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HIV DISCLOSURE AND FAMILY PROCESSES AMONG MOTHERS LIVING WITH HIV
AND THEIR CHILDREN: A MIXED-METHODS LONGITUDINAL INVESTIGATION

by

NADA M. GOODRUM

Under the Direction of Lisa P. Armistead, Ph.D.

ABSTRACT

Despite recent reductions in HIV incidence in the U.S., African American and Latina women remain significantly overrepresented in HIV prevalence rates. Many women living with HIV are primary caregivers and are now living long enough to raise their children. Mothers living with HIV (MLH) face unique stressors, including elevated parenting stress, barriers to effective parenting, decisions related to disclosing their HIV status, and risk of child adjustment difficulties. Though studies have demonstrated cross-sectional relations among these family processes for MLH and their children, none have explored these processes transactionally across time. The current study was a longitudinal, mixed-methods examination of mothers' HIV

disclosure to children and its interplay with parenting quality, parenting stress, and child psychosocial adjustment. In the context of a randomized controlled trial evaluating an HIV disclosure intervention, a sample of 174 MLH and their children were recruited from two sites. Quantitative data were collected over four waves spanning 15 months. Qualitative data were collected with a subsample of 14 families in which disclosure had occurred. Two longitudinal structural equation modeling approaches—latent change score (LCS) modeling and cross-lagged panel analysis (CLPA)—were employed to examine relations among HIV disclosure, child adjustment, parenting, and parenting stress. Qualitative interviews were conducted to enrich the quantitative findings by further exploring families’ perspectives of these processes. Results of LCS models demonstrated that HIV disclosure led to subsequent improvements in parenting stress and children’s perceptions of parent-child communication and relationship quality. Changes in parenting stress inversely predicted changes in parental involvement. In the CLPA framework, several unidirectional and bidirectional relations were observed between mean levels of parenting stress and child adjustment, between child-reported parenting quality and child adjustment, and between child- and mother-reported parenting quality and parenting stress. Qualitative themes mirrored quantitative findings and provided explanation and contextualization for these findings. Results highlight the complex and multifaceted nature of the interplay among HIV disclosure, parenting practices, parenting stress, and child functioning. Findings suggest that MLH should be supported in disclosing their serostatus to their children to minimize parenting stress, bolster parenting skills, and promote positive outcomes for youth.

INDEX WORDS: HIV/AIDS, HIV disclosure, Parenting, Parenting stress, Child, Mixed methods, Longitudinal

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NADA M. GOODRUM

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Georgia State University

2019

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May 2019

DEDICATION

This dissertation is dedicated to the community of mothers and children affected by HIV who participated in this study. Thank you for allowing us into your lives and stories. Knowing you has been an honor and a highlight of my work, and I am inspired and encouraged by your resilience.

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1 INTRODUCTION

An estimated 36.9 million people are currently living with HIV globally, and women are increasingly recognized as an at-risk group for HIV infection (UNAIDS, 2018). Though incidence of HIV is on a downtrend in the U.S., African American and Latina women remain 18 times and 4 times, respectively, more likely to be HIV positive than Caucasian women (CDC, 2018). Many women living with HIV are primary caregivers of one or more children. With increased access to antiretroviral therapy, the face of the HIV epidemic has shifted dramatically, and the life expectancy for people living with HIV is approaching that of non-infected adults (Samji et al., 2013; Siddiqi, Hall, Hu, & Song, 2016). Mothers living with HIV (MLH) are now living long enough to raise their children. However, MLH and their families face a range of stressors, including elevated parenting stress, disrupted parenting quality, difficult decisions related to HIV disclosure, and compromised child psychosocial outcomes (Chi et al., 2015; Murphy, Roberts, & Herbeck, 2011; Tompkins & Wyatt, 2008). Although researchers have demonstrated cross-sectional associations among family processes (Chi et al., 2015; Murphy, Marelich, Armistead, Herbeck, & Payne, 2010), few studies have examined these transactional processes longitudinally or using mixed methods among families affected by maternal HIV. Given the unique challenges MLH and their families face, a longitudinal, mixed-methods examination of these processes is needed.

1.1 Impact of HIV Infection on MLH and Children

Maternal HIV has a profound impact on family processes and child psychological well-being, in addition to introducing unique stressors. The process model of parenting (Belsky, 1984) posits that parenting quality is determined primarily by three domains of influence: parents' own personalities and psychological resources, child characteristics, and contextual sources of stress

and support. Parents' psychological stress is thought to influence their capacity for positive parenting. Similarly, children's temperament, behavior, and emotions shape parenting quality. Belsky points out that the "fit" between the characteristics of the child and the parent may be a more important influence on the quality of parenting than the child's characteristics per se. Finally, Belsky's theory takes an ecological approach to understanding parenting, emphasizing that beyond the parent's and child's contributions, the social environment has an important influence on parenting. Applied to MLH, the isolation associated with non-disclosure of HIV to friends and family (Smith, Rossetto, & Peterson, 2008) is a contextual factor that may pose a risk not only to MLH's psychological adjustment but also to their parenting and, in turn, child adjustment. Conger and colleagues' (2002) family stress model may also illuminate mechanisms by which families are affected by maternal HIV. The family stress model posits that economic hardship indirectly influences youth adjustment via caregiver distress, co-caregiver conflict, and strained parenting quality. Consistent with Belsky's (1984) and Conger and colleagues' (2002) theoretical frameworks, research has demonstrated that HIV infection has a multifaceted impact on MLH and their children. HIV infection may influence children's psychological well-being directly, as well as indirectly through associated stressors, such as economic strain, compromised parenting, increased parenting stress, and the difficult decision of whether to disclose HIV status to children.

1.1.1 Direct Impact of HIV Infection on Child Well-Being.

A growing body of research has demonstrated that HIV has deleterious effects on children's psychological adjustment, regardless of whether children are aware of their mothers' HIV status (see Chi & Li, 2013, for a review). Research on the effect of HIV on children's well-being has examined three domains of adjustment: emotional, behavioral, and social competence.

Children of MLH experience more difficulties in each of these domains than children of non-infected parents (DeVane Fair, 2006; Doku, 2009; LeCroix et al., 2019; Tompkins & Wyatt, 2008). A recent review concluded that children affected by HIV exhibited more depression, anxiety, traumatic stress, somatization, loneliness, suicidal ideation, and hopelessness, as well as more disruptive behaviors, sexual risk behaviors, delinquency, and conduct problems, compared to their non-affected counterparts (Chi & Li, 2013). Further, children affected by HIV experienced more peer problems, including poorer social competence, social skills, self-esteem, school interest, quality of life, hope toward the future, and locus of control. These effects were demonstrated across various methodological approaches, measurement strategies, and age ranges. A study conducted among Black South African MLH suggested that mothers' health, including physical and psychological health, may have a particularly important direct relation with child internalizing (vs. externalizing) symptoms (LeCroix et al., 2019). Although the impact of HIV appears to be similar for children living with an HIV-positive parent compared to children orphaned by HIV/AIDS (Chi & Li, 2013; Doku, 2010), one study demonstrated that the former group experienced even more difficulties with loneliness and self-esteem than those orphaned by AIDS (Fang et al., 2009), suggesting that not only potential HIV-related loss, but also the stress of living with an ill parent may negatively impact children. The difficulties experienced by children of MLH may be even more pronounced among children whose mothers have not disclosed their HIV serostatus, as many of these children suspect that something is wrong but do not have an explanation for the stress in the home (Murphy, Steers, & Dello Stritto, 2001). Chi and Li (2013) called for more longitudinal studies to examine the impact of HIV on children over time, as well as a more comprehensive investigation of cultural and contextual risk and protective factors for children's adjustment.

Longitudinal studies examining family processes and youth adjustment among families affected by HIV are rare. However, a few studies have examined the over-time relation between living with a parent who is HIV-positive and youth adjustment. For example, a longitudinal study by Forehand and colleagues (2002) demonstrated that children living with an HIV-positive mother reported significantly more internalizing problems than children not affected by HIV, and parenting was a significant longitudinal predictor of child adjustment among both groups. Though this study was conducted in the late 1990s and early 2000s, when mortality associated with HIV was higher, more recent studies corroborate the longitudinal association between HIV and child functioning. A recent 12-year longitudinal study revealed that MLH's physical health (e.g., viral load) was a significant longitudinal predictor of child adjustment difficulties, including higher levels of anxiety, depression, and aggression, as well as worse self-concept (Murphy, Marelich, & Herbeck, 2012). Research has also provided evidence of long-term outcomes that may impact youth into adulthood. For example, in a 15-year longitudinal follow-up with the same sample as above, mothers' physical health was associated with children's parental attachment and career readiness over time (Murphy, Marelich, Herbeck, & Cook, 2016).

The impact of HIV on children is well-documented—particularly in cross-sectional studies—and likely occurs through several indirect mechanisms, including parenting quality, parenting stress, mothers' physical limitations, and mothers' emotional well-being. Though not directly assessing the impact of HIV on children, the current study seeks to explore processes affecting mother and child well-being among these families.

1.1.2 HIV Infection and Parenting Quality.

In addition to the direct link between MLH's physical health and child functioning, HIV impacts children indirectly via disruptions in positive parenting. Important aspects of positive

parenting include relationship quality, involvement, and communication. Parents' active role in their children's lives, including in academic and social activities, is known as parental involvement (Pearson, Muller, & Frisco, 2006). Parent-child relationship quality is defined as the support parents provide children through warmth, affection, and nurturing (Barber, Stolz, Olsen, Collins, & Olsen, 2005). Parent-child communication refers to the content, frequency, and quality of conversations between parents and youth (Markham et al., 2010). Research has revealed that maternal HIV infection is associated with worsened parent-child relationship quality and involvement (Jones, Forehand, Brody, & Armistead, 2002; Murphy, Roberts, et al., 2011; Reyland, McMahon, Higgins-Delessandro, & Luthar, 2002), which are in turn associated with poorer child adjustment (Murphy, Armistead, Marelich, & Herbeck, 2015). In one study, children of MLH perceived their mothers as less warm and supportive compared to non-affected children (Forehand et al., 2002). This study also provided some evidence that HIV may compromise the effectiveness of MLH's parenting in relation to youth adjustment; for some effects, researchers found that parent-child relationship quality was less effective in preventing youth adjustment difficulties among families affected by HIV compared to non-affected families. Among a sample of South African MLH, maternal health predicted child externalizing problems indirectly via compromised parent-child relationship quality (LeCroix et al., 2019), suggesting that mothers' health-related difficulties may spill over to impact their parenting and, in turn, child functioning.

A recent study conducted among a sample similar to that of the current study—MLH with 6- to 14-year old children—examined the parenting deficits and skills of MLH and the association between parenting and child adjustment (Murphy et al., 2015). The researchers found that mothers reported considerable difficulty with certain aspects of parenting, such as

involvement and communication. Murphy and colleagues posited that MLH may experience low confidence in their parenting skills (e.g., as evidenced by MLH's relatively low parenting self-efficacy ratings), and this lack of efficacy, combined with lack of resources and physical limitations due to HIV, may impede mothers' ability to employ effective parenting strategies. These hypotheses are consistent with the process model of parenting (Belsky, 1984) as well as previous research suggesting that HIV infection may impede effective parenting via a number of mechanisms, including physical health limitations, poverty, elevated depression and anxiety related to HIV, increased child behavioral problems, depleted coping resources, loss of social support, and/or attenuated parental self-efficacy (Armistead & Forehand, 1995; Dorsey, Klein, Forehand, & Group, 1999; Lachman, Cluver, Boyes, Kuo, & Casale, 2014).

1.1.3 HIV Infection and Parenting Stress.

Distinct from parenting quality, parenting stress arises when caregivers perceive that the demands of childrearing outweigh their resources and ability to meet these demands (Deater-Deckard, 1998; Morgan, Robinson, & Aldridge, 2002). This mismatch results in parents' negative feelings toward themselves and/or their children. Consistent with Belsky's process model of parenting, parenting stress is conceptualized as a result of a combination of parent characteristics, child characteristics, and contextual factors (Abidin, 1992; Deater-Deckard, 1998). High levels of parenting stress are predictive of worse parenting quality (Abidin, 1992).

Families affected by chronic illness tend to report higher levels of parenting stress (Billhult & Segesten, 2003; Cousino & Hazen, 2013; Uzark & Jones, 2003). Faced with managing a chronic illness—either their own or their children's—parents experience stress related to general childrearing responsibilities as well as illness-specific responsibilities. This stress may lead to compromised physical health for the ill family member as well as worse

psychosocial adjustment for children and parents (Cousino & Hazen, 2013). The literature on parenting stress among families affected by chronic illness is largely limited by a reliance on cross-sectional studies (Cousino & Hazen, 2013). Thus, it is unclear how parenting stress may intersect with other family processes, such as parenting and child adjustment, over time.

Beyond chronic illness, other contextual factors may place parents at greater risk for experiencing high levels of parenting stress. Parents in low socioeconomic conditions may face elevated parenting stress (Gleeson, Hsieh, & Cryer-Coupet, 2016; Reitman, Currier, & Stickle, 2002). Further, parents with lower self-efficacy about their parenting tend to report higher levels of parenting stress (Raikes & Thompson, 2005). These findings, coupled with the process model of parenting (Belsky, 1984), suggest that MLH likely face multiple risk factors for parenting stress. Many MLH experience low socioeconomic status and must balance financial strain with a chronic illness and childrearing responsibilities (Murphy et al., 2010). They are also likely to report low parenting self-efficacy (Dorsey et al., 1999; Lichtenstein, Laska, & Clair, 2002; Smith et al., 2008). However, few studies have examined parenting stress among families affected by HIV. One study among a sample of MLH demonstrated that these mothers experienced clinically significant parenting stress at much higher rates compared to the general population and compared to parents living with a chronically ill child (Johnson et al., 2015). HIV infection may compromise MLH's sense of self-efficacy around parenting and create doubts about their ability to parent effectively while managing their illness (Dorsey et al., 1999; Hackl, Somlai, Kelly, & Kalichman, 1997). Further, parenting stress is associated with a range of negative outcomes for families. Among a sample of primarily Latina MLH who had not disclosed their HIV status to their children, MLH's anxiety and stress—including parenting stress—was related to worse parenting skills, such as implementing family routines, parent-child communication skills, and

consistent discipline (Murphy et al., 2010). Within the current sample, parenting stress was cross-sectionally associated with multiple aspects of family functioning, including family cohesion, family routines, and parent-child communication (Schulte et al., 2017). Consistent with a call in the literature to examine parenting stress as a potential mediating process in the functioning of families affected by HIV (Lachman et al., 2014), the current study will examine the longitudinal relations between parenting stress and other family processes, including parenting practices, HIV disclosure, and child adjustment.

1.1.4 Decision to Disclose HIV Infection to Children.

MLH are faced with the difficult decision of whether, and when, to disclose their HIV serostatus to their children. For many MLH, this is a primary challenge of living with HIV (Armistead, Tannenbaum, Forehand, Morse, & Morse, 2001; Murphy, 2008; Qiao, Li, & Stanton, 2013a). Some MLH are reluctant to disclose due to concerns that the child is too young to understand, that the child will disclose to others, that the child will be angry or resentful, or that she will be unable to answer the child's HIV-related questions in a developmentally appropriate manner (Armistead, Klein, Forehand, & Wierson, 1997; Murphy, 2008; Palin et al., 2009; Qiao et al., 2013a). In spite of the valid hesitation around disclosure, non-disclosure has been linked to impairments in MLH's physical and psychological functioning (Murphy et al., 2001). Non-disclosure may also negatively impact children. Even children whose mothers have not disclosed may experience stress related to the limited information they have about their mothers' health. For example, one study in which a majority of MLH had not disclosed revealed that 92% of mothers reported that their children knew that they were taking medication, and 39% of these families reported that the children seemed worried or anxious about their mothers' medication (Murphy et al., 2001).

In contrast, HIV disclosure to children has in some cases been associated with positive outcomes for families, such as less aggression and better self-esteem for children, more social support for mothers, and stronger parent-child bonds and communication (Lee & Rotheram-Borus, 2002; Murphy et al., 2001; Qiao et al., 2013a). A recent review suggested that, although children may evidence short-term emotional and behavioral difficulties, long-term outcomes for children are generally positive (Qiao et al., 2013a). However, one study revealed *higher* rates of externalizing problems among children whose mothers had disclosed versus those who had not (Palin et al., 2009). This study found no effect of disclosure on internalizing symptoms. Overall, despite some conflicting literature, it appears that HIV disclosure is of central importance in MLH's individual functioning, relationships with their children, parenting skills, and children's adjustment. However, it is less clear which family factors predict disclosure vs. non-disclosure and how the impact of disclosure may unfold over time. Thus, the current study examined HIV disclosure as both a predictor and outcome of several family processes, including parenting practices, parenting stress, and child emotional and behavioral adjustment.

Parents' disclosure of their HIV status to their children has been examined for the past two decades (e.g., Armistead & Forehand, 1995; Armistead et al., 1997, 2001). Since that time, HIV disclosure has primarily been conceptualized as whether or not parents tell their children about their HIV serostatus—typically as a dichotomous variable. However, theories of disclosure suggest that disclosure occurs as a process that unfolds over time (Qiao, Li, & Stanton, 2013b). To more closely reflect this conceptualization, the current study examined disclosure ordinally, including nondisclosure, partial disclosure, and full disclosure. This measurement approach affords the opportunity to capture gradual disclosure over time. Further, the qualitative portion of

this study will approach disclosure as a process, rather than one discrete event, and explore the unfolding of the disclosure process over time.

1.2 Transactional Relations among Parenting Practices, Parenting Stress, HIV

Disclosure, and Child Outcomes

Consistent with systems theory (Sameroff, 2009, 2010), emphasizing the transactional nature of parent-child behaviors across development, parenting practices, parenting stress, and child psychosocial adjustment appear to mutually influence one another over time among families not affected by HIV (Barbot, Crossman, Hunter, Grigorenko, & Luthar, 2014; Neece, Green, & Baker, 2012). Several meta-analyses have demonstrated robust concurrent, and to a lesser extent, longitudinal associations between parenting and externalizing behaviors, particularly among older children and adolescents (Hoeve et al., 2009; Loeber & Stouthamer-Loeber, 1986; Rothbaum & Weisz, 1994). Although the field remains largely limited by its reliance on cross-sectional research, the body of longitudinal research examining these family processes is growing. Across early and middle childhood, parenting stress and child behavior problems are both antecedents and consequences of one another (Neece et al., 2012). Among adolescents, parental support and control and adolescent externalizing behaviors and substance use were transactionally related to one another over a period of one year (Stice & Barrera, 1995). A systematic review of longitudinal studies investigating parenting and adolescent alcohol use highlighted several parenting practices that were longitudinally related to reductions in alcohol use, including parental monitoring, discipline, parent-child relationship quality and parental support (Ryan, Jorm, & Lubman, 2010). Similarly, empirical studies have provided support for longitudinal relations between parenting practices and externalizing behaviors such as aggression

and delinquency (e.g., Beyers, Bates, Pettit, & Dodge, 2003; Kim & Brody, 2005; Serbin, Kingdon, Ruttle, & Stack, 2015).

Although reciprocal effects of parenting and youth adjustment are sometimes found to be stronger when examining externalizing behaviors, compared to internalizing symptoms (Reitz, Dekovic, & Meijer, 2006), research has found that parenting practices and internalizing difficulties also mutually predict one another over time. For example, a study among disadvantaged French Canadian families demonstrated that mother-reported positive parenting and teacher-reported child internalizing problems were significantly reciprocally related, such that more internalizing problems at Wave 1 predicted more positive parenting at Wave 2, which in turn predicted *fewer* internalizing problems at Wave 3 (Serbin, Kingdon, Ruttle, & Stack, 2015). It appears that parents may be responding to their children's internalizing problems by increasing their use of effective parenting strategies, which in turn confers benefits for children's emotional adjustment. Additionally, inconsistent discipline has been shown to predict subsequent negative emotionality, and child irritability predicted more inconsistent discipline among a community sample of mother-child dyads (Lengua & Kovacs, 2005). In a large sample of girls assessed between ages 7 and 12, child depression and parental warmth predicted one another across time, though the effect of parental warmth on depression was stronger than the reverse (Hipwell et al., 2008).

Despite a growing body of literature demonstrating reciprocal relations between parenting and child adjustment among the general population, few longitudinal studies have examined family processes among HIV-affected families, and none have examined these processes transactionally over time. Further, there are few qualitative studies examining parenting and child adjustment among this population. One longitudinal quantitative study

demonstrated that, over the course of 12 years, MLH's physical health and health-related anxiety significantly predicted children's adjustment problems, such as depression, anxiety, aggression, and self-concept (Murphy et al., 2012). In the same sample, a 15-year follow-up revealed that mothers' physical health significantly predicted children's parental attachment and career readiness (Murphy et al., 2016). Murphy et al. (2002) also demonstrated that HIV disclosure predicted decreases in child depressive symptoms over a period of one year. Further, among a sample including both HIV-affected and non-affected families, parenting practices at baseline were longitudinally related to child internalizing and externalizing outcomes at four-year follow-up (Forehand et al., 2002). A cross-sectional study among MLH and their children in rural China demonstrated direct and indirect linkages among parenting stress, parenting quality, and child adjustment (Chi et al., 2015). Similarly, another cross-sectional study demonstrated that child behavior problems predicted worse parenting among caregivers living with HIV (Lachman et al., 2014). These findings, coupled with evidence that MLH's parenting has important effects on child adjustment (Murphy et al., 2010), suggest the possibility of transactional relations between child and parent contributions over time among families affected by HIV.

These limited quantitative longitudinal findings have largely been supported by a few qualitative studies (Antle, Wells, Goldie, DeMatteo, & King, 2001; Murphy, Roberts, & Hoffman, 2005). For example, qualitative work has highlighted that parents living with HIV experience stress related to their parenting and perceive that their parenting quality suffers as a result of their illness (Antle et al., 2001). These challenges are further compounded by families' poverty, limited resources, stigma, and stress related to the decision of HIV disclosure. Additionally, another qualitative study revealed that following MLH's disclosure of HIV to their children, many children reacted with an initial increase in anxiety, which subsided over time

(Murphy et al., 2005). However, this pattern has not been thoroughly investigated quantitatively across time, and qualitative work in this area is still limited.

Though these quantitative and qualitative studies represent important steps in understanding family functioning among MLH and their children, much remains unknown in this field. Specifically, the transactional, longitudinal relations among HIV disclosure, family processes (e.g., parenting stress and quality), and child adjustment is unclear. Further, mixed-methods research that integrates qualitative and quantitative findings on these processes is very limited. An advantage of a mixed-methods approach is the ability to utilize qualitative results to deepen, contextualize, and inform interpretation of quantitative findings (Fetters, Curry, & Creswell, 2013). Taken together in a mixed-methods study, qualitative and quantitative findings may complement one another to provide a deeper, fuller picture of family processes and HIV disclosure among these families.

Despite evidence of elevated parenting stress, the challenges of HIV disclosure-related decisions, disruptions in parenting, and child adjustment difficulties among HIV-affected families (Armistead & Forehand, 1995; Forehand et al., 1998; Kotchick et al., 1997), it is unclear how each of these processes predicts change in the others over time. Parents' and children's qualitative perceptions of these processes is also unknown. Thus, the current study aimed to disentangle the temporal order and determinants of change among these family processes, and to explore mothers' and children's qualitative perceptions of the interplay among these processes. Figure 1.1 displays the overall conceptual model for the study.

1.3 Current Study

Maternal HIV infection has a profound impact on families and children (Chi & Li, 2013; Murphy et al., 2015, 2012). However, reciprocal relations among parenting stress, parenting

practices, HIV disclosure, and child adjustment have not been examined longitudinally among families affected by HIV. Given the unique challenges and stressors MLH and their families face, a longitudinal examination of these processes is warranted. Thus, guided by the process model of parenting (Belsky, 1984), the purpose of this mixed-methods study is to examine the longitudinal relations among various family stressors and processes with child outcomes.

