect the quality of the relationship at the later years. Simply put, supportive partnerships leads to less stress in the parenting role, at least for mothers.

The theoretical and conceptual model guiding this dissertation provides a framework for understanding intimate partnerships after the birth of a child. The framework underscores the complexity of couple dyads by highlighting the parental stressors, dyadic functioning, the social context, and the stability and change in these factors as their child develops over time. Given that the findings in the analytic chapters corroborates findings from previous research, this dissertation moves this line of research on dyadic relationships forward by simultaneously examining both mediating and moderating factors that contribute to the quality of intimate partnerships. Echoing Huston's (2000: 299) social ecological model of marriage and other intimate unions, the present framework builds on the idea that:

- (a) marriages are interpersonal systems (and hence must be studied as small groups), (b) that spouses' psychological and physical qualities shape their individual and collective efforts maintain a successful union, (c) that both marriage relationships and the partner themselves are dynamic (i.e., they change by context and they evolve over time), and (d) the martial union are embedded in a social context.



The research presented here is rooted in similar concepts and attempts to shine new light on the complex portrait of families by revealing that family life involves interrelated systems that contribute to parental stress/distress and the quality of intimate partnerships. The intentions of this framework was to paint a more holistic picture of couple dyads, and provide a step forward in theorizing and empirically testing the association between important familial processes.

Indeed, the analytic chapters within this dissertation provide novel evidence that research among relational dyads can be best understood when both members of the family (i.e., mothers and fathers) are examined in an ecologically sensitive way. These findings can be used to assist in efforts to help strengthen couple's relationships and thus children's well-being.

### ***Implications***

This dissertation has important implications for both research and policy. In terms of research, the results underscore and highlight the notion that individuals within families are interdependent (Cox and Paley 1997; O'Brien 2005) and parents are involved in "interlocking trajectories" as their child ages and develops over time (Elder, George, and Shanahan 1996; Elder 1998). Clearly, focusing on stress or support for only one parent is unlikely to be sufficient. The variations across chapters points to the overall complexity of family life. Thus, rather than driving home a consistent message, the results illustrate that different domains, whether dyadic or individual, personal or interpersonal, move according to their own rules. The implication is that targeting a single specific pathway may not be sufficient to influence a multiplicity of outcomes. To positively influence family life, multiple pathways must be targeted if we, as a society, are willing to help families achieve adequate financial support and family stability. These findings enhance

our understating of interpersonal and contextual stressors, dyadic functioning, reciprocity among couples, and the cross-partner associations within couples. Future research can continue to expand our understanding on complex, multi-layered familial processes by using integrated theoretical frameworks with advanced analytic techniques (e.g., Helms 2013).

In regards to policy implications, policymakers have put forth efforts (e.g., Deficit Reduction Act of 2005) to strengthen couples' relationships by allocating \$100 million a year for 5 years to help couples form and maintain healthy marriages and relationships through free marriage and relationship education (MRE) programs, especially among low-income families (Brown 2010; Dion 2005). Recently, in 2011, funding was continued for three additional years—although the amount was reduced to \$75 million (Hawkins, Amato, et al. 2013). The results from this dissertation reveal that there are some important stressors (e.g., economic hardships, depressive symptoms, and parenting stress) that affect the quality of intimate partnerships. Moreover, being in a positive, well-functioning partnership that promotes healthy interactions between partners and allows partners to work together for the benefit of the child (i.e. cooperative coparenting) plays an important role in the reduction in parental stress/distress.

Thus, these findings suggest that social policies, in tandem with building relationship skills, should also target families' economic, mental health, and stress in the parenting role which could yield important benefits for couple's relationships (e.g., Letiecq, Anderson, and Joseph 2013). In addition, it appears that strengthening couple's relationships has promising benefits for parents, and policy efforts should also

incorporate ways to focus on increasing coparenting between parents as these family processes have been shown to be valuable for children's well-being.

### *Limitations*

Although the research presented in this dissertation provide important insight to the study of stress/distress and dyadic functioning among couple dyads up to five years after the birth of a child, there are some limitations that must be noted. First, given that each chapter uses data from parents who live together over time, some of the respondents drop out of the study due to attrition or relationship dissolution. These respondents are more economically disadvantage, race and ethnic minorities, and cohabitators, who are all likely to experience more stress/distress and less positive interactions. As such, the findings may be underestimating the association between parental stress/distress on dyadic functioning, and overestimating the association between dyadic functioning on parental stress/distress. Second, because the FFCW study focuses exclusively on families living in urban areas, the inferences do not extend to the general population. Notably, the findings are consistent with predominately white, middle-class samples, with some nuance in the results across social groups. Lastly, given the complexity of the theoretical model, I did not explicitly test for parents' personal qualities such as self-esteem, mastery, problem solving abilities, and a host of other factors that may serve as important and mediating factors that affect the longitudinal and reciprocal association between parental stress/distress and dyadic functioning (e.g., Helms 2013). Indeed, future research extending the dyadic models used here is warranted.

### *Strengths*

Despite the limitation, this dissertation makes an important contribution to the study of couple dyads after a recent birth. First, by combining complex family processes into an

integrated model, each empirical study attempts to unveil the mechanisms that affect couple dyads. This approach yielded important advances to family research because it allows multiple factors to interact, and thus shines new light on family processes that are often hidden in cross-sectional models, or models that aggregate over broad age ranges of the child and so cannot capture how processes vary after a child's birth. Second, taking advantage of the dyadic data, the analytic techniques employed in the empirical chapters simultaneously take into account both the intra-individual and inter-dyadic processes. Last, using a representative sample of births to urban parents, the findings from this dissertation corroborate and extend prior research on couples that have been disproportionately small, White middle-class samples. Specifically, in an era of increased need for more diverse empirical studies on couple dyads, this research is well-positioned to add to growing body of knowledge that seeks to improve couple's relationships in order to reduce inequality, and ensure children's well-being.

## **CONCLUSION**

This dissertation used a large sample of urban parents who had a child in the late 1990s to examine the following: (a) stress/distress affects dyadic functioning, (b) positive dyadic functioning can reduce stress/distress, (c) how these processes vary across social context, and (d) over time. Taking advantage of the longitudinal design of these data and using multiple analytic strategies, the findings reveal novel associations between parental stress/distress and dyadic functioning, which appears to be critically important for family life. In summary, the aggregate findings in this dissertation revealed that stressed parents make less supportive partners, and having a supportive partner is a valuable resource for stressed parents. Taking together, these findings suggest that the stress-dyadic functioning conundrum may be best understood using multiple theoretical perspectives

and advanced analytic techniques to address the complex and dynamic ways in which couples experience their lives, especially after the birth of a child.

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