The first aim of this dissertation was to quantitatively examine the longitudinal, transactional relations among HIV disclosure, parenting stress, parenting practices, and child adjustment among a sample of MLH and their 6 to 14-year-old children. This aim was achieved through latent change score modeling and cross-lagged panel analysis. I hypothesized that parenting stress would predict less positive parenting and more child adjustment difficulties over time. In turn, positive parenting practices and child adjustment problems would be reciprocally inversely related to one another. Child adjustment difficulties would also predict increases in parenting stress over time. In accordance with previous findings (Murphy, Marelich, & Hoffman, 2002), HIV disclosure may be associated with short-term adjustment difficulties for children but, over time, would predict improvements in child adjustment.

The second aim of this study was to qualitatively explore the interrelations among parenting practices, parenting stress, HIV disclosure, and child emotional and behavioral adjustment over time, in order to enrich and contextualize findings from Aim 1. Through Aim 2, I also explored the process of HIV disclosure and its perceived impact on family functioning, child adjustment, parenting practices, and parenting stress. Qualitative interviews were conducted with a subsample of families to achieve this aim. Results of Aims 1 and 2 inform clinical interventions with these families by highlighting relevant targets for treatment.

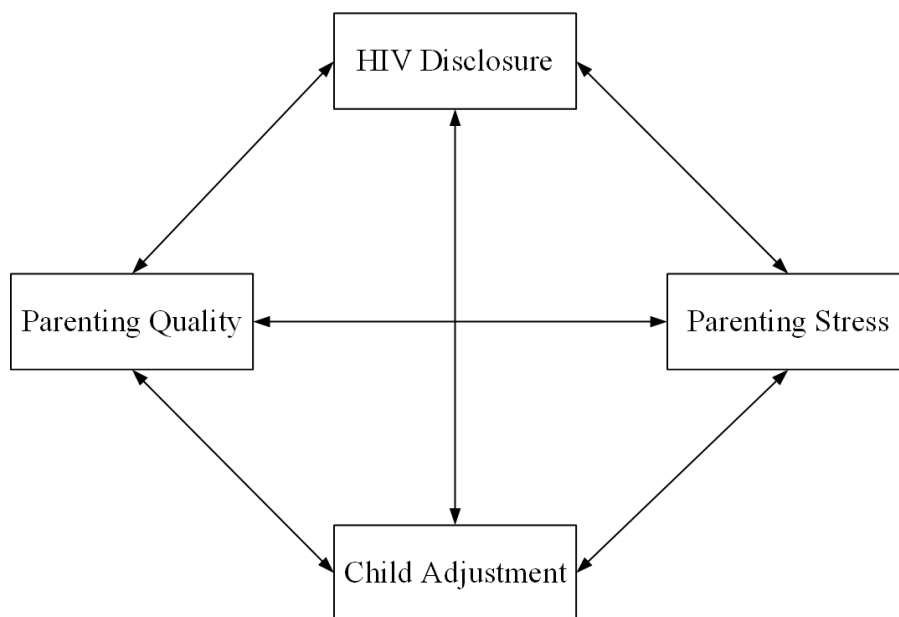


Figure 1.1 Conceptual model displaying transactional relations among HIV disclosure, parenting quality, parenting stress, and child adjustment across four time points.

2 METHOD

The aims of the current study were to (1) quantitatively examine the transactional longitudinal relations among HIV disclosure, parenting stress, parenting practices, and child adjustment among a sample of MLH and their 6 to 14-year-old children and (2) qualitatively explore the interrelations among parenting practices, parenting stress, HIV disclosure, and child emotional and behavioral adjustment over time.

2.1 Overview and Study Design

The current study consisted of three phases: (1) quantitative data collection and analysis; (2) qualitative data collection and analysis; (3) integration of quantitative and qualitative findings. This study used a sequential explanatory mixed-methods design (Ivankova et al., 2006), in which the qualitative portion of the study is intended to elaborate, enrich, and deepen the quantitative findings. Qualitative and quantitative data were integrated during the study design, intermediate, and interpretation stages of the study (Ivankova et al., 2006). In the study design stage, the initial research questions (e.g., “How does HIV disclosure interplay with other family processes and child adjustment over time?”) were formulated to be addressed through both quantitative and qualitative methods. During the intermediate stage, quantitative findings were used to guide the purposive selection of participants for the qualitative interviews (Creswell et al., 2003). Quantitative hypotheses also informed the development of the qualitative interview protocol in Phase II, such that interview probes were created to explain, deepen, and contextualize the quantitative findings. Appendices J and K contain the qualitative protocol for mothers and children, respectively. Based on hypotheses about HIV disclosure and its relation to child and family functioning, qualitative interviews included probes regarding the unfolding of

the disclosure process over time and its perceived impact on children. Qualitative interviews also explored mothers' and children's perceptions of how parent and child processes may be transactional. In the interpretation stage, findings were integrated such that qualitative results were utilized to interpret, contextualize, and provide explanations for the quantitative results. For example, hypotheses that were confirmed during the quantitative phase were elaborated upon using the qualitative findings. For hypotheses that were not confirmed, qualitative findings were used to generate potential explanations for the inconsistency and insight for model re-specification. Qualitative findings were also utilized to highlight directions for future quantitative research. The integration of quantitative and qualitative findings in this mixed-methods study strengthens the existing literature by providing a richer and more contextualized view of HIV disclosure and family processes in this population.

The quantitative data for the proposed research were drawn from a larger longitudinal NIMH-funded study testing the efficacy of an HIV disclosure intervention called Teaching, Raising, and Communicating with Kids (TRACK-II). The parent study, Maternal HIV: Multisite Trial to Assist Disclosure to Children, enrolled a total of 174 MLH and their 6 to 14-year-old children ($N = 348$) across two sites: Georgia State University in Atlanta, GA, and University of California, Los Angeles. MLH in the TRACK-II program were randomly assigned to the intervention (3 individual sessions) or waitlist control condition. Families from both conditions were included in the current study, and group assignment was included as a covariate in quantitative analyses. Qualitative interviews were conducted at both sites with a subsample of MLH and their children who completed the TRACK-II study and in which full disclosure had occurred.

2.2 Participants and Inclusion/Exclusion Criteria

Mother-child dyads were eligible for the TRACK-II study if the mother had a confirmed HIV/AIDS diagnosis and was the primary caregiver of a well child (not HIV+) between the ages of 6 and 14. Children must have lived with the mother and been unaware of her HIV serostatus. Families must also have been English or Spanish speaking. Parents and children provided informed consent and assent, respectively, in order to participate. Families were excluded from the study if the child had a previous suicide attempt or impaired intellectual functioning ($IQ < 75$) based on maternal report. Families were also excluded if the parent or child self-reported or demonstrated psychosis. If mothers had more than one non-infected child in the targeted age range, the target child was chosen using random selection. Mothers could be any female primary caregiver, including biological mother, grandmother, aunt, or other female caregiver. However, the terms “mother” and “MLH” will be used henceforth to refer to all female caregivers in the sample. The quantitative analyses for the proposed study were completed with 174 dyads who were in either the control or intervention condition ($N = 348$), accounting for group assignment. The qualitative analysis included a subsample of 14 families, with interviews conducted with 14 mothers and 13 children in which HIV disclosure had occurred ($n = 27$). One child whose mother was interviewed could not be located for interview.

2.3 Phase I: Quantitative Data Collection and Analysis

2.3.1 Interviewer Training.

Quantitative data were collected for the parent (TRACK-II) study by trained interviewers. Initial interviewer training was conducted at UCLA and included topics such as recruitment, informed consent, confidentiality, conducting young child interviews, triage of emergency cases,

the interviewing program, and tracking and retention. All interviewers attended weekly supervision to receive feedback throughout the study.

2.3.2 *Informed Consent and Assent.*

Informed consent and assent were obtained from mothers and children, respectively, at the beginning of the baseline appointment and at the beginning of the qualitative interview appointment. All informed consents and assents were read aloud to participants to ensure that any participants with lower reading skills were given the opportunity to hear the entire consent form. Mother's informed consent included consent for her participation and permission for the child's participation. Given that this sample of children is young, assent of the children was conducted at every assessment timepoint to ensure that they remembered key points (e.g., that they may ask for breaks or refuse to answer any question).

2.3.3 *Computer-Assisted Field Interviewing.*

Quantitative data were collected using Computer Assisted Personal Interview (CAPI) software, which serves to reduce missing data and out-of-range codes and to decrease costs and publication lag. Interviews were conducted in the family's home, at the research office, or at the recruitment site, based on the family's preference. All child interviews were conducted in English. Mother interviews at the GSU site were also conducted in English, and those at the UCLA site were conducted in English or Spanish, according to the mother's preference. Mother and child interviews were conducted simultaneously by two separate interviewers in separate rooms. Quantitative data were collected at baseline and at 3-, 9-, and 15-month follow-ups.

2.3.4 Recruitment and Participation Incentives.

Both sites recruited participants through partnerships with a range of community agencies. Research staff provided a written and verbal project description to agencies. Staff at the recruitment sites described the study and provided brochures to potentially eligible mothers. Following initial contact by interested individuals, research staff screened potential participants for inclusion and exclusion criteria. All interested mothers were informed of the purpose of the study, the fact that the study would be presented to the children only as a study of mother-child communication, and that the mothers' diagnosis would not be discussed with the children.

Mother baseline and follow-up interviews typically lasted 75 minutes, and child interviews lasted approximately 45 minutes. Mothers were paid \$60 in cash for each assessment, and children were given \$30 in gift cards. The reimbursement plan was reviewed and approved by the universities' Institutional Review Boards.

2.3.5 Participant Demographic Characteristics.

MLH reported on their age, education, employment, household income, race/ethnicity, and marital status, as well as children's age, gender, and race/ethnicity. Roughly half (51.4%) of the children in the sample were girls. The average age of children was about 10 ($M = 9.65$, $SD = 2.49$), and the average age of mothers was 39 ($M = 39.24$, $SD = 7.90$). The sample represents a diverse range of ethnic groups. One-third of the mothers and 35% of children identified as Latino or Hispanic, with Mexico identified as the most common country of origin (78.3% of Latino families). Families reported a range of racial identifications, including Black/African American (56.1% of mothers and 57.2% of children), White (34.4% of mothers and 31.1% of children), multiracial (6.7% of mothers and 9.4% of children), American Indian or Alaska Native (1.7% of mothers and 1.1% of children), Asian (0.6% of mothers and children), and Native Hawaiian or

other Pacific Islander (0.6% of mothers and children). As anticipated, the ethnic breakdown of the sample reflects the demographic impact of the HIV epidemic in Atlanta and Los Angeles (CDC, 2014).

Most mothers were single parents; mothers' relationship status included never married (44%), married (20%), separated (14.9%), divorced (13.1%), and widowed (8%). About half (52.6%) of mothers reported having other adults living in the household. Mothers reported a wide range of education and socioeconomic levels; 16.6% of mothers completed eighth grade or less, 28% completed some high school, 19.4% finished high school, 2.9% completed a GED, 5.7% attended vocational or technical school, 22.9% completed some college, and 4.6% earned a college degree or higher. At baseline, approximately one-third (30.3%) of mothers were employed in the last 30 days. Among those who were employed, the average number of hours worked weekly was 27.55 ($SD = 12.06$). The median and modal reported household monthly income, including income from other adults living in the household, was \$1,200, though reported incomes ranged from \$0 ($n = 2$) to \$6000 ($n = 1$).

2.3.6 Measurement tools.

MLH and children participating in the TRACK-II study completed interviews assessing a range of outcomes, including HIV disclosure, family functioning, maternal physical and mental health, child adjustment, and other constructs. The following measures were included in the current study. All measures are displayed in the Appendices. Additional details regarding the measurement tools, including confirmatory factor analyses and establishment of longitudinal measurement invariance, are described in the Results section.

2.3.6.1 Parenting stress.

The Parenting Stress Index, short form (PSI; Abidin, 1990; Appendix A) is a 36-item scale completed by MLH. It includes three domains: Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child. The Parental Distress domain refers to parents' perceptions of their functioning as a parent and distress within the parental role (e.g., "I feel trapped by my responsibilities as a parent"). Parent-Child Dysfunctional Interaction assesses the extent to which parents find interactions with the child to be difficult and non-reinforcing (e.g., "My child rarely does things for me that make me feel good.") Finally, the Difficult Child subscale refers to the parent's perception of the child's temperament and demandingness (e.g., "My child seems to cry or fuss more often than most children."). Subscales have acceptable internal consistency ($\alpha = .80$ to $.87$) and good test-retest reliability ($r = .85$). This measure has previously been used with samples of MLH and their children (Murphy et al., 2010; Silver, Bauman, Camacho, & Hudis, 2003).

2.3.6.2 Parenting practices.

Four measures of parenting practices were used, including two parent report measures and two child report measures.

2.3.6.2.1 Parent-Child Communication scale.

Children completed the Parent-Child Communication Scale (PCC; Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998; Appendix B), a 10-item measure with a Likert-type scale ranging from *1 = Almost Never* to *5 = Almost Always*. Sample items include, "Do you think that you can tell your mother how you really feel about things?" and "Is your mother a good listener?" Previous studies conducted among a similar sample to that in the current study have

also utilized the PCC and demonstrated adequate psychometric properties (Murphy, Armistead, Payne, Marelich, & Herbeck, 2017).

2.3.6.2.2 Conflict Behavior Questionnaire.

MLH and children completed the Conflict Behavior Questionnaire, short form (CBQ; Prinz, Foster, Kent, & O’Leary, 1979; Appendices C and D), which assesses relationship quality between parents and children. The measure includes 20 items assessed on a dichotomous True/False scale. Though many of the items correspond between reporter, mother and child reports also include unique items. Sample items include “My mom seems to be always complaining about me” (child), “[Child] almost never understands my side of an argument” (mother), and “We almost never seem to agree” (both mother and child). Certain items are reverse scored such that higher scores indicate better relationship quality. This measure has previously been used extensively with a range of diverse populations, including families affected by HIV/AIDS (Armistead et al., 2014, 1997; Forehand et al., 2002; Goodrum, Armistead, Tully, Cook, & Skinner, 2017; Tompkins & Wyatt, 2008).

2.3.6.2.3 Alabama Parenting Questionnaire.

MLH were administered the Alabama Parenting Questionnaire, Involvement and Positive Parenting scales (APQ; Frick, 1991; Appendix E). These two scales consist of 16 statements rated on a 5-point Likert type scale from *1 = Never* to *5 = Always*. A sample item is “You praise [Child] if he/she behaves well.” The measure has demonstrated adequate psychometric properties (Frick, 1991) and has been employed among samples similar to the current study sample (Murphy et al., 2017).

2.3.6.3 HIV disclosure.

The process for assessing HIV disclosure was similar to that of the TRACK pilot, conducted with a similar sample as the current study (Murphy, Armistead, Marelich, Payne, & Herbeck, 2011). MLH reported whether they had disclosed their HIV serostatus to the target child using a series of quantitative (e.g., yes/no) and qualitative open-ended items (see Appendix F). The first item is, “Have you or anyone else disclosed to [Child] that you are HIV-positive?” Response options include “Yes, just me,” “Yes, someone else,” “Yes, me and someone else,” “No, no one” and “Maybe.” Based on the response to this item, participants were asked follow-up probes to assess possible partial or full disclosure (e.g., for a “no” response, “You did not disclose that you were HIV-positive to [Child]. Did you disclose anything about your illness to [Child]? For example, that you have an illness, even if you didn’t tell him/her the name of the disease?”).

Each participant’s responses were coded on an ordinal scale with 0 = *No disclosure*; 1 = *Partial disclosure*, and 2 = *Full disclosure* based on a set of coding criteria established by the TRACK-II research team, which are described in Appendix F. Criteria for full disclosure are met only if the mother reports that she has used the term “HIV” or “AIDS” in disclosing her illness to her child. Criteria for partial disclosure are met if the mother has told the child that she has an illness or sickness but has not disclosed the name of the illness. Nondisclosure status indicates that the mother either has not disclosed anything about her illness or has disclosed that she has an illness other than HIV which she does not actually have (e.g., cancer, diabetes, etc.).

2.3.6.4 Child psychosocial adjustment.

Both MLH and children reported on children’s internalizing and externalizing outcomes, including depression, anxiety, and aggression.

2.3.6.4.1 Children's Depression Inventory.

The Children's Depression Inventory (CDI; Kovacs, 1985; Appendix G) was administered to children and assesses depressive symptoms over the past two weeks. Each of the 27 items consists of three statements that are scored on a scale from 1 to 3 (e.g., *1 = I am sad once in a while; 2 = I am sad many times; 3 = I am sad all the time*). Some items are reverse scored such that higher total scores indicate more depressive symptoms. The measure has good reliability ($\alpha = .82$ for the TRACK pilot) and validity (Kovacs, 1985). The CDI has previously been used in the TRACK pilot study among a sample of MLH and their children (Murphy, Armistead, Marelich, Payne, & Herbeck, 2011) as well as with other samples of children of MLH (Forehand et al., 2002).

2.3.6.4.2 Child Behavior Checklist.

MLH reported on children's adjustment using the Child Behavior Checklist (CBCL; Achenbach, 1991; Appendix I), which provides scores for internalizing symptoms and externalizing behaviors. The aggression and anxiety subscales were each included as a manifest indicator for the latent factor of child psychosocial adjustment. The CBCL consists of 51 items with a 3-point response scale from *1 = Not True to 3 = Very True or Often True*. Sample items include "Argues a lot," "Feels worthless or inferior," and "Temper tantrums or hot temper." The CBCL demonstrates good reliability and validity (Achenbach, 1991) and has been extensively utilized among diverse samples (Jones, Forehand, Brody, & Armistead, 2002; Tomkins & Wyatt, 2008).

2.3.7 Quantitative Data Analysis.

All quantitative analyses were conducted in Mplus 8 (Muthén & Muthén, 2017). Aim 1 was analyzed using both latent change score (LCS) modeling and cross-lagged panel analysis

(CLPA). First, in order to empirically validate the use of scale scores, a series of confirmatory factor analyses (CFAs) were used to establish the measurement models for each construct. Longitudinal measurement invariance of each construct across the four time points was evaluated. Univariate longitudinal outcomes for each construct across time were examined through univariate LCS models and in an autoregressive panel model framework.

Bivariate latent change score modeling was employed to examine determinants of change among HIV disclosure, parenting practices, parenting stress, and child outcomes. In addition to estimating interrelations among variables across time points, latent change score models allow for the estimation of change in one variable (e.g., child adjustment) as a function of change in another variable (e.g., parenting practices) at a previous time point (Ferrer & McArdle, 2009). The LCS framework combines aspects of autoregressive cross-lagged panel analysis and latent growth curve modeling, producing an alternative modeling approach that examines time-dependent change as the outcome of interest, rather than observed scores. LCS modeling allows for the direct estimation of growth or change of each variable, beyond interrelations among mean levels across time (Ferrer & McArdle, 2009). Figure 2.1 displays a conceptual model for a bivariate latent change score model.

A form of the commonly utilized autoregressive panel modeling, cross-lagged panel analysis (CLPA) is best suited to answer questions related to interindividual variability, including estimating the interrelations among constructs over time (Little, 2013). This method can estimate stability of a construct from one timepoint to the next (autoregressive paths) as well as the relation of a construct at one timepoint with another construct at a later timepoint (cross-lagged paths). CLPA is advantageous in its ability to test reciprocal effects, measure interindividual variation, and estimate over-time effects of one variable on another while

accounting for their concurrent correlation (Selig & Little, 2012). A primary limitation of this method is that it does not incorporate an explicit theory of change and does not account for intraindividual change (Selig & Little, 2012). Another limitation of CLPA is that it assumes all estimates are constant across individuals (Hamaker, Kuiper, & Grasman, 2015; Selig & Little, 2012). Despite its limitations, this method remains widely utilized and is particularly appropriate for modeling the interrelations among variables over time. CLPA has been commonly employed in previous research among families not affected by HIV (e.g., Neece et al., 2012; Stice & Barrera, 1995). Thus, in addition to LCS modeling, CLPA was also utilized to facilitate comparison of the current study findings with previous research among the general population. Specifically, CLPA in a structural equation modeling (SEM) framework was employed to estimate the longitudinal reciprocal interrelations among HIV disclosure, child psychosocial adjustment, parenting practices, and parenting stress. Figure 2.2 displays an example of a bivariate CLPA model.

Analyses were conducted using maximum likelihood (ML) and Bayesian estimation, as appropriate. Inference statistics (e.g., confidence intervals and *p* values) obtained in ML estimation are based on large sample asymptotic theory, the assumptions of which may not be met in the current sample. In contrast, Bayesian estimation does not rely on these assumptions and can accommodate small sample sizes (Van de Schoot, Broere, Perryck, Zondervan-Zwijnenburg, & Van Loey, 2015). Thus, Bayesian estimation was used to confirm the inference of the ML results with assumptions relaxed. Where possible, group assignment was included as a covariate in multivariate analyses, to account for the potential impact of the HIV disclosure intervention. Although the analyses were potentially underpowered to detect small effect sizes given the sample size ($n = 174$ dyads), the amount of information was bolstered by the use of

repeated measures across four time points. Further, the use of Bayesian estimation served as a sensitivity test to confirm the inference of the ML results.

For clarity of presentation, additional details about the analytic strategy are described in the Results section concurrently with the findings of each modeling approach.

2.4 Phase II: Qualitative Data Collection and Analysis.

2.4.1 *Qualitative Interview Procedures.*

To enrich and contextualize quantitative findings, qualitative data were collected from a subsample of 14 mothers and 13 children ($n = 27$) who had completed the TRACK-II study. Although some children who had completed TRACK-II were older adolescents (e.g., up to 18 years old) at the time of qualitative follow-up interviews, only families with children between 7 and 16 years old were included in the qualitative subsample. This age range was selected to maintain and reflect the developmental frame of the quantitative portion of the study.

Individual in-depth qualitative interviews were conducted separately with mothers and children by the PI and another graduate research assistant. Informed by the quantitative findings of Aim 1, qualitative interviews covered topics such as parenting, parenting stress, child adjustment, and HIV disclosure (see Appendix J and K for interview protocols for mothers and children, respectively). Dyads were recruited using a purposive sampling strategy (Miles & Huberman, 1994), in which families are selected in a nonprobabilistic manner to capture a wide range of experiences. It was expected that data saturation would be achieved within 16 interviews or less (Guest, Bunch, & Johnson, 2006). Only families in which full HIV disclosure had occurred were recruited for qualitative interviews to provide a deeper exploration of the process of HIV disclosure and its perceived influence on parenting and youth adjustment.

Children whose mothers had not disclosed their HIV status were excluded from the qualitative phase of the study because they could not be interviewed about the disclosure process. During the screening process, mothers were asked to confirm whether they had disclosed their HIV status to their children, and mothers were informed of and provided verbal consent to the fact that HIV would be discussed during their children's interview if they chose to participate.

Informed consent was obtained from mothers, and the consent process again highlighted that children would be specifically asked about their mothers' HIV status. Before proceeding with mother and child interviews, mothers were asked to confirm that their children knew about their HIV status. Children's assent was obtained after mothers had completed the consent process. As with the quantitative assessments, qualitative interviews were conducted in English or Spanish, based on the family's preference. A licensed clinical psychologist was on-call for emergency situations at both sites, though no emergency situations arose. The interviews were conducted at the family's home, the research office, or the recruitment site, according to the family's preference. Qualitative interviews lasted approximately 75 minutes for mothers and 60 minutes for children. As with the quantitative interviews, MLH who completed qualitative interviews were paid \$60 in cash, and children were given \$30 in coupons for goods (e.g., gift certificate).

2.4.2 *Qualitative Data Analysis.*

Qualitative interviews were transcribed verbatim by two trained graduate research assistants. Spanish interviews were transcribed, translated to English, and back-translated to Spanish to ensure accuracy, according to the method specified by Brislin (2006). After being transcribed, the qualitative interviews were analyzed using a grounded theory approach (Strauss & Corbin, 1994). This "ground-up" approach involves an iterative process of establishing codes,

grouping the codes into key concepts, and organizing the concepts into broader themes. In addition to this approach, pre-established categories or themes based on the quantitative models of Aim 1 were used as a guide to group data. NVivo (version 11) software was used to conduct these analyses. This software package facilitates coding, storage, retrieval, and analysis of large amounts of transcribed data. Qualitative coding was conducted by a team of three graduate research assistants. Each qualitative interview was coded by the lead coder and one additional coder. The codebook was created in an iterative, collaborative process. Weekly coding meetings were held to reach a consensus on the codes for each interview, and previously coded interviews were reviewed to ensure consistency in the codebook. In the final phase of the study, qualitative findings were explored to enrich the conclusions drawn based on the quantitative results.

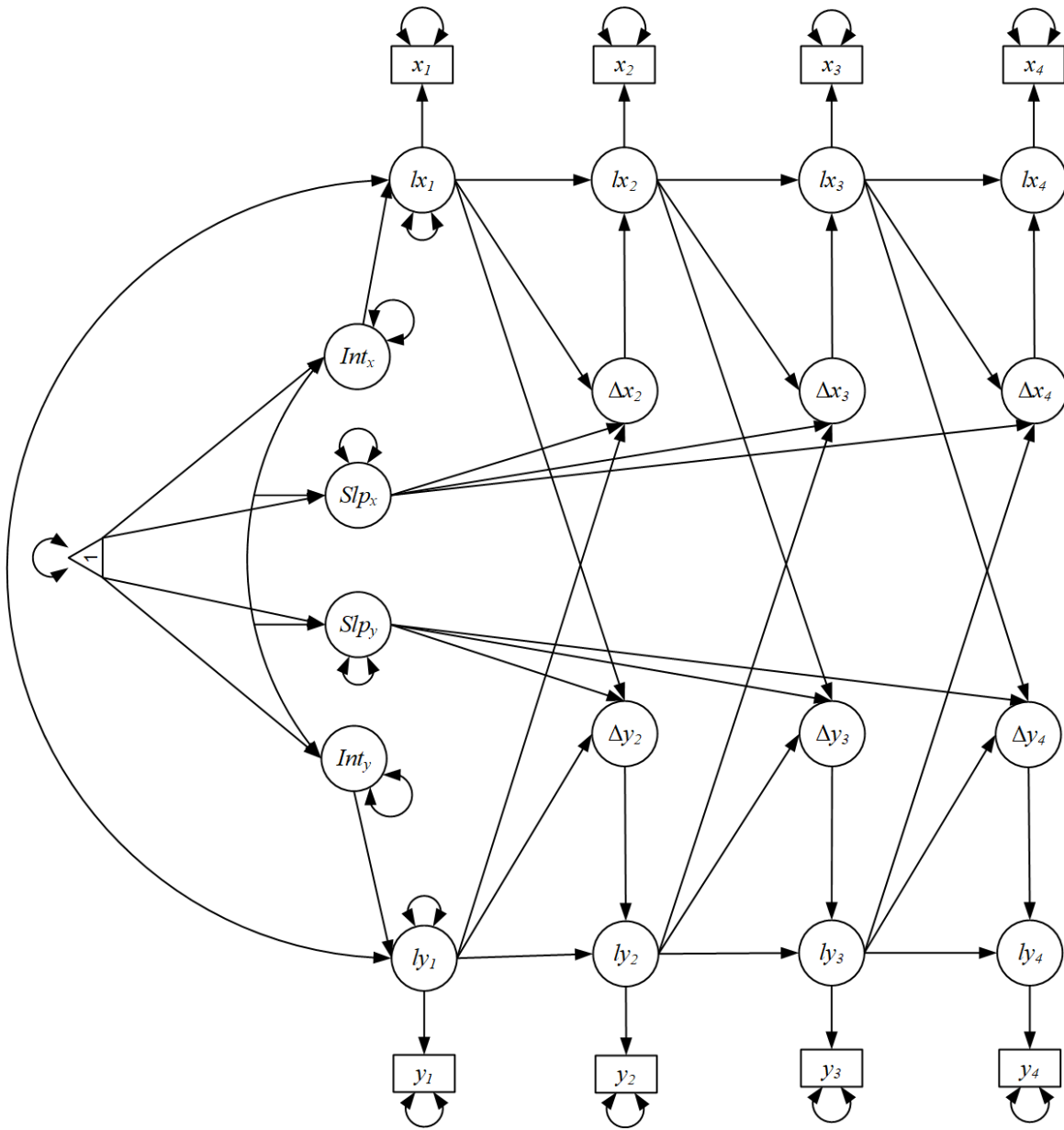


Figure 2.1 Example bivariate latent change score model.

Note. Adapted from Grimm, Ram, & Estabrook (2016) and Curran & Bauer (2017). Observed scores are represented by x_1 - x_4 and y_1 - y_4 . Latent true scores are represented by lx_1 - lx_4 and ly_1 - ly_4 . Latent change scores are represented by Δx_1 - Δx_4 and Δy_1 - Δy_4 . Constant change is represented by *int* and *slp* factors. The true score from each timepoint (e.g., lx_1) and the latent change score (e.g., Δx_2) together comprise the latent true score for the subsequent timepoint (e.g., lx_2). The latent change scores (Δx_1 - Δx_4 and Δy_1 - Δy_4) are determined by the true scores of each variable at baseline (lx_1 and ly_1) and the constant change components (*int* and *slp*).

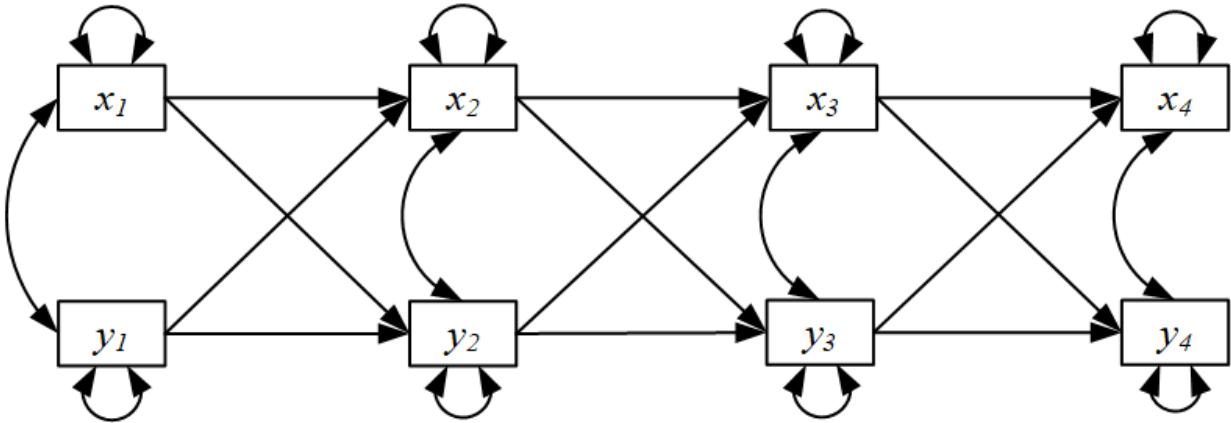


Figure 2.2 Example Bivariate Autoregressive Cross-Lagged Panel Model.

Note. Observed scores are represented by x_1 - x_4 and y_1 - y_4 . Single-headed arrows represented regression paths. Double-headed arrows between variables represent within-time correlations. Curved double-headed arrows on each variable represent residual variances.

3 RESULTS

3.1 Quantitative Findings

An overview and summary of the quantitative results is presented in Table 3.1. Conceptual depictions of statistically significant longitudinal associations are displayed in Figure 3.1a (LCS models) and Figure 3.1b (CLPA models).

3.1.1 *Measurement invariance.*

Model fit indices and likelihood ratio tests for all longitudinal measurement invariance models can be found in Table 3.2.

3.1.1.1 *Children's Depression Inventory (CDI).*

The CDI, a 27-item measure, was subjected to a unidimensional confirmatory factor analysis (CFA) at each timepoint, which demonstrated good fit to the data across timepoints. Longitudinal measurement invariance testing for the CDI revealed no significant differences in the chi-square values across the configural, metric, and scalar models. Thus, the CDI demonstrated scalar invariance across timepoints, and the items were summed to create a scale score, as is commonly done with this instrument (Kouros, Quasem, & Garber, 2013). Possible scores could range from 27 to 81, with higher scores indicating more depressive symptoms.

3.1.1.2 *Child Behavior Checklist (CBCL).*

Two subscales of the CBCL were used: Aggressive Behavior and Anxious/Depressed. Items were measured on a 3-point response scale from *1 = Not True* to *3 = Very True or Often True*. Measurement invariance was evaluated separately for each subscale. For the Aggressive Behavior subscale, model fit indices revealed good model fit across timepoints. Chi-square

difference tests indicated no significant differences across configural, metric, and scalar invariance models, suggesting that the measure demonstrates scalar invariance across time. All items across timepoints loaded onto the respective latent factor significantly with standardized factor loadings ranging from 0.50 to 0.88. As in previous studies (e.g., Kouros et al., 2013), the items were averaged to create a scale score.

The Anxious/Depressed subscale demonstrated good model fit across timepoints. The configural, metric, and scalar invariance models fit the data well, and chi-square difference tests revealed no significant decrement in fit. The scale demonstrated scalar invariance, and all items were averaged to create a scale score.

3.1.1.3 Conflict Behavior Questionnaire (CBQ)

Mothers and children each completed the CBQ, assessing parent-child relationship quality. Factor analysis of the parent report items revealed good model fit across timepoints with no significant decrement in fit across configural, metric, and scalar invariance models. Most items loaded onto the scale significantly with standardized factor loadings at baseline ranging from 0.58 to 0.86. However, one item, “[Child] and you compromise during arguments”, had a factor loading of $-.03$ (*n.s.*) at baseline. The pattern of loadings was consistent and invariant across time; thus, all items were retained and were averaged to create a scale score.

A CFA of the child-reported items also demonstrated good model fit across timepoints and within configural, metric, and scalar invariance models. A chi-square difference test revealed no significant differences between the configural and metric model. Though the chi-square difference test comparing the metric and scalar models was significant, the scalar model demonstrated good model fit with similar fit indices as the metric model (e.g., change in RMSEA < 0.001 ; change in CFI = 0.001; change in TLI < 0.001). Based on literature suggesting that

comparisons of alternative fit indices (beyond chi-square difference tests) perform reasonably well in evaluating measurement invariance (Little, 2013; Cheung & Rensvold, 2002), longitudinal invariance was accepted and items were averaged to create a scale score. For both parent and child report, higher scores indicate stronger parent-child relationship quality.

3.1.1.4 Parent-Child Communication Scale (PCC)

A CFA for the child-reported Parent-Child Communication scale fit the data well across timepoints. All items loaded onto the factor positively and significantly except for one item, “Are there certain things that your mother does not allow you to discuss with her?” This item had a nonsignificant factor loading across all timepoints. Chi-square difference tests revealed no significant differences in model fit across the configural, metric, and scalar invariance models, suggesting that the pattern of loadings was consistent across time. Due to the invariance of loading patterns across time, the item that did not load significantly was still retained in the measure. Items were averaged to create a scale score that could range from 1 to 5. Higher scores indicate more communication.

3.1.1.5 Alabama Parenting Questionnaire (APQ)

Two subscales of the APQ were included: Positive Parenting and Involvement. A CFA for the Positive Parenting subscale had adequate model fit across timepoints. Chi-square difference tests comparing the configural, metric, and scalar invariance models were nonsignificant, and scalar invariance was accepted. Standardized factor loadings were significant and greater than 0.5 for all items across all timepoints. Items were averaged to create a scale score, with a possible range from 1 to 5. Higher scores indicate more positive parenting.

For the Involvement subscale, a CFA estimated at each timepoint revealed borderline model fit at baseline and good model fit at subsequent timepoints. Model fit indices for the

configural and metric invariance models were good, and model fit for the scalar invariance model was borderline (e.g., adequate RMSEA but inadequate CFI). Model fit based on chi-square tests in the metric and scalar models significantly worsened. However, the RMSEA remained similar (change in RMSEA = 0.03). Based on literature suggesting that comparisons of RMSEA and other alternative fit indices perform reasonably well in evaluating measurement invariance (Little, 2013; Cheung & Rensvold, 2002), longitudinal invariance was accepted. Consistent with the Positive Parenting subscale, items were averaged to create a mean score that could range from 1 to 5, with higher scores indicative of more parental involvement.

3.1.1.6 Parenting Stress Index (PSI)

The PSI consists of three subscales: Parental Distress (PSI-PD), Parent-Child Dysfunctional Interaction (PSI-DI), and Difficult Child (PSI-DC). Measurement invariance for each subscale was examined separately. Based on an initial CFA of the Parental Distress subscale, one item was removed from the scale: “Having a child has caused more problems than I expected in my relationship with my spouse.” This item was removed both for theoretical (i.e., cultural context) and empirical reasons. Given the large proportion of single mothers (80%) in our sample, many mothers may have found this item irrelevant or difficult to answer, which may introduce additional measurement error. Empirically, the item correlates in an unexpected direction with a large set of items. Given that the PSI has not been well-established within this population, the convergent validity of the scale may be compromised by including this item. Thus, measurement invariance testing was conducted with this item removed from the scale. The metric invariance model was not significantly worse than the configural model. Though there was a significant decrease in model fit between the metric and scalar invariance models based on the chi-square value, the minimal decrement in RMSEA (< 0.01) and CFI (0.01) suggests that

scalar invariance may be accepted (Little, 2013; Cheung & Rensvold, 2002). The items were averaged to create a scale score ranging from 1 to 5, with higher scores indicating more parenting stress.

A CFA was also conducted on the Parent-Child Dysfunctional Interaction subscale and revealed good model fit across timepoints. There was no significant decrement in model fit across the configural, metric, and scalar invariance models, and scalar invariance was retained. The items were averaged to create a scale score with higher scores describing more stress.

Finally, a CFA for the Difficult Child subscale demonstrated good model fit across timepoints. The metric invariance model was not significantly worse than the configural model, but the scalar invariance model had a significantly worse chi square value. Similar to the PSI-PD scale, however, based on the similar alternative fit indices (change in RMSEA and CFI < .01), scalar invariance was retained, and the items were averaged to create a scale score ranging from 1 to 5. As with the other PSI subscales, higher scores indicated more parenting stress.

3.1.2 Descriptive findings and bivariate correlations.

Descriptive statistics, including means, standard deviations, and ranges for all study variables are presented in Table 3.3. Bivariate correlations among all study variables are presented in Table 3.4.

3.1.2.1 HIV Disclosure.

Figures 3.2 and 3.3 display patterns in HIV disclosure status across time. Baseline levels of disclosure included 79.9% of mothers reporting nondisclosure and 20.1% of mothers reporting partial disclosure. At 3-month follow-up, 13 mothers (7.5%) changed from nondisclosure to partial disclosure; 11 mothers (6.3%) changed from nondisclosure to full disclosure; and 8 mothers (4.6%) changed from partial disclosure to full disclosure. Most mothers (n = 113) did

not change their disclosure status between baseline and 3-month follow-up, with 97 (55.7%) remaining at nondisclosure and 16 (9.2%) remaining at partial disclosure. An additional 29 mothers (16.6%) had missing data at 3-month follow-up.

From 3-month to 9-month follow-up, 5 mothers (2.9%) transitioned from nondisclosure to partial disclosure. Three mothers (1.7%) transitioned from nondisclosure to full disclosure. Five mothers (2.9%) who had partially disclosed at 3-month follow-up reported full disclosure at 9-month follow-up. Nineteen mothers (10.9%) had previously fully disclosed and thus remained at full disclosure status. As with the first transition, most mothers in the sample ($n = 102$) did not change their disclosure status; 80 mothers (46%) remained at nondisclosure status and 22 mothers (12.6%) remained at partial disclosure status. Data for the remaining mothers ($n = 39$) were missing at 9-month follow-up.

Finally, between 9- and 15-month follow-up, beyond the 28 mothers (16.1%) who had previously disclosed, an additional seven mothers fully disclosed, including four (2.3%) who transitioned from nondisclosure to full disclosure and five (2.9%) who transitioned from partial to full disclosure. Five mothers (2.9%) transitioned from nondisclosure to partial disclosure, in addition to 16 mothers (9.2%) who remained at partial disclosure status. Fifty-seven mothers (32.8%) continued to report nondisclosure. Overall, data for 59 mothers (33.9%) were missing at 15-month follow-up.

HIV disclosure was significantly predicted by group assignment, with mothers in the intervention condition disclosing at a higher rate than those in the control condition. Disclosure was not associated with child gender or race. Disclosure was correlated with older age at 15-month follow-up only; mothers were more likely to partially or fully disclose to older versus younger children by this timepoint.

Disclosure status did not predict child depression at any timepoint but did have some significant associations with child aggression and anxiety. Specifically, aggression at 3-month follow-up was positively associated with higher levels of disclosure at 15-month follow-up. Aggression at 9-month follow-up was associated with concurrent (9-month) and subsequent (15-month) disclosure status, and aggression at 15-month follow-up was concurrently associated with disclosure status. Anxiety at 3-month follow-up was associated with higher levels disclosure at 15-month follow-up.

HIV disclosure had significant bivariate correlations with one aspect of parenting: mother-reported relationship quality (CBQ). Mothers' perceptions of worse relationship quality at baseline, 9-month follow-up, and 15-month follow-up (but not 3-month follow-up) were associated with higher levels of disclosure concurrently and across time. There were a few significant correlations between disclosure and aspects of parenting stress. Baseline levels of parenting stress (PSI-PD, PSI-DI, and PSI-DC) positively predicted subsequent (e.g., 3-month and 9-month) levels of HIV disclosure. Mothers who reported higher stress at baseline were more likely to partially or fully disclose at subsequent timepoints.

3.1.2.2 Child psychosocial adjustment.

On average, children exhibited moderate levels of aggression, anxiety, and depressive symptoms across time (see Table 3.3). As shown in Table 3.4, child outcome variables were intercorrelated with one another, with higher correlations between the two mother-reported variables (CBCL aggression and CBCL anxiety) compared to correlations with the child-reported CDI. Group assignment (intervention or control) was not correlated with child adjustment at any timepoint. Study site (Atlanta or Los Angeles) was correlated with aggression only at 15-month follow-up, with Atlanta families endorsing more aggressive behavior, but was

not associated with any other child adjustment variables. Similarly, Hispanic/Latino race was associated with less aggressive behavior only at 15-month follow-up but was unrelated to other child adjustment variables. Families with younger children reported more depressive symptoms and more aggressive behaviors at baseline only; age did not predict anxiety at any timepoint. Child gender was not correlated with any child adjustment variable across timepoints.

Child adjustment was associated with parenting in some cases. In general, correlations were largest within reporter. Child depression was significantly negatively correlated with parent-child communication (CDI with PCC, both child report) at all timepoints. Higher depression was consistently related to less communication across time. Child depression at baseline was also negatively correlated with APQ Positive Parenting (mother report) at two timepoints (baseline CDI with baseline APQ; 3-month CDI with 15-month APQ). Child depression was also significantly negatively correlated with child-reported relationship quality (CBQ) at all timepoints, and with mother-reported relationship quality (CBQ) at some timepoints.

CBCL Aggression was negatively correlated with APQ Involvement concurrently at 9-month follow-up only, and with child-reported CBQ at baseline only. Aggression was negatively associated with mother-reported relationship quality (CBQ) at all timepoints. Similarly, CBCL Anxiety was negatively correlated with child-reported CBQ at some timepoints and with mother-reported CBQ at all timepoints.

All three aspects of child adjustment (depression, anxiety, and aggression) were positively associated with all three subscales of parenting stress at most timepoints. Overall, higher parenting stress was associated with worse child adjustment.

3.1.2.3 Parenting and parenting stress.

Children and mothers endorsed relatively positive perceptions of mothers' parenting quality (see Table 3.3). Across time, mothers reported moderate levels of parenting stress, with slightly lower stress reported on the Parent-Child Dysfunctional Interaction subscale compared with the Parental Distress and Difficult Child subscales. Group assignment was not associated with parenting quality or parenting stress. At some timepoints, families at the Atlanta site reported more parenting stress (e.g., PSI-PD at 9- and 15-month follow-ups, PSI-DC at 15-month) and more positive parenting (e.g., PCC at baseline and 3-month, APQ-POS at 9-month, APQ-INV at baseline) than parents at the Los Angeles site. Most, but not all, intercorrelations between parenting variables and parenting stress variables were significant and negative, with more parenting stress associated with worse parenting quality. In general, correlations between mother-reported variables were stronger than those between child-reported parenting and mother-reported parenting stress.

3.1.3 Longitudinal univariate models.

A univariate latent change score model was estimated for each variable to examine longitudinal change within constructs. Each LCS model was specified as a series of three nested models. First, a constant change model, specifying linear change with no proportional change parameter, was evaluated. The constant change model assumes that the amount of change occurring across timepoints is linear and constant within-person, with between-person variability. Second, a dual change model was estimated by adding a proportional change parameter to the constant change model, yielding an exponential growth trajectory (Grimm et al., 2017). The dual change parameter was specified by regressing the latent change score at each timepoint on the phantom variable at the previous timepoint, with equality constraints imposed

across time. Each pair of constant change and dual change models was compared using a likelihood ratio test. The dual change model, with the proportional change parameter, was retained when a chi-square difference test revealed a significant improvement in model fit. Finally, to test for homoscedasticity of residual variances, a third model was specified with equality constraints imposed across residual variances. This model was compared with either the constant or dual change model, based on which model was retained for each construct. Equality constraints on residual variances were retained in cases when model fit did not significantly worsen. Model fit indices and likelihood ratio tests for all univariate LCS models are displayed in Table 3.5. Consistent with reporting convention for LCS models (e.g., Kouros & Cumming, 2010; Yanagida, Strohmeier, & Spiel, 2016), parameter estimates reported below are unstandardized unless otherwise noted; Tables 3.6 and 3.8 display both unstandardized and standardized estimates.

3.1.3.1 Child psychosocial adjustment.

3.1.3.1.1 CDI

A linear trajectory for the CDI, as represented by the constant change LCS model, demonstrated good model fit. The addition of the proportional change parameter did not significantly improve model fit, and the constant change model was retained. Equality constraints imposed on the residual variances did not significantly worsen model fit and were thus retained. The final model was a constant change model with homoscedastic residual variances. On average, depressive symptoms decreased significantly across time. The intercept and slope were significantly negatively correlated with one another (standardized $r = -0.65$), suggesting that children who had higher baseline levels of depressive symptoms decreased at a faster rate than those with lower baseline levels (e.g., regression to the mean). Across

participants, there was significant variability in initial levels of depression ($p < .001$), but not in rates of change.

3.1.3.1.2 CBCL Aggression

A constant change model specified for the CBCL Aggression scale demonstrated good model fit. The dual change model was not significantly better fitting, suggesting that the proportional change parameter should not be retained. Equality constraints imposed on the residual variances did not significantly worsen model fit. The final univariate model was a constant (linear) change model with homoscedastic residual variances. The slope was nonsignificant ($M = -0.02$, $p = 0.08$), suggesting that aggression did not change significantly across time. The intercept and slope were not significantly correlated, which indicates that initial levels of aggression did not predict rate of change. There was significant between-person variability in both the intercept (i.e., initial levels; $p < 0.001$) and slope (i.e., rate of change; $p = 0.004$).

3.1.3.1.3 CBCL Anxiety

The CBCL Anxiety scale constant change LCS revealed good fit to the data. Adding a proportional change parameter did not significantly improve model fit, and equality constraints on the residual variances significantly worsened fit. Thus, the final retained model was a constant change model with freely estimated residual variances. Anxiety decreased slightly but significantly across time (M slope = -0.02 , $p = 0.003$). The intercept and slope were not correlated; initial levels of anxiety did not predict rate of change. There was significant between-person variability in initial levels of anxiety ($p < 0.001$), but not in the rate of change.

3.1.3.2 *Parenting practices and parenting stress.*

3.1.3.2.1 Parent-Child Communication Scale

A univariate constant change LCS model of the PCC fit the data well, and model fit was not significantly improved by the addition of a proportional change parameter. When equality constraints were imposed on the residual variances, model fit did not worsen. The final retained model was a constant change LCS model with homoscedastic residual variances. Parent-child communication increased significantly across time (M slope = 0.09, $p < 0.001$), and the rate of change was not predicted by initial levels of communication. Initial levels of communication varied significantly across individuals ($p < 0.001$), but the rate of change was not variable.

3.1.3.2.2 Alabama Parenting Questionnaire

For the APQ Positive Parenting scale, the constant change model fit the data adequately, and model fit was significantly improved in the dual change model with a proportional change parameter included. Imposing equality constraints on residual variances in the dual change model did not significantly worsen model fit, and the constraints were retained. The final retained model was a dual change model with homoscedastic residual variances. Overall, positive parenting increased across time (M slope = 3.92, $p < 0.001$). The proportional change parameter was significant and negative ($B = -0.89$, $p < 0.001$), suggesting that prior levels of positive parenting attenuated subsequent increases. The intercept and slope were significantly correlated (standardized $r = 0.72$, $p < 0.001$), indicating that mothers who reported higher initial levels of positive parenting improved their parenting at a faster rate across time. There was significant between-person variability in both the slope ($p = 0.001$) and intercept ($p < 0.001$).

For the APQ Involvement scale, the constant change model demonstrated good fit to the data; adding a proportional change parameter did not improve model fit. Equality constraints

imposed on the residual variances significantly worsened model fit and were not retained. The final univariate model was a constant change LCS model with freely estimated residual variances. Parents' involvement decreased marginally across time (M slope = -0.03, $p = 0.06$). Initial levels of involvement were unrelated to the rate of change. Initial levels of involvement were significantly variable between-person ($p < 0.001$), but the variance of the slope was nonsignificant.

3.1.3.2.3 Conflict Behavior Questionnaire

A constant change model for the CBQ child report scale had good model fit, and fit was not improved by adding a proportional change parameter in the dual change model. Residual variances demonstrated homoscedasticity; model fit was not worsened when equality constraints were imposed. The final model was a constant change model with homoscedastic residual variances. The slope of the CBQ was significant and positive (M slope = 0.02, $p < 0.001$); children reported improvements in relationship quality across time. Initial levels of relationship quality predicted more gradual increases across time (standardized $r = -0.94$, $p = 0.06$). There was significant between-person variability in initial levels of relationship quality ($p < 0.001$), but not in change across time.

For the CBQ mother report, model fit for the constant change model was good and was not significantly improved by the addition of a proportional change parameter. Equality constraints imposed across residual variances did not worsen model fit and thus were retained. The final model was a constant change LCS model with homoscedastic residual variances. The slope of the mother-reported CBQ was positive and marginally significant (M slope = 0.01, $p = 0.07$), indicating slight increases in mothers' perceptions of parent-child relationship quality across time. The intercept and slope were significantly negatively correlated (standardized $r = -$

0.48, $p < 0.001$); higher initial levels of relationship quality were associated with a slower rate of growth over time. The variances of both the slope ($p = 0.003$) and intercept ($p < 0.001$) were significant, though the variance of the slope was small (0.002).

3.1.3.2.4 Parenting Stress Index

For the PSI Parental Distress scale, a constant change model demonstrated good fit to the data, and the dual change model including a proportional change parameter was significantly better fitting. Model fit did not worsen with the addition of equality constraints on the residual variances. The retained model was a dual change model with homoscedastic residual variances. The slope was positive and significant (M slope = 1.62, $p < 0.001$), and the intercept and slope were significantly positively correlated (standardized $r = 0.83$). The proportional change parameter was negative and significant ($B = -0.74$, $p < 0.001$); higher parenting stress at each timepoint predicted more gradual increases across time. There was significant variability in both the intercept ($p < 0.001$) and slope ($p = 0.04$).

For the PSI Parent-Child Dysfunctional Interaction scale, a constant change model fit the data well, and model fit was not improved in the dual change model. Equality constraints imposed across residual variances resulted in significantly worsened model fit, and the restraints were thus not retained. The final univariate model was a constant change model with freely estimated residual variances. Parenting stress decreased across time (M slope = -0.05, $p = 0.02$) and the slope and intercept were uncorrelated. There was significant between-person variability in initial levels of parenting stress ($p < 0.001$), but nonsignificant variability in rates of change.

For the PSI Difficult Child scale, the constant change model showed good fit to the data. The dual change model was not significantly better than the constant change model. Imposing equality constraints on residual variances significantly worsened model fit. The final univariate

LCS model was a constant change model with freely estimated residual variances. The slope was negative and marginally significant (M slope = -0.04, $p = 0.06$), and was unrelated to the intercept. Though there was significant between-person variability in initial levels ($p < 0.001$), there was not significant variability in the rate of change.

3.1.4 Bivariate latent change score models.

In order to examine reciprocal predictors of change among child outcomes, parenting, and parenting stress, a bivariate LCS model was examined for each pair of variables. For the purpose of reporting results, one variable in each pair was assigned as “X” and the other as “Y.” To assess bidirectional paths, a series of four models were specified for each bivariate pair: 1) *No coupling model*: First, a model linking the two univariate LCS models was specified without bidirectional paths. Correlations were specified among the intercepts and slopes of both variables to link the two univariate LCS models. 2) *Y on X coupling model*: Second, a coupling model examining paths from the independent (X) variable to the latent change scores for the dependent (Y) variable was specified. This model regressed each latent change score for Y on the latent variable for X at the previous timepoint. 3) *X on Y coupling model*: Third, a coupling model was specified examining paths in the reciprocal direction: from latent variables of Y to subsequent latent change scores of X. 4) *Full coupling model*: Finally, a full coupling model was specified that included bidirectional paths from latent variables of both X and Y to subsequent latent change scores of Y and X. For model identification purposes, each set of bidirectional paths was constrained to be equal across time. Models were compared using chi-square difference testing and were retained if model fit was significantly improved with the addition of coupling parameters. The final model for each bivariate pair represents the best-fitting and most

parsimonious model among the series of four tested models. An illustrative example of results from a bivariate LCS model with significant coupling effects is presented in Figure 3.4.

To test HIV disclosure as a predictor of child functioning, parenting, and parenting stress, disclosure status was included as a time-varying predictor in each univariate LCS model. In each model, latent change scores for the outcome variable were regressed on the ordinal HIV status variable at the corresponding timepoint. Only paths from HIV disclosure to family functioning outcomes were hypothesized; thus, bidirectional paths were not tested. In all models with HIV disclosure, the assumptions of equal intervals and linearity were empirically supported using the model constraint command. The interval between nondisclosure (0) and partial disclosure (1) was statistically equivalent to the interval between partial disclosure (1) and full disclosure (2). Effects of HIV disclosure were linear on average, meaning that the relation between each interval (0 to 1 or 1 to 2) and the outcomes were consistent.

3.1.4.1 HIV Disclosure with child outcomes.

To examine HIV disclosure as a longitudinal predictor of child outcomes, HIV disclosure status (X) at each timepoint, measured as a 3-point ordinal scale including nondisclosure, partial disclosure, and full disclosure, was included as a time-varying predictor in the univariate LCS model for each outcome (Y): child depression (CDI), aggressive behavior (CBCL Aggression) and anxiety (CBCL Anxiety). A separate model was tested for each outcome. Within models, each latent change score was regressed on the observed disclosure status indicator for the corresponding timepoint. Model fit for all three models was good. However, HIV disclosure status was unrelated to changes in child depression, anxiety, and aggression.

3.1.4.2 *HIV Disclosure with parenting practices.*

HIV disclosure was examined as a longitudinal predictor of parenting practices in a separate model for each parenting outcome (PCC, APQ Positive Parenting, APQ Involvement, CBQ mother report, and CBQ child report). Group assignment (i.e., intervention vs. control) was included as a covariate in all models. All five models demonstrated good fit to the data (see Table 3.6). HIV disclosure (X) was a significant predictor of changes in parenting (Y) in two of the five models: PCC and CBQ—both child report. In the PCC model, disclosure status at 9-month follow-up significantly predicted steeper increases in parent-child communication during the same timeframe. Children whose mothers had partially or fully disclosed by 9-month follow-up were more likely to report improvements in communication between 3-month and 9-month follow-up, compared with those whose mothers had not disclosed. However, disclosure was unrelated to changes in PCC at other timepoints. In the CBQ child report model, disclosure status at 3-month follow-up was related to steeper increases in parent-child relationship quality. In families in which mothers had fully or partially disclosed by 9-month follow-up, children reported more improvements in their relationship with their mother between 3-month and 9-month follow-up, compared with families in which disclosure had not occurred. HIV disclosure was not related to changes in CBQ at other timepoints. The remaining three parenting models included mother-reported parenting practices, and there were no significant relations between HIV disclosure and changes in mother-reported parenting quality.

3.1.4.3 *HIV Disclosure with parenting stress.*

Bivariate models were tested examining HIV disclosure as a time-varying covariate in the univariate LCS models for each parenting stress subscale (Parental Distress [PD], Parent-Child Dysfunctional Interaction [DI], and Difficult Child [DC]). Based on inspection of plots and

results of Bayesian estimation, each parenting stress LCS model was specified as a latent basis model by removing the slope factor and freely estimating the variances and means for each latent change score. This specification allowed for the shape of the longitudinal in parenting stress to be freely estimated, without imposing a fixed shape (e.g., linear). The latent basis specification addressed issues with model convergence. As with parenting practices, the latent change score for parenting stress at each timepoint was regressed on disclosure status for the corresponding timepoint. All three models demonstrated good fit to the data. Across all three models, HIV disclosure (X) between baseline and 3-month follow-up predicted either steeper reductions (for PD and DI) or more gradual increases (for DC) in parenting stress (Y) during the same timeframe. Mothers who fully or partially disclosed between baseline and 3-month follow-up reported greater reductions in Parental Distress and Parent-Child Dysfunctional Interaction scores, and fewer increases in Difficult Child scores.

3.1.4.4 Parenting practices and child outcomes.

A bivariate LCS model was specified for each pair of parenting and child outcome variables. Due to empirical nonconvergence issues related to limited variance, models including the CBQ child and mother report are not reported. For nearly all bivariate pairs (with one exception), the model with no coupling was retained; bidirectional effects, above and beyond what is accounted for by correlated intercepts and slopes, were not detected in the majority of parenting-child outcome bivariate combinations in the LCS framework. One bivariate pair, PCC (X) with CDI (Y), demonstrated marginally significant coupling parameters in the X on Y model. Across time, child depression led to marginally attenuated subsequent increases in parent-child communication. Children who experienced more depressive symptoms at one timepoint

had marginally smaller increases in parent-child communication compared with children experiencing fewer depressive symptoms.

3.1.4.5 Parenting stress and child outcomes.

Change over time in parenting stress and child outcomes were not statistically significantly related to one another. In each bivariate pair of parenting stress with child adjustment, the model with no coupling parameters was retained. Parenting stress and child adjustment did not significantly predict changes in one another.

3.1.4.6 Parenting stress and parenting practices.

With one exception, changes in parenting quality and parenting stress were unrelated across time. For the bivariate LCS model examining PSI Parental Distress (X) and APQ Involvement (Y), the Y on X coupling model was retained. There were significant intercorrelations among the intercepts and slopes of parenting stress and involvement. The intercepts were negatively correlated with one another; mothers with higher baseline levels of parenting stress had lower baseline levels of involvement. Additionally, the intercept of parenting stress was negatively correlated with the slope of involvement; mothers reporting higher baseline levels of parenting stress overall had more negative changes in parental involvement across time. The reverse was also true: mothers reporting higher initial levels of involvement showed overall greater decreases in parenting stress across time. The Y on X coupling parameter was significant and positive, and the correlation between latent change in parenting stress and latent change in parental involvement was negative. Taken together, the coupling parameter and negative correlation between latent change in each variable indicates that larger changes in parenting stress predicted smaller changes in parental involvement. As parenting stress increased, parental involvement decreased, and vice versa. Parents whose

parenting stress increased across time tended to decrease their involvement. Results of this model are displayed in Figure 3.4.

3.1.5 *Bivariate cross-lagged panel models.*

Much of the previous work examining transactional relations among family processes has employed cross-lagged panel modeling (e.g., Neece et al., 2012). Therefore, in order to compare patterns of findings within our HIV-affected sample to findings in the general population, a series of cross-lagged panel models were employed to test longitudinal transactional relations among HIV disclosure, child adjustment, parenting practices, and parenting stress. Model fit for all bivariate models are displayed in Table 3.9, and standardized parameter estimates are presented in Table 3.10.

To examine bidirectional associations between pairs of variables, a series of four CLPA models was specified: 1) *Autoregressive model*: First, an autoregressive model was specified with no cross-lagged paths. In the autoregressive model, each variable was regressed on the same variable at the previous timepoint (e.g., X_2 on X_1 , Y_2 on Y_1 , etc.). Additionally, within-time correlations were specified across constructs (e.g., X_1 with Y_1 , X_2 with Y_2 , etc.). 2) *Y on X cross-lagged model*: Second, a model was estimated with the addition of cross-lagged paths from one variable (X) at each timepoint to the other variable (Y) at the subsequent timepoint (e.g., regress Y_2 on X_1 , Y_3 on X_2 , etc.). 3) *X on Y cross-lagged model*: Third, a model was specified with cross-lagged paths in the reverse direction (e.g., regress X_2 on Y_1 , X_3 on Y_2 , etc.). 4) *Bidirectional cross-lagged model*: Finally, a bidirectional model was specified with cross-lagged paths from each variable at one timepoint to the other variable at the subsequent timepoint.

In all models, autoregressive and cross-lagged paths were constrained to be invariant across time; exceptions were made when model fit was significantly improved by freely

estimating paths across timepoints. Models were compared using likelihood ratio testing. Models were retained if a chi-square difference test revealed a significant improvement in model fit with the addition of cross-lagged paths. The final retained model for each bivariate pair represents the best-fitting and most parsimonious model out of the set of four evaluated models. Models were initially run without covariates due to power constraints; group assignment (intervention or control), child age, child gender, and study site (Atlanta or Los Angeles) were added as covariates for all models that had significant cross-lagged effects. An illustrative example of findings from a bidirectional CLPA model is shown in Figure 3.5.

3.1.5.1 Disclosure with child outcomes, parenting, and parenting stress.

HIV disclosure (X) was examined within a bivariate pair with each child outcome, parenting, and parenting stress variable (Y). With one exception, the autoregressive model was retained in all bivariate pairs with HIV disclosure. HIV disclosure did not significantly reciprocally relate to child adjustment, parenting quality, or parenting stress. However, in the CLPA models examining HIV disclosure (X) and CBQ mother report (Y), the Y on X cross-lagged model was retained based on a marginally improved chi-square value. Specifically, with covariates (group assignment, study site, child age, and child gender) included in the model, HIV disclosure predicted marginally lower mother-reported CBQ scores at subsequent timepoints. Mothers who partially or fully disclosed were more likely to subsequently report worse perceptions of their relationship quality with their children. The cross-lagged paths from CBQ to HIV disclosure were nonsignificant. The bidirectional effect was nonsignificant; relationship quality did not predict subsequent disclosure status.

3.1.5.2 *Parenting practices and child outcomes.*

A CLPA model was assessed for each bivariate pair of parenting practices (PCC, CBQ child and mother report, APQ Involvement, and APQ Positive Parenting) and child outcomes (CDI, CBCL Aggression, CBCL Anxiety), for a total of 15 bivariate models. Only two models had significant cross-lagged effects: PCC (X) with CDI (Y), and CBQ child report (X) with CDI (Y). In each model, four covariates were included: group assignment, site, child age, and child gender. For the model examining PCC with CDI, equality constraints were imposed across sets of autoregressive and cross-lagged paths. However, chi-square difference testing revealed that the model was significantly improved by allowing within-time correlations between constructs (e.g., X1 with Y1) to be freely estimated. The final retained model based on likelihood ratio testing was a bidirectional cross-lagged model. Across time, parent-child communication and child depression reciprocally predicted one another. Specifically, more communication at one timepoint predicted fewer depressive symptoms at the subsequent timepoint. Similarly, more depression at one timepoint was related to less parent-child communication at the next timepoint. Covariates were not significantly related to either PCC or CDI at any timepoint. Results of this CLPA model are displayed in Figure 3.5.

For the model including CBQ child report (X) and CDI (Y), the Y on X cross-lagged model was retained. Equality constraints were imposed across each set of autoregressive and cross-lagged paths. There was a significant cross-lagged effect from CBQ to CDI, such that better child-reported relationship quality predicted less subsequent depression. Depression did not predict subsequent relationship quality. Covariates were not significantly related to CBQ or CDI across time.

There were no significant cross-lagged paths in bivariate CLPA models examining parenting practices with CBCL aggression or anxiety; parenting was not reciprocally related to either aggression or anxiety.

3.1.5.3 Parenting stress and child outcomes.

To examine reciprocal effects between parenting stress and child outcomes, CLPA models were tested for each bivariate pair. Based on measurement models described previously, PSI subscales were examined in separate models. In all models examining parenting stress (with one exception: PSI-DI with CBQ), study site was a significant predictor of parenting stress such that mothers at the Atlanta site endorsed higher levels of stress than mothers in Los Angeles. Several cross-lagged (X on Y) and bidirectional effects were observed. First, the model examining PSI Dysfunctional Interaction (X) and CDI (Y) demonstrated bidirectional effects. In this model, autoregressive paths were constrained to be equal across time, but based on chi-square difference testing, cross-lagged paths were freely estimated to allow the bidirectional effects to vary across time. From baseline to 3-month follow-up, parenting stress predicted significantly more subsequent child depression, but child depression did not predict subsequent parenting stress during this timeframe. From 3-month to 9-month follow-up, the reverse effect was observed: child depression at 3-month follow-up predicted significantly more parenting stress at 9-month follow-up, but parenting stress did not predict subsequent child depression. From 9-month to 15-month follow-up, higher parenting stress predicted higher subsequent child depression, but child depression did not relate to subsequent parenting stress. In summary, children whose parents endorsed higher levels of parenting stress at baseline reported more depressive symptoms at 3-month follow up. In turn, depression at 3-month follow-up was associated with more parenting stress at 9-month follow-up, and parenting stress at 9-month

follow-up predicted more depression at 15-month follow-up. Covariates were not significantly related to PSI or CDI at any timepoint.

Two PSI subscales had significant cross-lagged effects with the CBCL aggression scale. First, in the CLPA models testing PSI Parental Distress (PSI-PD) with CBCL aggression, the X on Y cross-lagged model was retained. This model included equality constraints on each set of autoregressive and cross-lagged paths; however, based on chi-square difference testing, within-time correlations between variables were freely estimated. No other covariates were related to parenting stress or child aggression. The cross-lagged effects from aggression to parenting stress were marginally significant ($p = 0.05$) and positive; more aggressive behavior at one timepoint predicted marginally more parenting stress at the next timepoint. Parenting stress did not predict subsequent aggression.

In addition to the PSI-PD scale, the Difficult Child subscale of the PSI also had significant cross-lagged effects with the CBCL aggression. Aside from study site, no covariates were associated with parenting stress or child aggression. The bidirectional cross-lagged effects between PSI-DC and CBCL Aggression were significant; parenting stress and child aggression reciprocally predicted one another across time.

CLPA models evaluating the CBCL Anxiety scale with each of the three PSI subscales revealed significant cross-lagged effects for all three bivariate pairs. Across all models, each set of autoregressive and cross-lagged paths was constrained to be equal across time. Based on chi-square difference testing, correlations between constructs within timepoints were freely estimated, in order to allow between-construct correlations to vary across time. Covariates were included in all models: group assignment, study site, child age, and child gender. In all models, child age was significantly (for PSI-PD and PSI-DI) or marginally (for PSI-DC) related to CBCL

anxiety, such that younger children exhibited more anxiety symptoms than older children. Group assignment and child gender were unrelated to parenting stress and anxiety. For CBCL anxiety with PSI Parental Distress and PSI Parent-Child Dysfunctional Interaction, the X on Y cross-lagged model was retained. Though parenting stress did not predict subsequent anxiety, anxiety symptoms were related to significantly higher subsequent parenting stress for both subscales. For CBCL anxiety with the PSI Difficult Child scale, the bidirectional cross-lagged model was retained. Anxiety and parenting stress reciprocally predicted higher levels of one another. Mothers who reported more anxiety symptoms for their children at one timepoint endorsed higher parenting stress at the following timepoint; and those who endorsed higher parenting stress also reported higher subsequent levels of child anxiety.

3.1.5.4 Parenting stress and parenting practices.

Reciprocal effects between parenting stress and parenting practices were examined in a series of bivariate CLPA models (see Tables 3.9 and 3.10). Two parenting variables demonstrated significant cross-lagged effects with parenting stress: CBQ mother report and CBQ child report. There were no significant cross-lagged effects between parenting stress and PCC or APQ (Involvement or Positive Parenting subscales). Beyond study site, no covariates significantly predicted PSI or CBQ (child or mother report). In all cross-lagged models, within-time correlations were freely estimated across timepoints based on improvements in model fit. Autoregressive and cross-lagged paths were constrained to be equal across time.

For the models with CBQ mother report (Y), the X on Y cross-lagged model was retained for the PSI Parental Distress (X) and Parent-Child Dysfunctional Interaction (X) subscales. Better relationship quality per mother report predicted less parenting stress (PD and DI subscales) at subsequent timepoints. However, these two aspects of parenting stress did not

predict subsequent relationship quality. The bidirectional model was retained for models examining CBQ mother report with PSI Difficult Child subscale. For this subscale, relationship quality and parenting stress were mutually related to one another across time, with relationship quality predicting less parenting stress and vice versa. For the models examining CBQ child report (Y) with the Parent-Child Dysfunctional Interaction subscale (X), the Y on X cross-lagged model was retained. Mothers' parenting stress (DI subscale) at one timepoint predicted children's perceptions of relationship quality at the subsequent timepoint, with higher parenting stress predicting worse relationship quality. However, child-reported relationship quality did not predict subsequent parenting stress. Child-reported CBQ was not reciprocally related with other subscales of parenting stress.

3.1.6 Multivariate cross-lagged panel models.

Based on results of bivariate CLPA models, a multivariate CLPA model was tested examining bidirectional cross-lagged effects among PSI Parent-Child Dysfunctional Interaction (PSI-DI), CBQ child report, and CBCL Aggression. First, an autoregressive model was specified with no cross-lagged paths. In order to improve model fit, both first- and second-order autoregressive paths were included (e.g., X3 on X2, X3 on X1). The model included four covariates: group assignment, study site, child age, and child gender. Each variable was regressed on all four covariates at each timepoint. No covariates had significant associations with CBQ child report, PSI-DI, or CDI at any timepoint. Next, a fully saturated transactional model was specified with all possible cross-lagged paths included between variables. Model fit for the fully saturated cross-lagged model was significantly improved compared to the autoregressive model. However, some cross-lagged paths were nonsignificant and did not contribute significantly to model fit. Nonsignificant cross-lagged paths were then removed from the model,

and the final retained model was the best-fitting and most parsimonious cross-lagged model. In addition to all autoregressive paths, the final model included significant cross-lagged effects from CDI to PSI-DI, from CBQ child report to CDI, and marginally significant ($p = 0.07$) paths from PSI-DI to CDI. Better child-reported relationship quality predicted less subsequent depression. In turn, lower levels of child depression predicted less subsequent parenting stress. Lower parenting stress marginally predicted subsequently lower child depression. The final multivariate model is presented in Figure 3.6.

As a follow-up exploratory model, HIV disclosure was added as an additional variable in the CLPA model. HIV disclosure had no significant cross-lagged effects with any other variable and thus was not retained in the model.

3.1.7 Summary of quantitative findings.

Table 3.1 summarizes the quantitative findings, and Figures 3.1a and 3.1b depict a conceptual representation of the findings. HIV disclosure demonstrated over-time associations with parenting quality and parenting stress, but not child adjustment. Within the LCS framework, HIV disclosure proved beneficial for multiple aspects of parenting quality and parenting stress. Families in which full or partial disclosure had occurred by 9-month follow-up exhibited greater improvements in child-reported parent-child communication and relationship quality. Mothers who disclosed between baseline and 3-month follow-up also evidenced benefits for their parenting stress, either in the form of sharper reductions or more gradual increases across time. HIV disclosure had no significant associations with changes in child adjustment within the LCS framework. In the CLPA framework, HIV disclosure was associated with marginally worse mother-reported relationship quality. HIV disclosure was unrelated to child adjustment and parenting stress within the CLPA framework.

A few reciprocal effects were found between parenting quality and child adjustment. All reciprocal effects between parenting and child adjustment were detected among pairs of child-report variables. Within the LCS framework, child-reported depressive symptoms led to marginally slower improvements in child-reported parent-child communication. In the CLPA framework, child-reported depression and parent-child communication also demonstrated reciprocal effects: more depression predicted less communication, and more communication predicted less depression. Further, child depression was predicted by child-reported relationship quality, though the reciprocal effect was not observed. No transactional effects between parenting and child aggression or anxiety were detected.

Parenting stress and child adjustment demonstrated some bidirectional effects in the CLPA, but not LCS, models. Parents' perception of dysfunctional interactions with their child (PSI-DI) were reciprocally related to child depression, though the bidirectional effects did not occur simultaneously. Baseline parenting stress predicted more depression at 3-month follow up, which then predicted higher parenting stress at 9-month follow-up, and, in turn, more depressive symptoms at 15-month follow-up. Aggression and anxiety were each transactionally related to parents' perception of having a difficult-to-manage child (PSI-DC); higher parenting stress predicted more adjustment difficulties, and vice versa. Aggression and anxiety each also predicted higher subsequent levels of distress in the parental role (PSI-PD), and anxiety led to more stress related to dysfunctional parent-child interactions (PSI-DI).

Within the LCS models, more positive changes in parenting stress predicted more negative changes in parental involvement. As parenting stress increased, involvement decreased. In the CLPA models, better mother-reported relationship quality led to less parenting stress. One aspect of parenting stress, perception of the child's difficult temperament, was reciprocally

related to mother-reported relationship quality. Finally, parents' endorsement of dysfunctional interactions with their child predicted worse subsequent child-reported relationship quality.

In the multivariate CLPA model, better child-reported parent-child relationship quality led to less depression, which was in turn related to less parenting stress. Lower levels of parenting stress were associated with marginally less child depression subsequently.

3.2 Qualitative Findings

A summary of the quantitative and qualitative results can be found in Table 3.11, and Figure 3.7 graphically displays the qualitative themes. The qualitative subsample consisted of 14 mothers and 13 children ($n = 27$) in which mothers had fully disclosed their HIV status since beginning the study. Of the 14 families who were interviewed, 12 were in the intervention condition and two were in the waitlist control group. The two mothers in the control group had participated in a group-based format of the intervention after completing all quantitative interviews. Thus, all families in the qualitative subsample had received the intervention, either in an individual or group format. Six families were recruited from the Atlanta site, and eight were recruited from the Los Angeles site. Half ($n = 7$) of target children in the qualitative sample were girls. The average age of target children was 12.50 ($SD = 1.91$), with ages ranging from 9 to 16.

3.2.1 *Child psychosocial adjustment.*

3.2.1.1 *Children's behavior.*

3.2.1.1.1 Compliance.

When discussing children's behavior, all families raised the theme of compliance. Most families cited chores as an important element of following directions, with several viewing chores as a source of conflict in the parent-child relationship. Mothers described having to repeat a command several times before the child would comply and discussed perceived barriers to following instructions, including the child's comprehension abilities and distractibility. For example, one mother of a 13-year-old boy noted,

I don't think he processes information well, like comprehension-wise, I don't know if it's the frontal lobe not being developed yet. But, even though he's big, it's like, you should understand this, and he doesn't put two and two together. So I have to be patient and break things down a whole lot more. (2019M)

A common thread across interviews was a discussion of the child's attitude, talking back, or arguing; yet despite citing some difficulties with compliance, many mothers and children described the child as responsible, obedient, and respectful. Most children stated that they rarely get in trouble at home or school, and the most common reasons for getting in trouble were that the child talked or slept in class, did not complete household chores, or did not attend class or turn in homework.

3.2.1.1.2 Interpersonal behavior and peer relationships.

Nine families, primarily those in which the target child was a girl, discussed themes related to the child's interpersonal behavior and peer relationships. Several children were described as sociable, playful, and popular with peers, teachers, and neighbors. Children were also characterized as nurturing and protective of others. Describing her 11-year-old daughter, one mother said, "She's real, like, caring and good, um, 'cause she try to stick up for a lot of kids... She protective of other people as far as, like, um, being picked on or being bullied" (2076M).

About half the families stated that the child is shy or reserved, with a few children noting that they are more outgoing in some settings than others (e.g., home versus school). Four mothers referenced their child's social problems with peers, including bullying, low self-esteem, relational aggression, and physical aggression.

3.2.1.1.3 Self-regulation.

Another common theme was the child's ability, or limited ability, to self-regulate, including behavioral and emotion regulation. A few families described behavioral outbursts, such as yelling, tantrums, blurting things out, fidgeting, or talking excessively. Mothers and children attributed these behaviors to a number of causes, including stress, anxiety, anger toward

mother, mood swings, family culture, and not having an appropriate outlet for their energy. For example, a 13-year-old girl said,

Sometimes, like, I can't really control my anger. 'Cause ever since I was little I would hold in a bunch of stuff. So like outta nowhere I have outbursts and I don't like it. But I can't control it anymore. (1032C)

3.2.1.1.4 Developmental Transitions.

Several families described behaviors they perceived to be “normal teenage” behavior, and mothers acknowledged the difficult transitions of the adolescent stage. For example, one mother of a 13-year-old girl said,

She's having her ups and downs, as a female teenager, umm, she's going to the 8th grade so you know she has her peer influences and stuff. It's, I guess it would be normal for her age to, you know, have her ups and downs or mood swings. (2044M).

A few mothers described their adolescent children as seeking more independence and becoming more rebellious. The mother of a 9-year-old boy stated, “I know he is going into 10 years old, and at that age I know they begin with their rebelliousness with their, I don't know, because they are not children; they start entering adolescence” (1053M; translated from Spanish). Some mothers acknowledged the need for more conversations about sex as their adolescent gets older and becomes more interested in sex and romantic relationships, such as a mother who said, “I think we are in a stage where we need to talk about it, have more communication about sex because that's something that's coming up for her in the future.” (1023M; translated from Spanish). Similarly, a grandmother of a 12-year-old girl said,

She's in a phase right now where I'm trying to talk to her about boys. “Ma, I don't wanna hear that.: Like, “But you gotta hear it. You 13. Little girls get pregnant at 12. So you need to think. You need a big talk.” (2083M)

3.2.1.2 *Children's emotional adjustment.*

Families identified positive, negative, and neutral child emotions. The most commonly described emotions were happiness or relaxed mood, anger, sadness or depression, irritated

mood, and anxiety or worry. Most families reported that the child's typical mood is positive or neutral. Children described feeling angry or irritated due to conflict with parents, siblings, or peers; difficulties at school; and tiredness or lack of sleep. Several children reported that they experience mood swings, such as an 11-year-old girl who said, "Sometimes I be mad, but sometimes I be happy. Like my emotions change, my emotions change fast and I don't know why, but that's just the way that umm ... Like one minute I'm mad, one minute I'm sad" (2076C).

Mothers and children described a wide variety of ways that children express their negative feelings, including shutting down and becoming quiet, talking about emotions, body language and facial expressions, crying, using creativity as an outlet for self-expression, throwing tantrums, and changes in sleep or appetite.

3.2.2 Parenting quality.

3.2.2.1 Behavioral control.

All families discussed themes related to parents' behavioral control of their children, including discipline, reinforcement, corporal punishment, protective parenting, strict parenting, and lenient parenting. Families held a wide range of perspectives and practices related to behavioral control. Some parents stated that they believe children should be given freedom to make their own decisions, such as the mother of a 13-year-old girl who said,

I like to give them their privacy, their space, so they can also learn from the personal decisions they take, and when they communicate, if they communicate to me I'm like, "Okay, that's your view point. I see this but it doesn't mean it's going to be like this. It means that you alone are going to get to decide what to do, and as time goes by you will realize what the best thing was for you. From what I tell you only grab what you think is best. Don't throw it away, just listen to what I have to say because at times it will become useful to you. Imagine you have a little bucket and you put it away and later on it will help you find something that you need." (1032M; translated from Spanish).

Several mothers indicated that being strict or protective is an important aspect of their parenting style. Some parents viewed strict and supportive or nurturing parenting as being complementary. A mother of a 16-year-old boy said,

I'm very strict. I'm a strict mother. I'm a mother that loves her children, and through that love that I feel for them I discipline them. I discipline them and I try to give them a good example and to educate him ... I try to be a better, I try because I'm not a perfect mother or an exemplary mom but I try to, uh, to set a good example and be strict on them and always discipline them, because if that's not there then there's no education. Discipline them when they misbehave and not spanking them because they will repeat it, but instead take something they like away from them and explain to them why you're doing it. (1025M; translated from Spanish).

Though many parents acknowledged potential risks and dangers facing their child, there were a range of perspectives regarding how to manage these risks. Some mothers described feeling a need to be strict to protect their children from risks—including HIV-related risks—or in order to increase compliance from their child. Other parents, however, adopted the stance that you cannot shield a child from the dangers of the world. For example, the mother of an 11-year-old girl said,

My boyfriend is like, "Why you let them do this and that?" And I be like, because I mean you can shield them from stuff when they're young and at home, but they gonna get grown eventually. And when they get in the streets, um, you not gonna be able to shield them from something because they want to experiment with drugs, they want to experiment with other sexualities, they want to experiment with whatever they want to experiment with. Guess what? What you gonna do about it? They're gonna be grown, so what—what can you do? You gonna chase them around the whole world? No! You can't do that. (2076M)

A few parents indicated that they struggle to navigate a balance between protective and lenient parenting, with some feeling that they are either too permissive or too strict with their children. A mother of a 9-year-old boy expressed conflicting feelings regarding her strict parenting style:

"As he's growing, he's seeing how I'm not like other moms. Like I tell him, 'My son, I overprotect you too much. That's why I do it. I'm even scared to go out, go to the street,

go to the store, go somewhere and have something happen to us, happen to you. Because that's something I wouldn't be able to overcome.' I tell him, 'If something happens to you, I die too. You are my life, and I prefer to have you here locked up.' And I tell him, 'My son, understand that I am like this because this is how I was raised. My dad had me in a crystal ball. He didn't let me go out. I am not one of those women that go out and have fun. No. I was always at home. That is why I am raising you like this.'" (1053M; translated from Spanish)

Regarding discipline, most children said that their mothers typically are consistent in following through with punishments and rewards. One 15-year-old boy said, "She'll punish me and if I push back, I'll still be punished. There's no way to change it" (1049C). In contrast, a few children stated that they can "get out of punishment" (2083C) if they debate the punishment. Some families reported that mothers take away privileges, such as phones or activities, when punishing children. One mother stated that she uses positive reinforcement in response to good behavior, saying,

I try my best to tell him that I'm proud of him as much as possible and that—I try to speak a lot of great things to him, like he knows that he's great and he's amazing and that he's going to do great things in the world and stuff like that. (2019M)

The topic of corporal punishment was raised by a few participants, with most of these parents stating that they do not use this method of discipline. One mother (1025M) emphasized that although she used to discipline her children through corporal punishment, she now prefers to rely on modeling good behavior and taking away privileges, rather than spanking. Similarly, another caregiver of a 13-year-old granddaughter indicated that she used corporal punishment when she was a young teenage mother but has reduced her use of this method with her grandchildren.

[My children] was like, "Well we stay getting whooped." And I was like, "Yeah, because I was young. I was a mother at 14." ... It's different with my grandkids. Like I don't whoop them like—it's like, if they do get a spanking, it's because they hit each other and fight each other. And I be trying to teach them, "Y'all don't fight each other" ... But I don't literally whoop them ... I prefer to give them time out than to hit on them. (2083M)

3.2.2.2 *Parent-child communication.*

Parent-child communication was a common theme discussed by nearly all participants. Most families referred to communication as an important aspect of the parent-child relationship, with some mothers perceiving it as a strength in their parenting and others citing it as an area to improve. Mothers and children relied on parent-child communication for a number of different purposes, including processing and regulating emotions, strengthening relationship quality, providing education about sexual risk reduction, and offering advice, guidance, or problem-solving assistance. There was variability within the sample in mothers' approaches to communication in the parent-child relationship. For example, mothers varied in their views on the appropriate level of openness with their child. On one hand, one mother indicated that she tries to protect or shield her child by emphasizing the positive in their communication:

"We are very united and I always try to tell her what happened. I make sure that it's not going to affect her or any problem, because like I said, she has her own problems too, so I try to tell her something that happened to me without having to hurt her. Without trying to hide things from her, but only trying to tell her something good and not something bad." (1023M; translated from Spanish)

In contrast, some mothers emphasized that they value open, honest, and direct communication with their children. One mother of an 11-year-old said,

I talk to my kids about everything. Like, I'm a really blunt straight-up mom, like, I don't sugar coat nothing. I don't—not like tell them something, I don't try to make them feel like, well, I try to make them feel like certain things gonna be alright, but if there's something that I know is not, I'm not gonna just tell them, like, 'It's gonna be okay,' for them to look forward to something that's not gonna be ... I always want them to know the truth. (2076M)

Similarly, the grandmother of a 12-year-old said, "Don't ever hold anything back from me. You probably don't like the outcome of what I say, but I'm gonna come to you real and real"

(2083M). Families also showed variability in how communication is initiated, with some families indicating that parents frequently ask questions to encourage their children to talk, and

others reporting that children readily volunteer information about their feelings and experiences. Several mothers stated that they often suspect when something is bothering their child and they ask about it. A mother of a 16-year-old described her process of communicating with her son when he is upset:

“When he’s not doing well, I notice. I already—as a mother, you know your children, and you know when he’s, uh—when something is wrong with him I ask, ‘What’s going on?’ or ‘What’s wrong?’ I ask him how his day went in school and everything, and that’s when I notice whether he’s good or not doing well. But last month he’s been doing well because I haven’t had to ask him. Because there are times when he’s down, he’s going through something, or if he behaved badly at school I ask him, ‘How did it go?’ Or sometimes I ask him, ‘What’s going on?’ When I tell him like that, he tells me, ‘Nothing,’ and I’m like, ‘What do you mean, nothing? What about that look on your face?’ Then he starts speaking with me.” (1025M; translated from Spanish)

Describing a similar approach of asking her 12-year-old child about his feelings, another mother expressed dissatisfaction:

It’s harder because he won’t open up on his own. It’s like I have to say, ‘Son, what’s wrong with you?’ or you know, ‘Son, you know you can talk to me about something.’ I want him to be—to feel comfortable enough to come at any time and be like, ‘Mom, well I need to talk to you about something.’ I don’t want to just have to approach him. (2039M)

In contrast, other families described a dynamic in which the child initiates discussions about her feelings. In one family, both the parent and the child verbalized similar norms around communication. The child said, “I feel comfortable asking her about anything” (2044C). Similarly, the mother stated, “She speaks her mind ... She’ll be, you know, standoffish or whatever for a few minutes, then she’ll come lay up on you, ‘Well, mom, I’m feeling this way’” (2044M). In another family, a similar process was described by a mother of a 11-year-old: “She’ll, she’ll just come and talk to me. If she’s sad, she’ll—if I’m in my room, she’ll come and she’ll just say, ‘Mom, you know what? I just feel so sad’” (2076M).

Open parent-child communication was viewed by some mothers as being complementary to giving the child privacy and freedom. When describing her idea of the most important aspect

of being a good parent, one mother said, “Definitely the communication. The communication and respecting the space um, or giving them privacy and emotionally caring for the inner child everyone has within them” (1032M; translated from Spanish).

Another mother similarly expressed the viewpoint that open communication and allowing privacy are parenting practices that go hand in hand: “I’m listening and will be like, ask questions, but I’m not gonna be—I’m not a nosy person. I’m not gonna get all up in your business. But I be trying to get her to open up more” (2083M). A different perspective was expressed by one mother who emphasized openness in the parent-child relationship, including with regard to HIV disclosure:

“I talk to him a lot. I try to, so that we don’t lose communication in a way that I know everything about him, what he feels, thinks, lives, everything. I want to be like a psychologist to him. I want to be like a friend also. I want to know everything about my son. I don’t want to have any barriers with him. That he isn’t embarrassed to tell me anything. So that there aren’t any barriers. I want to be like—that is why he also like—that’s why I told him about [my HIV status].” (1053M; translated from Spanish).

A few mothers lamented the lack of communication in their relationships with their children and expressed a desire to increase communication: “With him, I don’t know how school is, or bullying, or you know, influence, nothing like that, ‘cause he doesn’t really say much” (1042M). One parent highlighted the perceived negative consequences of limited communication:

“A year ago, he went to the mental hospital, and that’s because he wasn’t opening up talking to me. So after we went through that experience and now he’s opened up talking to me, it’s like I don’t have a choice but to either step up or let him back that down and fall back up into that corner.” (2039M)

Parents also discussed important elements of *how* to communicate with children, including speaking in an age-appropriate manner and speaking calmly:

“When I talk to him, I try and talk to him calmly instead of screaming and yelling like I used to.” (2019M)

“We as adults tend to talk on an adult level. Children don’t understand that, so I know I—I know I do it a lot and my children probably are like, ‘What in the world is she talking about?’ So we need to learn how to communicate with children on their level.” (2039M)

Overall, communication was regarded by most families as a positive and essential aspect of the parent-child relationship. Children showed appreciation for the communication with their mothers, such as a child who said, “She always tries to talk to me, that’s like, that’s what I love about her ... ‘cause it shows that she cares.” One mother highlighted how she uses communication with her son to foster resilience:

I guess one of my strengths is, like, realizing that, you know, creating an open dialogue and conversation about our personal lives amongst each other as a family helps strengthen the—the love and the encouragement we receive from one another, so, um, to avoid, you know, him having a tough time dealing with anything, like, he has to know that he can overcome and push himself through, because it comes from a mother that has done the same thing, that can be resilient. So I think that when you look at that, the biggest strength is just showing him what resilience looks like and how to stay joyful no matter what harshness may come through. (2019M)

3.2.2.3 Parent-child relationship quality.

Parents and children described several positive aspects of relationship quality and frequently characterized their relationships as nurturing, supportive, affectionate, warm, trusting, playful, fun, and friendly. Several children and adolescents expressed that they felt supported and cared for by their mothers.

“[My mom is] very caring. And she’s understanding also. She always been there. Yeah, she’s a really good mother, any mother that you would like want to ask for.” (1042C)

“I guess every time the way she says like, ‘Oh I will protect you in this way, I will care about you,’ that makes me feel safe. And I feel just happy when she says that because I can see someone that could understand me, and kind of understands also what I’m going through, so it’s kind of—and she is like a big sister, but it’s my mother, so she’s one of my best friends.” (1023C)

A 14-year-old girl discussed trust and reliability in her relationship with her mother, saying, “I think she’s a good parent. She’s my sister [laughs]. She’s like, she’s someone I can

definitely go to. She's someone I trust definitely" (1067C). This participant's perspective was consistent with that of her mother, who described her own parenting as "nurturing, empathic, and consistent" (1067M). The daughter also shared that her mother supports her through humor and playfulness: "She's funny. Like she always knows how to cheer me up when I'm feeling like down, down. Like all the way down. She'll start randomly dancing, but it's the best thing I've ever seen" (1067C). Other children echoed this perspective:

"She has a really nice sense of humor ... She makes me laugh when I kind of feel sad." (1023C)

"[My mom makes me feel] very happy, and sometimes she makes me laugh." (1053C)

In addition to positive aspects of relationship quality, a few families described conflict within the relationship. Most families seemed to acknowledge that conflict is a normal aspect of healthy, supportive relationships. A 13-year-old girl said that she has a close bond with her mother despite having occasional arguments.

Well my mom makes me feel like kind of like safer. She's the one has made me safest, and I've been more comfortable with ever since, like, I was smaller. Although, like sometimes we get into arguments cause like we're together so much that sometimes we get kind of like, without even knowing, we get tired of each other, but other than that like we're like we have really nice bond, yeah. (1032C)

The mother of an adolescent boy described the tone and resolution of conflicts with her son.

Since he has a temper, he gets angry but it's like I said before, he gets mad, but I don't want to change that because if he gets angry and sees that I stay quiet and remain low, then he will run all over me. So he gets mad and I get even more angry because—"Calm down!" I start correcting him, but it rarely happens, because I'll repeat it again and I might sound annoying ... We're not the type that fights and screams. If one of us is angry, we separate ourselves and calm down. And if he messed up then it's like, "Sorry, I'm sorry mom." (1025M; translated from Spanish)

Similarly, the mother of a 15-year-old boy said that she works to resolve conflicts with her son by reminding him that they need to support one another.

“Sometimes I don’t want to go out with him to the stores because he becomes a bit negative, um, demanding. And when I say, “No means no.” He gets mad and he just leaves. And it’s not so much that he leaves, since he can’t be on his own on the bus. But then he sees that I start crying. He sees me, and then he asks for my forgiveness. “Sorry Mami, sorry. It’s just sometimes I, I know that I don’t understand things.” “Well you should understand, son. It’s just you and me alone. I have you and you have me. So we both have to help each other. So you have to help me and I have to help you.” (1049M; translated from Spanish)

3.2.2.4 Parental involvement and monitoring.

Almost all families described parents’ involvement with their children as an important aspect of family functioning. Several children and parents shared that they enjoy going out together, and some expressed a desire to spend more time together. A 11-year-old girl stated that her favorite thing about her mother is “that she’ll go places” with her, such as to the park (2066C). Her mother described her involvement in her child’s school and other activities:

I try to participate in, you know the community, and activities. She go to an art thing over there at the community center and, um, every now and then I’ll pop on over there, peep and see what she doing. (2066M)

A common theme from both mothers and children was a desire to spend more time together. For example, one adolescent boy shared that he would like for his mother to be home with him more often:

Interviewer: Is there anything that you wish that your mom did differently?

1049C: That, um, she’d come home more.

Interviewer: Tell me about that.

1049C: She usually, um, she has work to do and she’s usually not at home. So, I’m usually like here at home until like 8.

The same teen also expressed that his mother makes him feel happy when “she takes me places to go, or like if I feel like I want to go somewhere she take me.” The mother of this teen stated that she tries to stay involved with her son by communicating with his school (“Sometimes I call the school, ‘What do I need to do?’”) and that she has knowledge of her son’s activities because he informs her of his whereabouts (“He doesn’t go out—he doesn’t go out to the street. Like he

will say, ‘Mami, I’m going to the store.’ ‘Okay, go to the store.’ ... So he lets me know when he goes out” [1049M; translated from Spanish]). A mother of an adolescent girl expressed that she would like to spend more time with her children:

Interviewer: What is something in your parenting that you want to improve?

1067M: Improve? Um, family time. We don’t really spend a lot of time doing things, just together as family. I mean, we take road trips, we do stuff like that, but they’re spread out in between and in a normal day we’re kind of, like, in our respective corners.

Similarly, the grandmother of a 10-year-old boy identified family time as an area of improvement in her parenting:

Interviewer: What’s something you want to work on [in your parenting]?

1082M: I don’t know. We’re pretty tight. I’d like to spend more time with him. ... But either I’m on the go, or he’s on the go.

Another mother described both the importance and difficulty of giving her children enough attention:

Umm, I don’t feel like I’m as attentive as I could be, but he feels like, [Child] feels like I do give him a lot of attention. He has said that and expressed it, but my daughter on the other hand, she says, umm, “Mommy you don’t play with me enough.” Well no she says, “You don’t play with me at all.” Basically like when she wants to play with dolls and stuff, it’s not interesting. (2019M)

This mother identified “showing up to whatever they have going on” as being one of the most important aspects of parenting. Another child echoed the importance of spending one-on-one time together when describing an aspect of her mother’s parenting that she wished were different:

Interviewer: What do you wish your mom did differently? [...]

2044C: Mmm, umm, she would, umm, she would hang out with us like a little bit more than—like she would hang out with us one by one, then, you know, all of us at the same time. You know, like, hanging out with one of us and then the next one.

This participant’s mother shared that she works to spend time with her children and monitor their activities:

Uh, day to day, we're always pretty much together, when she's not at school. Umm, they are always with me. [...] Just keeping them close, kind of monitoring them on what they're doing, trying to prevent them from getting out into the wrong elements, such as the wrong friends or wrong crowd to influence them do to the wrong things. (2044M)

A 12-year-old girl said that, although she already goes out with her grandmother “a lot,” she would like to be able to go out together more frequently:

When I ask if she fixin' to go somewhere, and I ask her can I go with her, she don't take me [...] Like sometimes she goes to the grocery store and I ask her can I go with her. She's like, “no.” (2083C)

This child's grandmother identified her biggest strength as a parent as the fact “that I do spend time with them” (2083M). She further described her day-to-day interactions with her granddaughter, saying, “We watch TV. We interested in the same things. So we bond. We have time together. We block everybody out. And it be me and her in there.”

3.2.3 Parenting stress and HIV-related challenges.

Most mothers expressed that they experience at least some stress related to their parenting, with several different sources of stress identified. These included financial strain, single parenthood, knowing how to raise children and how to teach right from wrong, navigating developmental issues, balancing multiple responsibilities including managing HIV, feeling irritated with the child, and several HIV-specific stressors such as physical limitations and illness.

3.2.3.1 Financial stress.

The most frequently cited aspect of parenting stress was financial strain and un- or under-employment. Several mothers described the stress of not being able to provide financially for their children:

The most difficult thing about being a mom might be ... that they have a financial problem and [I won't] be able to help them. Maybe as a mother, that would be the most

difficult for me, because I don't have a—a career, a—a way to financially be able to support them in a situation that they might need. That is the most difficult.” (1032M; translated from Spanish)

I guess one of my challenges may be, um, searching for an employment that's gonna give me a better quality of life where I don't have to worry about if I make too much money that I'm going to lose my health insurance for a month and I won't have medication and stuff like that. (2019M)

Sometimes we don't have a lot of money to do everything that needs to be done. And the little money that I do have, I keep my bills paid. And I try to put a little bit to the side so we can go out to eat, you know, get clothes, whatever I need to have. So I try to do the best I can do. (2066M)

One mother stated that financial strain is a larger stressor for her than telling her child about her HIV status:

Interviewer: How has your stress level changed, if at all, since telling [Child] about your HIV status?

2083M: It—that's not my stress problem. My stress problem is trying to keep above float, instead of dropping down below poverty and not have anything going on.

3.2.3.2 Parenting challenges.

Another commonly referenced source of stress was mothers' difficulty navigating decisions in their parenting style, including how to teach right from wrong and how to speak to their child appropriately. One mother expressed the challenge of trying to communicate with her 12-year-old son on his level:

Interviewer: Tell me about what's hardest about being a parent, or what's the most stressful?

2039M: Trying to, like I say, be on their level. Just trying to be on his level, like, trying to understand their logic and where they're coming from and their point of view.

Some mothers said that they find it difficult to find the best way to teach their children right from wrong:

[The hardest part is] I guess just making sure that they, um, they just have morals, and just, um, know about—you know, to go to school, just to, just you know, their choices in life to make you know good choices, and know what's right from wrong. (1042M)

The hardest thing about being a parent is—Raising kids is hard [laughs]. Raising kids is hard because, like I said before, you try to shield them from certain things, you try to, umm, try to make sure that they don't hear this and see this, so that they won't, um, become a statistic or just—won't follow the negative things that they see. Like, that's hard to—to just trying to stay inside your child, to like, let them know that this is wrong, like you might not want to do this. (2067M)

Interviewer: Tell me about what's hardest about being a parent.

2019M: ... Raising the kids, you know, umm, you know teaching them right from wrong with the understanding of, uh, you know, your own personal experiences. But don't make my experiences their experiences, meaning like, just because I look at life like this, doesn't mean they have to apply that to their lives as well because of my own experiences.

Relatedly, a few mothers highlighted the challenge of navigating developmental, and even generational, changes:

Interviewer: Tell me what is stressful about being a mother.

1025M: Mm, well, knowing how to educate them. That's the hard part because since they're growing at different stages and different life stages, they keep growing. So one has to know, if they are small then they have small problems, and as they grow their problems continue to change. There are different life stages they each go through, and one has to continue educating oneself to know how to deal with them, to know how to solve them, and to know how to help them, how to discipline them, know how to advise them. I think that's the most challenging part. (translated from Spanish)

I got kids, like, at 3 different generations, it seems like, and sometimes it gets overwhelming with the different issues because it's like I have—I have a 22-year-old, she came up in the 90's. Now I got a 16-year-old, which is coming up, like, right now in this era. And then I got that 11-year-old, she's like in the middle of this era and whatever her era has to offer [laughs]. You know, and I'm scared of what this right now because she 11, so she still got, she got a era to get into her teenage years too, cause it's changing so fast. (2076M)

3.2.3.3 Single parenthood.

The majority (80%) of mothers in the sample were single parents, and several raised this issue as a source of parenting stress. Mothers described taking on both a mother and father role for their children, such as one mother who said, “Well, I am alone. And it's always hard being alone, having to be a mother and father at the same time. That is something stressful because sometimes there are things that, uh, I don't know, that I'm missing” (1023M; translated from

Spanish). Another mother shared that being a single parent is particularly difficult as a woman raising a son.

It's hard, and it's not easy being a single parent. Like, that's something I don't want my girls to be, but it's also something I don't want my son to be, because he is my only boy. But it's like, okay what do I—how can I raise a man when I'm not a man? (2044M)

For some parents, the stress of single parenthood is also associated with other stressors related to socioeconomic status. For example, one single mother describes the difficulty of raising her teenage son alone, particularly when her limited educational attainment makes it difficult to help him with his schoolwork.

It's very difficult for me for me being alone. And uh, right now he is doing a bit bad in school. And well, how can I help him if I didn't study [go to school]? I didn't get to the 3rd grade, only to 2nd. Sometimes I get sad or upset. How can I help my son? [...] The most difficult about being a mother is, like for example, right now I am father and mother for him. I've always been father and mother for him. And right now for his age, it's very difficult. (1049M; translated from Spanish)

3.2.3.4 HIV-related challenges.

Mothers described several challenges specifically related to being a parent living with HIV, such as stigma, fears of death, staying healthy, and privacy concerns. One mother described HIV as a “cloud” because of its stigma:

The challenge is HIV, you know, it—life still goes. You still eat, drink, sleep, you know, if you're vigilant and strong enough, you take your medicine, you know, you eat healthy as you can, but just HIV in and of itself is a cloud, that's the hard part. Can't say it, can't talk about it. There's not really this whole acceptance of it like that. Like I'm quicker to tell you I'm an alcoholic who's been sober for almost 11 years than I would ever be to tell you well guess what and I'm HIV positive. (1067M)

Related to the decision to disclose her HIV status to her child, one parent shared that her husband, who was also living with HIV, did not want her to disclose her status because of societal stigma around HIV:

But I do it in respect of my husband, because he doesn't want anyone to know since he is more private. You see that I am in charge of everything about my son ... I was telling

him and he would tell me not to tell my son anything. He didn't agree that I tell my son. Of me telling him that he is sick and so am I, he didn't like the idea.

She went on to describe disclosures to other family members, including her sister and mother-in-law, whom she felt needed to know for health reasons. Another mother described the burden she feels because her children worry about her health:

Well the most difficult [part of being a parent living with HIV] is, uh, that it hurts you deeply that your children live with that pain. In the sense of worry, that it might be, what if she doesn't get up from this. That is the most—what hurts me most. That your health affects what you love most ... That, um, when you get a cold or a fever, they are there, "Mom are you okay?" "Mom are you taking your medicine?" That is the preoccupation of seeing them, that they have on their backs. That weight, it hurts. That weight is what hurts the most about HIV. (1032M; translated from Spanish)

Mothers also discussed the stress of taking care of their health, getting sick, and fears of death.

One mother said,

The worry about being sick, not being able to get up the next day, not being able to know if you're going to be here tomorrow, um, if you're going to be alive. It's a lot. If you miss a day of medication, if that's going to make me sick. Just—just that worry of, what if? (2044M)

Similarly, another mother expressed fears about who would care for her children if something happened to her, saying,

The hardest thing of being a parent living with HIV is leaving your kids, like, just trying to stay healthy so that—my biggest fear is—is to die and my kids are not grown and got a structured life, you know. Not saying it gotta be a perfect structure, like just a structured life, like being a productive citizen and not sitting in jail or, you know, doing something or—or being in a situation where they be like, "Dang, my momma not here, and I wish she was here. 'Cause she be able to help me out of this situation, yeah, she'll know what to do". They can't come and talk to me and even though I'm going to say something they don't like. I'm still gonna say it. That's my biggest fear of being a parent with HIV, having, um, young kids. 'Cause I feel like aint nobody is gonna treat my kids like me. (2076M)

Another mother described the difficulty of sharing her status with others, stating that she sometimes still experiences disbelief about her own status: "It's still hard for me to believe it,

you know. ‘Cause a lot of time I’m not sick, I’m not coughing, I’m not, you know, in pain, and then I’m still my—do I really have it?’” (2066M).

In contrast, though most parents felt that HIV creates additional stress in their parenting, a few mothers shared that they live a normal life and are minimally affected by their HIV status. For example, one parent shared that HIV does not pose unique challenges to her parenting, particularly since disclosing her status to her child:

It’s not that difficult anymore. I see myself as any other mother. Now I try not to focus too much on my illness because if I focus on it I get depressed. But I don’t see it as problem. Having that disease doesn’t make you different from other mothers or better. It’s—it’s like any other mother only. I don’t know how you would say it, but it’s, it’s different, it’s something different. Like before I saw it differently, now it’s completely different, knowing that she knows I have it, yes there are times she tells me, “Oh you feel fine.” For me it’s like—when she says, “You don’t have anything, I never see you sick”, that makes me feel better. So no, no I don’t feel like it’s been a challenge either. (1023M; translated from Spanish)

3.2.4 HIV disclosure.

3.2.4.1 Mothers’ decision to disclose HIV status.

Mothers identified a number of different reasons motivating their decision to disclose their HIV status to their children. Mothers’ most frequently cited motivation for disclosure was the child’s developmental readiness. Some mothers expressed wanting to disclose before their child entered puberty. Several mothers cited sexual risk reduction and HIV prevention as a strong motivating factor for disclosure. One mother said,

[I told her] that I just want you to take care of yourself, that um, that I know that one day, I hope that you do it, um, at an adequate age. One day you will be sexually active, and I hope that that day will be an appropriate age and that you take the responsibility that is required so that won’t happen to you, because it isn’t just this disease; there are many sexually transmitted diseases. So it isn’t just a pregnancy; there are a lot of things. (1032M; translated from Spanish)

Another mother described her reason for disclosing by saying,

I don't want her to have HIV like me [...] [I told her because] it was time. She's coming to puberty. She started to like little boys. She needs to know the meaning if you are not being protected, if you're not safe, you're gonna get pregnant. You have the chance to catch all of these STDs, plus HIV. (2083M)

A mother of a 12-year-old boy reflected on generational differences in HIV education:

I really like, uh, wanted to educate him, because honestly when I was in school, I didn't know anything about HIV. I never heard about until—honestly I probably heard of it in eleventh grade, but it's just not something that they have a steady on, 'You guys need to really be practicing safe sex,' or, 'You guys need to be going to get tested.' They didn't do that when I was growing up. (2039M)

Approximately half of the parents stated that the TRACK-II intervention helped them recognize signs that their child was developmentally ready to be told about their HIV status. For example, when describing what motivated her to disclose to her son, one mother said, “It was probably the [TRACK-II] study. Um, I mean, um, they help you with—to explain in his age group, and it helped. I think that's what influenced me more to explain to him right” (1042M). One mother who was in the control group shared that being asked questions about HIV disclosure prompted her to share her status with her son (“I mean, in some ways the questions that you guys asked helped. You know, ‘cause it makes you kind of sort and think things through” (2019M).

Additional reasons that mothers cited for disclosing their HIV status included to combat stigma, the child asking more questions about medication or health, fear of the child finding out from someone else, mothers' sickness or hospitalization, a motivation to disclose when feeling healthy, and being prompted by media with HIV-related content (e.g., TV, movies, pamphlets, books).

3.2.4.2 Children's reactions to HIV disclosure.

Children and parents reported a wide array of negative, positive, and neutral emotional and behavioral responses to HIV disclosure, ranging from relief and happiness, to feeling

“normal,” to sadness and worry. Overall, most families reported that children adjusted to the news quickly and easily, though some did experience (usually temporary) negative emotional reactions. The most common response described by both mothers and children was that the child felt normal or neutral about the disclosure. Nearly all parents and children shared that the child reacted calmly and/or adjusted to the information quickly. Several children described their emotional reactions as “normal,” “fine,” “neutral,” and “calm.” For example, a 14-year-old girl shared,

She tells me the whole thing, goes down the whole rabbit hole. I think she was confused as to why I was just like, “Ok!” and she’s like, “What?” [laughs] I’m like “Ok!” ‘Cause like, it didn’t bother me. Same mother I’ve always had. You’re the same person before you told me this, same person after you told me. I’m not just gonna be like [gasps], “Oh no!” You’re the same person. I don’t really mind. Doesn’t bother me in any way. (1067C)

Another child shared that she felt happier after learning of her mother’s HIV status:

I think I kept being the same child, smiling child. But no, it didn't change none of me. Like, no. Actually it made me more happy because I kind of understood why and I kind of understood why I went to these places [HIV-related camps], and so, yeah, so I’m like, okay now I understand. (1023C)

Some mothers shared that they did not perceive significant changes in their children’s behavior after the disclosure:

I don’t notice like he was impacted. Like that it was like a change he would make with me. Like, I don’t know that he would be different with me. That he would have said, “Ay my mom, poor her” or “She is going to die.” No, no, he took it—he took it not too strongly, I believe. Mhm, he understood that it was a normal illness. (1053M; translated from Spanish)

Well, his behavior has been the same. It’s been the same. Because for me—no, it’s been the same. I don’t see him reject me at all. (1049M; translated from Spanish)

[He reacted as] his normal self, nonchalant. I mean, he said—he hugged me and kissed me, and he did, but he still just his normal self. (2019M)

A common theme was that children responded more calmly than mothers anticipated. For example, one mother reported that, though it was somewhat emotional, the disclosure conversation went more smoothly than she had expected:

They were more open to me telling them than I thought they would be. And they was like, 'Ma, you're okay, you know you're going to fight through it.' ... You know, I thought, you know, someone was going to cry. And you know they did, you know, do a little crying, but it wasn't as bad as I thought, you know, kept telling myself it was going to be, like, oh someone is going to have a panic attack. (2044M)

Though many families indicated that the child's response to the disclosure was neutral, calm, or positive, some children did experience negative emotional reactions, including sadness, worry, and anger. The most commonly discussed negative emotions were sadness, worry, and fear. For example, one child described feeling both sad and worried:

It was pretty like sad knowing that like it was incurable and she was gonna have to live with that, but like other than that it was more like just worrying. But like, is she gonna be ok? Is, like, anything gonna happen to her? Is she fine? Does she need anything? And stuff like that. (1032C)

For a teenage boy who had existing difficulties with anxiety, finding out about his mother's HIV status exacerbated his symptoms temporarily: "I guess in the beginning it made me feel a little more anxious, but with the therapy that kinda went—went away" (1042C). He went on to describe that in spite of the initial adjustment period, his anxiety overall improved after learning of his mother's HIV status. He noted that prior to the disclosure, he felt more anxious, but that he felt a sense of relief after knowing about his mother's health: "Well, I was a little bit more worried before [she told me]. And I was kind of relieved that she, uh, told me. [...] Of course I felt a little more sad, but that was just at the moment, but I also felt happy, 'cause, you know, she told me" (1042C).

Many children expressed that they felt a combination of emotions, often both positive and negative. A 9-year-old boy shared that he felt simultaneously sad and happy when he learned of his mother's HIV status:

1053C: I kind of feel sad that my mom has that and has to take medication or else, you know ... [I feel] kinda sad, but I still feel happy because she's still alive.

A 13-year-old girl described feeling sad and angry about her mother's illness:

I felt, um, sad and angry at the same time ... Like, 'cause the way she told us that she was, um, HIV—like how she got HIV positive, I felt very angry and stuff like that. Since she said she had gotten it from our dads, and I felt angry towards them. ... [I felt sad because of] like all the stuff that I had heard about HIV and stuff because I thought she was gonna like die from it and things like that. (2044C)

Her mother shared the view that the teen felt sad after the disclosure, and described how she helped her daughter work through the feelings of sadness by providing reassurance:

Well, she basically came and told me, you know, that she was sad for me, because she didn't know what to do for me. And basically, like, I told her all we can do is be there for each other. Try to make it less stressful for mommy which cause less stress for all of us, you know, and just take it day by day and that's all that we can do. (2044M)

Later in the interview, she went on to describe her child's adjustment to the disclosure. She stated that after a brief initial period of sadness lasting about 30 minutes, her daughter became calm.

Interviewer: How long do you think it took [Child] to adjust and kind of get back to normal?

2044M: Not long. Um, after I told her, you know, the things that I need to do to make sure I'm okay and to prevent myself from, you know, being sick or in the hospital, you know. And she was more, umm, not more open, but more—it calmed her down a little bit more to know, 'Okay well, mom is not going to die tomorrow,' or you know, 'We have things that are gonna help her keep her here,' you know. So it was, like, a relief for her to know, you know, well mom is not—nothing is going to happen to her right away.

Like this family, other participants also shared that the child experienced an initial period of sadness or worry, but that they adjusted relatively quickly. For example, a 13-year-old girl and

her mother both agreed that the child's initial sadness gave way to feeling calm and neutral. The mother shared,

At the moment I told her, I saw her being really sad and I saw her reaction like being really sad, like "What's going to happen? Are you going to die like the boy [in the movie]?" "No." But then she changed when I started explaining it to her more, and she's like "Okay." (1023M; translated from Spanish)

Similarly, the daughter described that she adjusted to the news relatively easily:

So actually, I didn't feel—I wasn't mad with her, 'cause some kids would be, but I was like, I accepted her because she is my mom, and people say it's bad because it goes—it passes through or something, like it spreads, but I've been—I've been seeing in time and nothing happens. She seems like a normal parent. [...] I wasn't surprised, I was alright with it, like okay. I wasn't mad, I wasn't mad at her, I wasn't sad; I was just, like, calm, like alright. Because she told me that as long as she drinks the medicine everything will be alright. So, I think that thing stuck in my head, that as long as she drinks it, nothing will happen bad, so I was calm about it. (1023C)

Another child shared that she “was just sad for one day” (2066C). Her mother's perspective provided a slight contrast, as she perceived the child to be uninterested and calm from the beginning: “She wasn't even interested. She was like, ‘Mmm.’ ... She didn't say much” (2066M). In some cases, children remained largely silent during the disclosure conversation, making it difficult for mothers to gauge their children's emotional reactions. As one mother put it, “I ain't get no feedback” (2076M).

Several children expressed fears that their mother would pass away. One adolescent boy, whose mother experienced co-occurring health issues in addition to her HIV status, said,

I was worried that she was like—she would like pass away and stuff. ... it does [worry me] because, like, I know she still has it, you know? But like, not that much because, like, she's healthy right now. (1025C)

HIV-related deaths of other family members also affected how children received the news. For example, in one family, the child's experience losing another parent to HIV exacerbated his negative emotional response to learning of his mother's status:

Interviewer: How did he react about the news of learning about your status?

1049M: He got a little sad, and he wondered if I was leaving. I told him, "no I'm not leaving. I'm still going to be with you."

Interviewer: Okay, when you say "leave," he worried about your death?

1049M: Yes, like how he lost his dad.

Consistent with his mother's report, the adolescent shared that he felt afraid that his mother would pass away: "I felt like scared because like usually by the disease you usually die quicker. And I'm scared that one day I'm just going to wake up and she's not responding" (1049C). He went on to explain that he had not communicated this fear directly to his mother, and that he also felt afraid of losing other family members who are living with HIV. Another child expressed feeling upset that his mother had not disclosed her status earlier, out of fear that she could pass away:

It's not just she didn't tell us; it's, like, the fact that she could die from it, yeah, the disease that she has. It would've been better for us to know 'cause she could've died at any time from having HIV and we wouldn't have known how she died. (2039C)

Similarly, another child also expressed some regret that her mother had not shared her status sooner, though she noted that she understood her mother's reasoning for waiting to disclose.

Interviewer: Did any part of you feel mad about her not telling you sooner?

1032C: Uh, no not really. 'Cause I knew like, that she didn't want to really affect me. 'Cause since I was small, I kind of realized that she didn't want to tell me. 'Cause I would ask her and she's just like, 'Well I'll tell you when you're older.' Like, 'It's fine. I'm fine.' And she wouldn't want to worry me. So, I was kind of ok with it 'cause she did it with good intention. So there was no reason for me to be really mad at her. But if she could have told me sooner, I would have been even better with that, but there's no reason for, like, me being mad at her for telling me, like, later.

A few families described positive changes related to the child's attitude toward people living with HIV and/or openness to discussing HIV-related issues:

I guess I was kind of, uh, I guess kind of opening up a little bit more, like, "Oh ok. This is a normal thing. Mom has it, and she's normal." I guess it gave me another reason not to alienate people who are like that. Cause I have my own living example. They're just normal people, who are just a little bit different. (1067C)

1032M: Mm, I feel that she worried a little bit more about, uh, how she sees relationships outside, how she sees young people's thoughts about the topic. Um, I feel that she matured a lot in that way. Like, if one day they might expose her to a topic, or she could sit down, I feel that she got the confidence to talk freely of the topic
Interviewer: Okay, so maybe you feel that she feels more confident in being able to communicate with others about the topic.

1032M: As long as the people, uh, she feels comfortable to talk about it. And I feel that, uh, she can give the information at her age level of what she knows to give to others.

Though there was consistency between mothers and children's accounts in several families, some families had slightly or widely different perspectives on the child's adjustment to the disclosure. Generally, where discrepancies were observed, mothers reported more calm and neutral reactions compared to children, who reported more internalizing symptoms (e.g., sadness, worry) related to the disclosure. For example, the grandmother of a 10-year-old boy reported that the disclosure "didn't phase" her grandson (1082M). She described a one- to two-week period in which he was more "clingy," but shared that he adjusted quickly after that. She also noted that she is unsure if the child paid full attention during their conversations about HIV. In contrast, the child shared that it took him about a month to adjust to the news. He said, "[The rest of my family] had 10 years to adjust to it. I only had, like, only a few" (1082C). The child stated that at the time of the disclosure, he was about 6 years old and did not know what HIV was.

3.2.4.3 Mothers' experiences of HIV disclosure.

Nearly all mothers perceived that the disclosure went well overall. One mother described thinking that she handled the disclosure appropriately, including communicating the child's developmental level:

I feel that I did it in a way, um, um, appropriate. I feel that I did it in a way—on a level with her capacity to understand of her age—her level of age. I feel that I did it in, um, uh, um, um, very, very private with her. In that it was her dad, me, and her. And I feel that it was the right time to tell her too. (1032M; translated from Spanish)

Several mothers echoed similar sentiments that they were pleased with how the disclosure conversation went, and that their stress level decreased after sharing their HIV status:

I felt good about—I, um, I did—I felt good. I mean, I tried to do the—the—the way, um, for him to understand and know and not be left with so much questions, ‘cause he’s not the type to ask, but I felt that was a good conversation that it was very information, knowledge. (1042M)

“I feel very good about telling him the truth about what I have. I feel very good.” (1049M; translated from Spanish)

Several mothers expressed that they felt a sense of relief after disclosing their HIV status to their child. Mothers shared that they felt more comfortable speaking openly about their status and about sex, and that they felt like a burden had been lifted after the disclosure.

I feel more, I feel more at peace knowing that my family knows. Because they see it as normal, they hug me, they play with me my brothers and sisters, my brother-in-law, my other sister in law. I feel at peace. (1023M; translated from Spanish)

I don’t feel like I’m holding as much in as a secret, you know, like, I don’t have to dance and prance around and tiptoe around my conversations when I’m talking about it, so I can freely talk about condoms and sex and HIV like it’s just normal conversation in the house. So it doesn’t seem like abnormal or uncommon to them; it’s part of their lives. (2019M)

Actually it helped me more than I felt that it helped them. It was like more of a release ... After that, I felt like I could really tell anybody; it doesn’t bother me, ‘cause if I can tell my kids, I can tell anybody. [...] Since I’ve told them, it’s been more calm, like I don’t feel like a weight on my shoulder. (2044M)

Other positive aspects of disclosure described by caregivers included that mothers provided reassurance and emotional support to the child, kept an appropriate and calm emotional tone, were open and honest, and offered clear information. Mothers also shared that children listened and paid attention during the discussion. When asked what could have gone better during the disclosure, many mothers could not identify an aspect of the conversation that they would have changed. These mothers felt that the discussion proceeded as smoothly as could be expected, often exceeding mothers’ expectations.

Interviewer: If there is something you would have liked to change, what would it be?

1023M: I think that there wasn't—wasn't, because I did explain to her the word HIV, but I feel like, I think the [TRACK-II] program really prepared me to talk about it more and focus and talk to her more directly. Yes, so I don't think I would change anything, everything would remain the same. [translated from Spanish]

I think for her, it was perfect. Perfect execution, delivery. You know, too much would've been—too much would've been overwhelming. (1067M)

Other parents identified aspects of the disclosure process that they would have liked to improve, such as being able to tell the child more details about their health and HIV infection, having a better awareness of the child's existing understanding of sexual health, waiting until the child was older, regretting that the child's father was not present for the disclosure, worrying that the child does not believe her about her HIV status, and wishing the child had asked more questions.

3.2.4.4 Family changes after HIV disclosure.

Participants described a number of changes, primarily positive, in their family functioning, including with regard to parent-child relationship quality, communication, children's behaviors, and mothers' stress level. Though many families endorsed at least some type of positive change, the vast majority also expressed that most aspects of their family relationships remained the same. Several children shared that their family relationships have remained stable.

Well, it didn't change nothing. The family's still the same. My mom is still the same. It didn't change much. Our family, we talk normally. I guess it's just a normal family. Even though my mom has that disease, it's not going to change nothing. (1023C)

We still do everything we do since then. Like we do everything and stuff like that. We still do what we do ... Like we still talk like we talk to each other. Stuff like that. (2083C)

Interviewer: How have things changed for you since your mom first told you about her sickness?

1053C: Um, not really because she—I still feel happy

Interviewer: Okay, things haven't changed too much. Do you feel any different?

1053C: No, because she actually still does the same thing every day and every day ... Like, she does the same thing, like, first we wake up, she takes care of [my younger sister], she cooks, she showers, and she takes her medications, and she plays with me. [...] Interviewer: What do you think is helpful about having the routines?
1053C: Routines helps us do something we gotta do or just like kinda like a schedule.

Nothing's really changed. The only really change is that after her doctor's appointments she'll update me. Aside from that, it's exactly the same as it was before. (1067C)

Mothers shared similar perspectives that there have not been major changes in their parenting or family relationships since the disclosure.

How have my parenting methods changed? Well they have always been the same, they haven't changed much. (1025M; translated from Spanish)

Everything has been the same. She has been very mature, very intelligent, cautious, so, uh, um, everything has been good." (1032M; translated from Spanish)

In addition to endorsing stability in their family functioning, most families also shared that the mothers' disclosure of her HIV status served to strengthen the parent-child relationship and mothers' parenting quality. A grandmother of a 12-year-old girl said that following their disclosure, their relationship quality improved:

2083M: Actually I think [our relationship] got better. Because she used to be scared to talk to me. That's why I tell you she wouldn't say nothing to me.
Interviewer: Okay, so it made her feel a little bit more open with you.
2083M: Mm-hmm, and I try to tell her to talk more, not hold nothing back.

Her granddaughter shared a similar perspective, saying, "it's better 'cause we know" (2083C). Similarly, one mother described feeling a stronger bond with all of her children following the disclosure:

I think our bond has gotten a little stronger. And, um, we talk like every day about—sometimes it's just random stuff, but it's like it drew them closer to me, which I love. I just want them to know that their mom is going to be there even when I'm not there. (2044M)

Some families attributed their strengthened relationship to the trust that the mother communicated by sharing personal information about her health with the child.

It helped our relationship because she told us her biggest, biggest, biggest secret. So now I feel more close to my mom because of what she told us. (2076C)

1067M: Our relationship shifted a lot. It went from a non-existent one to—she told me there's nothing—nothing's allowed to happen to me. She said, "If I have to, I'll make the stairs myself and go up there and be like, Not this one, bring her back!" So I mean it's that kinda—she checks in, she—"How was school?" "It was good." She'll come show me things, "Mom," you know she wants to share her life with me.

Interviewer: What do you think it was about that conversation, or about sharing your HIV status, that caused that change?

1067M: If I had to guess, it's gotta make you feel pretty damn good to think somebody would trust you with something so important, even at a young age, like, 'you trust me enough?' Like, so it's—it opens up something, like, 'You picked me,' you know what I mean? And she has every right to think that and you didn't pick [Sibling], you didn't pick [Sibling], you didn't pick none of my sisters, you picked me. So maybe you do love me.

1042M: I think it has gotten better, um the closeness was there, I think that it did in a positive way.

Interviewer: Can you tell me a little bit more about how it got better?

1042M: Umm, I think it just maybe, um, I wanna say trust, but I think trust could mean other things. Not that I was like—I want him to trust to come to me since, trust me, since he's so quiet. But, um, I think he just feels relieved and trust with me and him and I would be able to—like me, I think he felt that.

Interviewer: Like that he feels that he can trust you more or that he knows that you trust him?

1042M: I think that both

[Our relationship has] just got better ... Now she shares more things with me ... Like the fact that she told me about it, just she's a little bit—she's closer and you know. (1042C)

Mothers believed that the quality of their parenting improved after disclosing their HIV status. Some shared that the disclosure increased their openness and communication with their children, that they began to give their children more freedom as the communication increased, and that they began sharing more information about sexual health with their children.

[The disclosure] made me more open, open to her. Not so, um, directive, "do this, do that, do this, that, do this, do that." It's made it more open, where you can come to me and I can be like, "Look, I need you to do this, you know, can you help me do that?" (1067M)

So I think that my parenting has changed in the fact that, you know, just taking accountability and realizing that, you know, if I don't want my children to go through this, then I need to, you know, equip them with the right amount of knowledge and

information so that they can make the healthiest and best decision for themselves.
(2019M)

Interviewer: Do you feel like your parenting has changed at all since you had that conversation?

2044M: Um, yeah, I feel like I'm more open to letting them—I'm not—my strictness is kinda changing a little bit. Um, like I stated earlier, like it's—I'm still strict with certain things, especially, like, their education and them—them seeing the world before doing anything ... It makes me look at things differently if they can be open to, you know, mom saying, from 'mom's sick' to 'mom's HIV,' then I can be a little more open ... So I don't have to be so clingy I guess, hold on to them so tight ... And they've noticed it, because I started letting them go out with friends to the malls and like have sleepovers and stuff. They've even noticed it. 'Mom is letting us do stuff that she wasn't letting us do before' ... We're more open with each other, um, kinda like friends, you know, in a way. Um, they tell me everything some.

Interviewer: What do you think changed about your parenting?

2083M: Our conversations, and that we spend more time together. We talk more. I mean, it's a work in progress. She's 12. She's at that age where they don't want to talk to they parents. They don't want—they want to be rebelling. And they hold everything in. But like I can tell when something is wrong with her because—but my main goal is to make sure every day I ask her, "How is your day? How is your day go?" Instead of saying, "I had a bad day." Instead I put my feelings on the side ... Instead of me saying how was my day and complaining about myself, I ask her ... That's what I learned to going to [the TRACK-II program] parenting class and stuff like that. How to have open, honest, open conversations and try to put their feelings and how they day was. It will make them come to you even more.

From children's perspectives, communication in the parent-child relationship also improved. Children noted that they talk with their parents and other family members more

We get to communicate better and I get to tell her stuff about like how school and how it been and was been going on and what I've been doing. (2076C)

Interviewer: How have things changed for you and your family ever since she first told you?

1032C: It's more, like, open. So whenever people like, especially my siblings, like talk about that, they're just like, "Oh, well [Child] already knows, so it's fine." And stuff. Plus, I had to mature so they're just like, "Oh, she has to mature, she has to know." And stuff like that. [...]

Interviewer: How about your relationship with your mom? How has it changed since she told you?

1032C: It's mainly like, we'll talk about more things, 'cause she doesn't, you know, now that—since you've reacted good about something that wasn't good, she knows that she

could tell you a lot more about other subjects. So it's kind of like more open, like not that much worry going on. Like more reassurance and stuff. And you feel more comfortable.

A common theme regarding changes in the parent-child relationship after HIV disclosure was that many children began offering increased support to their mothers through a number of different means. Children expressed concern for their mother's well-being, tried to help take care of their mother's health, or started helping more with household tasks such as chores. Several families shared that the child became more obedient, helpful, and responsible. The majority of children began reminding their mothers to take their medication. Some children provided emotional support to their mothers by offering reassurance or trying to cheer them up. For example, one mother said that her adolescent daughter provided her with both emotional and tangible help following the disclosure, including reminding her to take medication, talking with her about her health, and offering reassurance. In one family, both the mother and the child reported that the child began offering increased support in the form of reminding the mother to take her medication:

Me and him have got closer, like it...he checks on me and asks, 'Ma, have you took your meds today?' or 'Ma, how are you feeling?' Or if it looks like I'm feeling a certain type of way he'll be like, 'Ma, you need me to do something for you?' He's very caring, more caring now. (2039M)

Well I—first I'll ask her if she's okay, and then sometimes she'll say yes and sometimes she'll say no, and sometimes she'll—she feels sick, like sick like throw up sick, and then I'll go on and try to nurse her. (2039C)

An adolescent boy shared that after learning of his mother's HIV status, he worked to be “respectful to her, like listening to her, and not like trying to make her mad and stuff” (1025C).

Another child described similar changes in her own behavior:

I've kinda like grown more maturity. Mainly in like I've tried to like to not cross the line. Basically I've set boundaries for myself to try not to cross, like anger-wise or attitude-wise toward her. So, I'm more like trying like to gain more patience. Although, like I can't really sometimes, but I try. I really do. (1032C)

The mother of a 13-year-old boy noticed a similar change in her son, which she believed may be related both to his developmental stage as well as the HIV disclosure.

I feel like he's matured quite a bit, but I feel that has a lot to do with his age, not just my diagnosis. I feel my diagnosis may play a role in it, just the fact that he values not losing me to complications of HIV, but at the same time like I think that, umm, it keeps him humble. (2019M)

In some cases, the support offered by children to their parents was related to children's increased anxiety regarding their mother's help. For example, one child shared that she checked in with her mother frequently about taking her medication, and serving in this role may have exacerbated her anxiety and worry.

Ever since I was little, I would like, kind of like, have her in the back of my mind. And I would be like, "So are you ok?" and I would be like, "So did you take your pill? You forgot yesterday. I saw you forgot." So like, try and whenever like, I see, like, that she would forget, I would, like, after then, like, be more persistent in, like, asking her. And it kind of just, it just was mainly ongoing worry which led also to my, like, nervousness and stuff, and it added to that. But like, I wouldn't pay attention to that. I would pay more attention to my mom. (1032C)

In another family, a mother said that her son began reminding her to take her medication out of a fear that she would pass away otherwise:

And so he started making a change. A change—he made a change—a change that, "Mom, your medications," now every night, every, every night he's like, "Mom your medications, la la". He thought that I—well, I think that he thought that if I didn't take my medication, then I would die, that's what I think. So he would tell me "Mami." He lasted a while where he treated me well. He would ask, "Mom do you feel okay, do you feel okay?" (1025M; translated from Spanish)

3.2.5 *Transaction between parenting and child adjustment.*

3.2.5.1 *Children's responses to parenting.*

3.2.5.1.1 How mothers make children feel.

When describing how mothers generally make them feel, children shared primarily positive responses, the most common of which were that parents make them feel happy and safe, that they appreciate their parent, and that they feel nurtured by their parent. Children shared comments such as, “She just makes me feel happy” (1049C); “It makes me happy to know that she cares” (2039C); “[She makes me feel] very happy, and sometimes she makes me laugh” (1053C); “She lets me know that I’m loved” (1067C); “[She makes me feel] confident and happy” (2083C); and “[She makes me feel] happy, safe, and a little bit mad” (2044C). Children further described the positive responses they have to their relationships with their mothers.

I guess every time the way she says like oh I will protect you in this way, I will care about you, that makes me feel safe. And I feel just happy when she says that because I can see someone that could understand me, and kind of understands also what I'm going through, so it's kind of—and she is like a big sister, but it's my mother, so she's one of my best friends. (1023C)

Well my mom makes me feel like kind of like safer. She's the one has made me safest, and I've been more comfortable with ever since like I was smaller. Although, like sometimes we get into arguments cause like we're together so much that sometimes we get kind of like, without even knowing, we get tired of each other [Mhmm.] but other than that like we're like we have really nice bond, yeah. (1032C)

A grandmother of a 12-year-old girl shared that her granddaughter's response to her parenting is dependent on the child's perception of her grandmother's mood. For example, she described that the child will only ask HIV-related questions if she believes that her grandmother is in a positive mood: “I think she's holding back [from asking about HIV] because of how I react. Like it all depends on how I answer her or what she's talking to me about something. She will be like, if it's a snappy ‘What?’ or ‘What you mean?’ [she will say] ‘Oh, never mind’” (1083M).

3.2.5.1.2 Children's responses to positive parenting.

Children were asked to identify their favorite thing about their parent, and were then asked to describe how they feel and act when their mother engages in this positive parenting practice. The most common emotional reactions to the perceived parenting strength were happy, playful, appreciative, protected, safe, and special. For example, one adolescent said that her favorite thing about her mother's parenting is that her mother takes care of her siblings and her. She shared that when her mother takes care of her, she feels "more protected and stuff, and I feel safe, like no one is gonna hurt me" (2044C). She described that she acts more playful in response to this aspect of her mother's parenting. Another child identified her mother's sense of humor and physical affection as a parenting strength, and when asked how she feels in response, she said, "I feel special; I feel like a little kid. I guess I feel safe when she says that too it just makes me like see that there is someone that has my back" (1023C). The most common behavioral responses to positive parenting were listening, agreeing, being kind, respectful, behaving well, and showing affection.

In a few cases, mothers' and children's perceptions of parenting strengths and children's responses were discrepant from one another. For example, in one family, a 15-year-old teen expressed that his favorite thing about his mother is her sense of humor and when she laughs at his jokes. He said that he feels happy and fun in these moments, and that he responds by laughing with her. In contrast, his mother identified her own parenting strength as protecting her son and supporting his education. She perceived that when she engages in this parenting behavior, he responds by becoming angry: "He gets mad and he makes a face. And I tell him, 'It's for your well-being what I'm doing'" (1049M; translated from Spanish).

3.2.5.1.3 Children's responses to negative parenting.

In addition to identifying a parenting strength, children were asked to identify an aspect of their mother's parenting that they would like to change. Children then described how they feel and act in response to the identified area of growth. Emotional reactions to the parenting area of growth were primarily negative, with most children endorsing feeling angry, sad, irritated, confused and/or frustrated. Some children also stated that though they may feel angry or sad about that particular parenting practice, they often understand their mothers' motivations. Behavioral responses most commonly included keeping a distance from mother, shutting down, and spending time alone. One grandmother expressed that an area of growth in her parenting is to spend more time with her grandson. She stated that when she spends less time with him, "He isolates; he stays in his room. He stays in his room, you know, and he gets upset" (1082M). From the child's perspective, the identified area of growth is for his grandmother to smoke less. He noted that he feels upset and concerned about her health, and he tries to "stay away from her" when she is smoking.

3.2.5.1.4 Impact of mother's health on child.

In addition to children's responses to mothers' parenting practices, several families raised the issue of mothers' physical or emotional health affecting the child. One mother became emotional when describing how her HIV-related physical illness has impeded her involvement with her son.

Interviewer: How do you think [the physical illness] affects your parenting or your relationship with [Child]?

1042M: [crying] It affects it a lot ... 'Cause for a tiny bit, I'll be sick or, you know, I'll be in bed or something and I feel like I should be with him, you know, up and feeling good. That part bothers me a lot. (1042M)

Similarly, a grandmother shared that her parenting quality is affected by her physical health related to HIV:

If I'm healthy we do more. We go out, we do things. If I'm not healthy, I can't move, I don't move. I mean it's like I'm just bound to the bed. Irritable, I don't want to be bothered with no body. As long as I'm up and I'm active, we good. We laughing, we joking. And I spend more one on one time with her than I do with all of them. (2083M)

HIV medications were also reported by one mother to be related to her mood, energy, and parenting skills:

Interviewer: How would you describe yourself as a parent?

2039M: Um, I would say that I could do a little bit better because like I say—with this, um, I have different mood swings, so it's like if I'm sick or I'm angry and the kids are here yeah, I tend to shut down on them. Um, and I hate that, I really can say that I hate. It's not—not intentionally, but I promise when I take that medicine it just makes me feel some type of way. So, I would say other than that my parenting skills would be good, average.

Another family described how the mother's physical health—specifically related to her previous obesity—affected her interactions with her children. The mother described how she used to be minimally involved in playing with her children because of her physical health, but that their relationship changed after she made significant lifestyle changes:

In that matter I can say that I improved, because the new lifestyle I started of going to the gym and everything, that, that has helped me. And my kids are really happy because now everywhere we go, I'm like a child. I climb on everything, I play with them, I run, and we run and everything. That's what I have improved on. (1025M; translated from Spanish)

Her son also shared that his mother's physical and emotional health has had an impact on their relationship, noting that she was “angry” before but that after her health improved, she became “more active with us; she plays with us more” (1025C).

Mothers' emotional health also seemed to play a role in their children's functioning. One mother described working to mitigate the impact of her own stress on her children:

It was a worry; it was a burden that she didn't know [about my HIV status]. That she didn't know. But I think that it didn't really change much, because she took it well. And

so I always tried to be good, I always tried, I try to be good for them because I don't want to transmit them my sadness, transmit them my—my stress, so instead I'm like no. I say, "Even though I don't want to see it, my children also have their own little problems, like at school, they have to think about school and not in my problems." So I try for them not to get stressed with my problems.

Similarly, another mother expressed the perception that as her depression improved, her ability to be a responsive parent also improved:

I don't think [his emotional change] has to do with him; I think that has a lot to do with me, and me working on my depression. And me working on my depression helped me better respond to him and be much more nurturing towards him, so that he could feel better with whatever is going on. (2019M)

3.2.5.2 Children's behavior affecting parenting.

In addition to describing children's responses to positive and negative aspects of parenting, families were also asked about the reverse effect: how children's characteristics shape mothers' parenting. Mothers generated several behaviors and traits of children that make it make either easier or more difficult to parent effectively. In general, mothers believed that it was easier to engage in positive parenting behaviors when children were more compliant, flexible, optimistic, and performing well in school. On the other hand, certain child behaviors posed challenges for parents, such as not listening, not being responsive to feedback, and displaying anger or attitude. One mother summarized the reciprocal nature of child and parent behaviors by saying, "When she's positive, I'm positive. When she's negative, I'm rude. Very rude. So it's like, 'You get angry? Well I can get angrier.' So there is no either or. But if you comin' to me correct, I comin' to you correct to" (2083M).

One mother described aspects of her daughter's behavior that either improve or impede the quality of her own parenting. First, she discussed interactions in which she has difficulty providing the type of support that her child needs when she is less receptive to advice or feedback.

Sometimes, like, when you see your kid is struggling with something, and you're going through your toolbox and throwing everything you got at it, and it just doesn't seem like it's working fast enough, it does make you—hence the question, “What am I maybe doing wrong? Am I missing something? Am I not seeing something?” Me being who I am, I start asking her, “Am I missing something? Do you need something that I'm not giving you?” Which makes her have to be a part of her own rescue. It's frustrating. That would be—it makes parenting frustrating sometimes ... There's times where I go from nice mom to just “grr.” Oh yeah, that's the human me, “I got nothing. So what, we're gonna just end it all? We just don't care anymore? What?” “No wait! That's not what I was saying.” “Oh okay, well I don't know what else to think.” (1067M)

She later described other situations in which her child's responsiveness and flexibility enhances her own parenting.

She just—she kinda follows through with everything, you know, she makes it easy to navigate, instead of you know, putting up walls or being you know stand-offish or you know, “I don't wanna” or anything, she just kinda goes with the flow of things. And it makes it easy. You know, “Simone, you wanna do your stuff over there, okay.” She actually does go and clean up behind herself. Makes it easy. (1067M)

She went on to share that though there are easier and more difficult times, she feels that the frustrating moments are far more common. Another mother shared that her child's optimistic demeanor makes it easier for her to engage in positive parenting:

I notice that she's more positive and that's something I think me as a mother, I should learn from her. When it comes to the problems, she's like “Oh, it has to work out.” And it's like, ugh, I focus too much on the problem and I stress out, and she's like “Really? You're stressing out over that? That's why you're mad? Those things are—you get mad for nothing, when there's a solution for everything.” ... She makes me feel much better ... And in return, I'm like “It's not that bad.” And her point of view is important to me. (1025M; translated from Spanish).

In one family, the mother noted that she feels more confident about her own parenting when she notices that her son is performing well academically and behaving well at school.

So his grades too at school. When I see that, I think that yes—and in seeing that, I feel that—I feel proud, thanks to God, since he was young that others have said I have a good son. And well, wow! I feel good with myself! Because I say, “Ah! I have done a good job!” So they don't tell me directly that I am doing a good job, but with people saying that Chris is a good boy, ah, I believe I am doing a good job because my boy is likable with others. People see that he is different from other kids and all of that. And so I say, “I am doing a good job.” (1053M; translated from Spanish).

A mother described her response when her son does not listen or follow directions. She offered an example of asking the child repeatedly to talk to a teacher about his grade, but the child did not comply with the instruction. She stated that she then felt frustrated and, consequently, her parenting shifted: “I withdraw from him. I just tell him, I don’t tell him get out my face, but I tell him leave me alone for a minute cause I’m mad” (2019M).

Table 3.1 Summary of quantitative findings

| | Latent Change Score Models (LCS) | Cross Lagged Panel Models (CLPA) |
|--|---|---|
| HIV Disclosure and Child Adjustment | <ul style="list-style-type: none"> ▪ No significant effects | <ul style="list-style-type: none"> ▪ No significant effects |
| HIV Disclosure and Parenting | <ul style="list-style-type: none"> ▪ Disclosure predicted greater improvements in communication and relationship quality (child report) ▪ No effects with mother-reported parenting | <ul style="list-style-type: none"> ▪ Disclosure predicted marginally lower levels of relationship quality (mother report) |
| HIV Disclosure and Parenting Stress | <ul style="list-style-type: none"> ▪ Disclosure predicted greater reductions / slower increases in parenting stress | <ul style="list-style-type: none"> ▪ No significant effects |
| Child Adjustment and Parenting | <ul style="list-style-type: none"> ▪ Child depression marginally hindered improvement in communication ▪ No effects with aggression or anxiety | <ul style="list-style-type: none"> ▪ Child depression and communication were reciprocally inversely related (child report) ▪ Relationship quality predicted less child depression over time (child report) |
| Child Adjustment and Parenting Stress | <ul style="list-style-type: none"> ▪ No significant effects | <ul style="list-style-type: none"> ▪ Parenting stress (DI) and child depression were reciprocally positively related ▪ Parenting stress (DC) and child aggression were reciprocally positively related ▪ Child aggression predicted marginally higher parenting stress (PD) ▪ Child anxiety predicted higher parenting stress (PD & DI) ▪ Parenting stress (DC) and child anxiety were reciprocally positively related |
| Parenting and Parenting Stress | <ul style="list-style-type: none"> ▪ Change in parenting stress (PD) predicted negative change in parental involvement | <ul style="list-style-type: none"> ▪ Better relationship quality (mother report) predicted less subsequent parenting stress (PD & DI) ▪ Parenting stress (DC) and relationship quality (mother report) were reciprocally inversely related ▪ Parenting stress (DI) predicted worse relationship quality (child report) |

Table 3.2 Model fit indices for longitudinal measurement invariance testing

| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2$ Difference Test | | |
|----------|------------|------|-------|----------|------|------|--------------------------------|-----|------|
| | | | | | | | $\Delta\chi^2_{M2-M1}$ | df | p |
| CDI | Configural | 0.92 | 0.01 | 5646.19 | 5502 | 0.09 | -- | -- | -- |
| | Metric | 0.93 | 0.01 | 5711.08 | 5580 | 0.11 | 82.96 | 78 | 0.33 |
| | Scalar | 0.93 | 0.01 | 5790.42 | 5658 | 0.11 | 91.11 | 78 | 0.15 |
| CBCL-Agg | Configural | 0.97 | 0.02 | 2247.29 | 2102 | 0.01 | -- | -- | -- |
| | Metric | 0.97 | 0.02 | 2287.55 | 2150 | 0.02 | 54.26 | 48 | 0.25 |
| | Scalar | 0.97 | 0.02 | 2337.09 | 2198 | 0.02 | 56.91 | 48 | 0.18 |
| CBCL-Anx | Configural | 0.99 | 0.01 | 696.64 | 674 | 0.27 | -- | -- | -- |
| | Metric | 1.00 | 0.01 | 713.79 | 701 | 0.36 | 23.19 | 27 | 0.67 |
| | Scalar | 1.00 | 0.01 | 739.56 | 728 | 0.37 | 22.20 | 27 | 0.73 |
| PCC | Configural | 0.94 | 0.04 | 835.34 | 674 | 0.00 | -- | -- | -- |
| | Metric | 0.95 | 0.03 | 838.37 | 701 | 0.00 | 30.40 | 27 | 0.30 |
| | Scalar | 0.94 | 0.03 | 965.26 | 818 | 0.00 | 144.10 | 117 | 0.05 |
| APQ-Pos | Configural | 0.99 | 0.03 | 234.13 | 210 | 0.12 | -- | -- | -- |
| | Metric | 0.99 | 0.02 | 245.26 | 225 | 0.17 | 15.97 | 15 | 0.38 |
| | Scalar | 0.99 | 0.02 | 276.09 | 258 | 0.21 | 28.21 | 33 | 0.70 |
| APQ-Inv | Configural | 0.97 | 0.03 | 787.08 | 674 | 0.00 | -- | -- | -- |
| | Metric | 0.97 | 0.03 | 827.10 | 701 | 0.00 | 42.93 | 27 | 0.03 |
| | Scalar | 0.87 | 0.06 | 1255.09 | 787 | 0.00 | 1006.38 | 86 | 0.00 |
| CBQ-C | Configural | 0.96 | 0.01 | 3051.50 | 2954 | 0.10 | -- | -- | -- |
| | Metric | 0.96 | 0.01 | 3103.30 | 3011 | 0.23 | 64.52 | 57 | 0.23 |
| | Scalar | 0.96 | 0.01 | 3163.46 | 3068 | 0.11 | 84.74 | 57 | 0.01 |
| CBQ-M | Configural | 0.96 | 0.02 | 3236.93 | 3074 | 0.02 | -- | -- | -- |
| | Metric | 0.97 | 0.02 | 3272.37 | 3131 | 0.04 | 59.20 | 57 | 0.40 |
| | Scalar | 0.97 | 0.02 | 3330.07 | 3188 | 0.04 | 62.18 | 57 | 0.30 |
| PSI-PD | Configural | 0.95 | 0.03 | 924.08 | 822 | 0.01 | -- | -- | -- |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|--------|------------|------|-------|----------|------|------|--------------------------------|----|------|
| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2_{M2-M1}$ | df | p |
| PSI-DI | Metric | 0.96 | 0.02 | 936.73 | 852 | 0.02 | 29.61 | 30 | 0.49 |
| | Scalar | 0.95 | 0.02 | 971.57 | 882 | 0.02 | 50.97 | 30 | 0.01 |
| | Configural | 0.96 | 0.02 | 729.73 | 674 | 0.07 | -- | -- | -- |
| | Metric | 0.97 | 0.02 | 746.44 | 701 | 0.11 | 22.98 | 27 | 0.69 |
| | Scalar | 0.97 | 0.02 | 773.18 | 728 | 0.12 | 25.07 | 27 | 0.57 |
| PSI-DC | Configural | 0.95 | 0.03 | 1243.51 | 1074 | 0.00 | -- | -- | -- |
| | Metric | 0.95 | 0.03 | 1267.93 | 1107 | 0.00 | 44.14 | 33 | 0.09 |
| | Scalar | 0.95 | 0.03 | 1303.96 | 1140 | 0.00 | 47.63 | 33 | 0.05 |

Note. CDI = Children's Depression Inventory. CBCL-Agg = Child Behavior Checklist - Aggression Subscale. CBCL-Anx = Child Behavior Checklist - Anxiety Subscale. PCC = Parent-Child Communication Scale. APQ-Pos = Alabama Parenting Questionnaire - Positive Parenting Subscale. APQ-Inv = Alabama Parenting Questionnaire - Involvement Subscale. CBQ-C = Conflict Behavior Questionnaire - Child Report. CBQ-M = Conflict Behavior Questionnaire - Mother Report. PSI-PD = Parenting Stress Index - Parental Distress Subscale. PSI-DI = Parenting Stress Index - Dysfunctional Interaction. PSI-DC = Parenting Stress Index - Difficult Child.

Table 3.3 Descriptive statistics for all study variables

| | <u>Baseline</u> | | | <u>3-Month</u> | | | <u>9-Month</u> | | | <u>15-Month</u> | | |
|----------|-----------------|-------|-------|----------------|-------|-------|----------------|-------|-------|-----------------|-------|-------|
| | Mean (SD) | Min | Max | Mean (SD) | Min | Max | Mean (SD) | Min | Max | Mean (SD) | Min | Max |
| CDI | 35.93 (6.95) | 27.00 | 58.00 | 34.45 (7.09) | 27.00 | 61.00 | 33.11 (5.66) | 27.00 | 57.00 | 33.11 (6.29) | 27.00 | 70.00 |
| CBCL-Agg | 1.48 (0.35) | 1.00 | 2.71 | 1.44 (0.36) | 1.00 | 2.71 | 1.45 (0.36) | 1.00 | 2.71 | 1.44 (0.35) | 1.00 | 2.76 |
| CBCL-Anx | 1.44 (0.37) | 1.00 | 2.80 | 1.38 (0.35) | 1.00 | 2.90 | 1.38 (0.37) | 1.00 | 2.60 | 1.36 (0.35) | 1.00 | 3.00 |
| PCC | 3.66 (0.73) | 1.50 | 5.00 | 3.81 (0.72) | 1.70 | 5.00 | 3.82 (0.69) | 2.00 | 5.00 | 3.94 (0.69) | 1.50 | 5.00 |
| APQ-Pos | 4.46 (0.51) | 3.00 | 5.00 | 4.43 (0.54) | 2.83 | 5.00 | 4.39 (0.54) | 3.00 | 5.00 | 4.41 (0.52) | 3.00 | 5.00 |
| APQ-Inv | 3.88 (0.65) | 1.80 | 5.00 | 3.86 (0.61) | 1.80 | 5.00 | 3.87 (0.60) | 2.30 | 5.00 | 3.83 (0.65) | 1.70 | 5.00 |
| CBQ-C | 1.83 (0.19) | 1.05 | 2.00 | 1.84 (0.20) | 1.05 | 2.00 | 1.86 (0.17) | 1.30 | 2.00 | 1.88 (0.16) | 1.05 | 2.00 |
| CBQ-P | 1.75 (0.23) | 1.05 | 2.00 | 1.78 (0.22) | 1.10 | 2.00 | 1.78 (0.22) | 1.05 | 2.00 | 1.79 (0.22) | 1.05 | 2.00 |
| PSI-PD | 2.48 (0.77) | 1.00 | 4.55 | 2.25 (0.72) | 1.00 | 4.18 | 2.18 (0.75) | 1.00 | 4.30 | 2.21 (0.84) | 1.00 | 4.82 |
| PSI-DI | 2.02 (0.73) | 1.00 | 4.60 | 1.91 (0.64) | 1.00 | 3.40 | 1.90 (0.68) | 1.00 | 4.00 | 1.83 (0.70) | 1.00 | 4.20 |
| PSI-DC | 2.29 (0.79) | 1.00 | 4.92 | 2.25 (0.79) | 1.00 | 4.17 | 2.15 (0.77) | 1.00 | 4.50 | 2.20 (0.76) | 1.00 | 4.08 |

Note. CDI = Children's Depression Inventory. CBCL-Agg = Child Behavior Checklist - Aggression Subscale. CBCL-Anx = Child Behavior Checklist - Anxiety Subscale. PCC = Parent-Child Communication Scale. APQ-Pos = Alabama Parenting Questionnaire - Positive Parenting Subscale. APQ-Inv = Alabama Parenting Questionnaire - Involvement Subscale. CBQ-C = Conflict Behavior Questionnaire - Child Report. CBQ-P = Conflict Behavior Questionnaire - Parent Report. PSI-PD = Parenting Stress Index - Parental Distress Subscale. PSI-DI = Parenting Stress Index - Dysfunctional Interaction. PSI-DC = Parenting Stress Index - Difficult Child.

Table 3.4 Bivariate correlations among all study variables

| | 1. Group assignment | 2. Site | 3. Hispanic/ Latino Race | 4. Child Age | 5. Child Gender | 6. DISC BL | 7. DISC 3M | 8. DISC 9M | 9. DISC 15M |
|--------------------------|---------------------|---------|--------------------------|--------------|-----------------|------------|------------|------------|-------------|
| 1. Group assignment | 1 | | | | | | | | |
| 2. Site | 0.002 | 1 | | | | | | | |
| 3. Hispanic/ Latino Race | -0.037 | .739*** | 1 | | | | | | |
| 4. Child Age | 0.051 | 0.037 | 0.028 | 1 | | | | | |
| 5. Child Gender | 0.022 | -0.102 | -0.101 | -0.003 | 1 | | | | |
| 6. DISC BL | 0.118 | -.193* | -0.112 | 0.033 | 0.083 | 1 | | | |
| 7. DISC 3M | .234** | -0.107 | 0.032 | 0.081 | 0.118 | .543*** | 1 | | |
| 8. DISC 9M | .279** | -0.118 | -0.002 | 0.158 | 0.056 | .462*** | .876*** | 1 | |
| 9. DISC 15M | .325*** | -.235* | -0.084 | .190* | 0.053 | .448*** | .757*** | .889*** | 1 |
| 10. CDI BL | -0.058 | -0.051 | -0.041 | -.208** | -0.023 | -0.012 | -0.070 | -0.074 | -0.075 |
| 11. CDI 3M | -0.144 | 0.019 | 0.027 | -0.093 | -0.011 | -0.070 | -0.011 | 0.040 | -0.011 |
| 12. CDI 9M | -0.141 | -0.105 | -0.103 | -0.127 | 0.026 | 0.008 | 0.029 | 0.120 | 0.009 |
| 13. CDI 15M | -0.146 | -0.091 | -0.081 | -0.036 | 0.126 | 0.084 | -0.007 | 0.029 | 0.045 |
| 14. CBCL-Agg BL | 0.049 | 0.103 | 0.068 | -.200** | -0.039 | 0.119 | 0.090 | 0.116 | 0.123 |
| 15. CBCL-Agg 3M | 0.077 | 0.047 | 0.080 | -.167* | 0.060 | 0.023 | 0.072 | 0.139 | .189* |
| 16. CBCL-Agg 9M | 0.152 | 0.142 | 0.092 | -0.078 | -0.142 | 0.072 | 0.115 | .209* | .225* |
| 17. CBCL-Agg 15M | 0.056 | .256** | .190* | -0.087 | -0.181 | 0.099 | 0.087 | 0.182 | .189* |
| 18. CBCL-Anx BL | -0.098 | -0.074 | -0.110 | -0.120 | 0.077 | 0.083 | 0.053 | 0.064 | 0.076 |
| 19. CBCL-Anx 3M | 0.032 | -0.080 | -0.102 | -0.073 | 0.053 | 0.023 | 0.084 | 0.174 | .224* |
| 20. CBCL-Anx 9M | -0.045 | -0.097 | -0.106 | -0.167 | -0.026 | 0.056 | 0.097 | 0.146 | 0.149 |
| 21. CBCL-Anx 15M | 0.038 | 0.002 | -0.078 | -0.149 | -0.117 | 0.061 | 0.109 | 0.165 | 0.151 |
| 22. PCC BL | 0.099 | .178* | 0.148 | 0.100 | -0.054 | -0.078 | 0.001 | 0.033 | 0.060 |

| | 1. Group assignment | 2. Site | 3. Hispanic/ Latino Race | 4. Child Age | 5. Child Gender | 6. DISC BL | 7. DISC 3M | 8. DISC 9M | 9. DISC 15M |
|-----------------|------------------------|---------|-----------------------------|-----------------|--------------------|---------------|---------------|---------------|----------------|
| 23. PCC 3M | 0.104 | .195* | .193* | -0.043 | 0.030 | -0.052 | 0.099 | 0.101 | 0.045 |
| 24. PCC 9M | 0.098 | 0.133 | 0.100 | 0.017 | -0.064 | -0.018 | 0.006 | 0.002 | 0.038 |
| 25. PCC 15M | 0.089 | 0.131 | 0.112 | -0.042 | -0.136 | -0.055 | -0.040 | 0.030 | -0.013 |
| 26. APQ-Pos BL | -.236** | 0.131 | 0.119 | -0.108 | 0.094 | -0.001 | -0.082 | -0.071 | -0.133 |
| 27. APQ-Pos 3M | -0.154 | .197* | 0.144 | -0.076 | 0.024 | 0.083 | -0.019 | -0.035 | -0.048 |
| 28. APQ-Pos 9M | -0.080 | .208* | .179* | -0.068 | 0.019 | 0.059 | 0.045 | 0.098 | 0.113 |
| 29. APQ-Pos 15M | 0.019 | 0.094 | 0.041 | -0.058 | 0.057 | 0.041 | -0.036 | -0.060 | 0.011 |
| 30. APQ-Inv BL | -0.131 | .198** | .183* | -0.095 | 0.099 | -0.026 | -0.028 | 0.016 | 0.003 |
| 31. APQ-Inv 3M | -0.117 | 0.117 | 0.134 | 0.024 | 0.111 | 0.040 | -0.009 | 0.025 | 0.063 |
| 32. APQ-Inv 9M | -0.130 | 0.142 | 0.131 | -0.008 | 0.136 | 0.041 | 0.007 | 0.025 | 0.025 |
| 33. APQ-Inv 15M | -0.023 | -0.022 | -0.085 | -0.016 | .195* | -0.004 | -0.088 | -0.036 | -0.002 |
| 34. CBQ-C BL | 0.120 | 0.080 | 0.068 | 0.136 | -0.045 | -0.049 | 0.056 | 0.110 | 0.060 |
| 35. CBQ-C 3M | 0.128 | 0.082 | 0.094 | -0.048 | -0.037 | 0.050 | 0.158 | 0.164 | 0.165 |
| 36. CBQ-C 9M | 0.087 | 0.059 | 0.092 | 0.117 | -0.020 | -0.058 | 0.046 | 0.010 | 0.010 |
| 37. CBQ-C 15M | 0.118 | 0.055 | 0.118 | -0.058 | -0.099 | -0.134 | -0.016 | 0.000 | -0.034 |
| 38. CBQ-M BL | -0.109 | 0.028 | -0.011 | -0.012 | 0.034 | -0.141 | -.183* | -.242** | -.229* |
| 39. CBQ-M 3M | -0.087 | 0.017 | 0.020 | 0.109 | 0.096 | -0.108 | -0.080 | -0.116 | -0.121 |
| 40. CBQ-M 9M | -.187* | -0.108 | -0.127 | 0.114 | 0.147 | -0.096 | -.209* | -.274** | -.246* |
| 41. CBQ-M 15M | -0.114 | -0.154 | -0.157 | 0.033 | 0.079 | -0.071 | -0.181 | -.219* | -.212* |
| 42. PSI-PD BL | 0.062 | 0.050 | 0.042 | 0.012 | -0.055 | 0.124 | 0.147 | 0.157 | .213* |
| 43. PSI-PD 3M | 0.110 | 0.125 | 0.035 | -0.036 | -0.012 | 0.038 | -0.029 | 0.034 | 0.051 |
| 44. PSI-PD 9M | 0.064 | .187* | 0.134 | -0.092 | -.191* | 0.086 | 0.107 | 0.048 | 0.026 |
| 45. PSI-PD 15M | -0.010 | .239* | .199* | 0.030 | -0.083 | -0.012 | 0.000 | 0.044 | 0.021 |
| 46. PSI-DI BL | 0.039 | -0.001 | 0.005 | 0.077 | 0.061 | 0.059 | .238** | .191* | 0.137 |

| | 1. Group assignment | 2. Site | 3. Hispanic/ Latino Race | 4. Child Age | 5. Child Gender | 6. DISC BL | 7. DISC 3M | 8. DISC 9M | 9. DISC 15M |
|----------------|------------------------|---------|-----------------------------|-----------------|--------------------|---------------|---------------|---------------|----------------|
| 47. PSI-DI 3M | 0.022 | 0.057 | -0.003 | 0.019 | 0.026 | -0.111 | -0.029 | 0.023 | 0.003 |
| 48. PSI-DI 9M | 0.044 | 0.139 | 0.082 | 0.021 | -0.128 | -0.009 | 0.031 | 0.104 | 0.053 |
| 49. PSI-DI 15M | -0.054 | 0.129 | 0.070 | -0.014 | 0.038 | 0.019 | 0.161 | 0.140 | 0.070 |
| 50. PSI-DC BL | 0.053 | 0.032 | 0.078 | -0.099 | 0.019 | 0.090 | .190* | .212* | 0.182 |
| 51. PSI-DC 3M | 0.076 | 0.114 | 0.097 | -0.135 | -0.009 | -0.002 | 0.028 | 0.078 | 0.118 |
| 52. PSI-DC 9M | 0.066 | 0.156 | 0.142 | -0.056 | -0.145 | 0.065 | 0.034 | 0.094 | 0.084 |
| 53. PSI-DC 15M | -0.013 | .277** | .234* | 0.018 | -0.113 | 0.090 | 0.127 | 0.188 | 0.110 |

| | 10. CDI BL | 11. CDI 3M | 12. CDI 9M | 13. CDI 15M | 14. CBCL- Agg BL | 15. CBCL- Agg 3M | 16. CBCL- Agg 9M | 17. CBCL- Agg 15M | 18. CBCL- Anx BL | 19. CBCL- Anx 3M | 20. CBCL- Anx 9M | 21. CBCL- Anx 15M |
|----------------------|------------------|------------------|------------------|-------------------|---------------------------|---------------------------|---------------------------|----------------------------|------------------------|------------------------|------------------------|----------------------------|
| 10. CDI BL | 1 | | | | | | | | | | | |
| 11. CDI 3M | .571*** | 1 | | | | | | | | | | |
| 12. CDI 9M | .531*** | .663*** | 1 | | | | | | | | | |
| 13. CDI 15M | .485*** | .536*** | .543*** | 1 | | | | | | | | |
| 14. CBCL- Agg BL | .237** | 0.126 | 0.113 | 0.108 | 1 | | | | | | | |
| 15. CBCL- Agg 3M | .226** | 0.080 | 0.108 | 0.132 | .728*** | 1 | | | | | | |
| 16. CBCL- Agg 9M | 0.097 | 0.087 | 0.108 | 0.051 | .667*** | .767*** | 1 | | | | | |
| 17. CBCL- Agg 15M | 0.138 | 0.128 | 0.079 | 0.041 | .612*** | .706*** | .803*** | 1 | | | | |
| 18. CBCL- Anx BL | .305*** | .204* | .225* | .228* | .524*** | .411*** | .290** | .297** | 1 | | | |

| | 10. CDI BL | 11. CDI 3M | 12. CDI 9M | 13. CDI 15M | 14. CBCL- Agg BL | 15. CBCL- Agg 3M | 16. CBCL- Agg 9M | 17. CBCL- Agg 15M | 18. CBCL- Anx BL | 19. CBCL- Anx 3M | 20. CBCL- Anx 9M | 21. CBCL- Anx 15M |
|----------------------|------------------|------------------|------------------|-------------------|---------------------------|---------------------------|---------------------------|----------------------------|------------------------|------------------------|------------------------|----------------------------|
| 19. CBCL- Anx 3M | .197* | 0.079 | 0.098 | 0.133 | .470*** | .666*** | .558*** | .496*** | .670*** | 1 | | |
| 20. CBCL- Anx 9M | 0.138 | 0.072 | 0.157 | 0.118 | .419*** | .540*** | .571*** | .467*** | .627*** | .821*** | 1 | |
| 21. CBCL- Anx 15M | 0.159 | 0.048 | 0.164 | 0.064 | .440*** | .480*** | .521*** | .582*** | .666*** | .740*** | .761*** | 1 |
| 22. PCC BL | -.456*** | -.347*** | -.305** | -.440*** | -0.096 | -0.069 | 0.007 | 0.008 | -.169* | -0.148 | -0.173 | -0.089 |
| 23. PCC 3M | -.303*** | -.374*** | -.283** | -.394*** | -0.024 | -0.038 | -0.040 | -0.113 | -0.106 | -0.107 | -0.166 | -0.065 |
| 24. PCC 9M | -.271** | -.254** | -.308** | -.340** | 0.002 | -0.050 | -0.054 | -0.062 | -0.042 | -0.112 | -0.096 | -0.026 |
| 25. PCC 15M | -.359*** | -.379*** | -.339** | -.601*** | -0.015 | -0.040 | 0.029 | -0.050 | -0.154 | -0.140 | -0.114 | 0.003 |
| 26. APQ-Pos BL | -.180* | -0.155 | -0.028 | -0.150 | -0.105 | -0.150 | -0.108 | -0.089 | -0.070 | -0.016 | -0.032 | -0.078 |
| 27. APQ-Pos 3M | -0.081 | -0.147 | -0.083 | -0.099 | 0.043 | -0.042 | 0.008 | -0.007 | -0.027 | 0.026 | 0.031 | -0.019 |
| 28. APQ-Pos 9M | -0.045 | -0.158 | -0.126 | -0.190 | -0.045 | -0.081 | -0.103 | 0.060 | -0.147 | -0.051 | -0.120 | -0.015 |
| 29. APQ-Pos 15M | -0.069 | -.211* | 0.009 | -0.097 | 0.094 | -0.069 | 0.085 | 0.026 | -0.129 | -0.110 | -0.108 | -0.044 |
| 30. APQ-Inv BL | -0.143 | -0.165 | -0.099 | -0.066 | -0.080 | -0.091 | -0.080 | 0.041 | -0.085 | -0.004 | -0.051 | -0.044 |
| 31. APQ-Inv 3M | -0.058 | -0.138 | -0.074 | 0.022 | -0.041 | -0.145 | -0.090 | -0.057 | -0.109 | -0.068 | -0.066 | -0.121 |
| 32. APQ-Inv 9M | -0.107 | -0.142 | -0.126 | 0.028 | -0.088 | -0.100 | -.182* | -0.018 | -0.125 | -0.045 | -0.144 | -0.125 |
| 33. APQ-Inv 15M | -0.094 | -0.129 | 0.038 | 0.049 | -0.009 | -0.077 | 0.022 | -0.042 | -0.120 | -0.081 | -0.083 | -0.129 |
| 34. CBQ-C BL | -.540*** | -.450*** | -.416*** | -.488*** | -.252** | -0.127 | -0.085 | -0.069 | -.269*** | -0.114 | -0.143 | -0.058 |

| | 10. CDI BL | 11. CDI 3M | 12. CDI 9M | 13. CDI 15M | 14. CBCL- Agg BL | 15. CBCL- Agg 3M | 16. CBCL- Agg 9M | 17. CBCL- Agg 15M | 18. CBCL- Anx BL | 19. CBCL- Anx 3M | 20. CBCL- Anx 9M | 21. CBCL- Anx 15M |
|-------------------|------------------|------------------|------------------|-------------------|---------------------------|---------------------------|---------------------------|----------------------------|------------------------|------------------------|------------------------|----------------------------|
| 35. CBQ-C 3M | -.371*** | -.562*** | -.498*** | -.528*** | -0.095 | -0.098 | -0.003 | 0.013 | -.168* | -0.087 | -0.041 | -0.046 |
| 36. CBQ-C 9M | -.351*** | -.473*** | -.561*** | -.548*** | -0.090 | -0.131 | -0.142 | -0.127 | -.231* | -0.183 | -.233** | -.203* |
| 37. CBQ-C 15M | -.307** | -.282** | -.244* | -.705*** | -0.145 | -0.185 | -0.100 | -0.122 | -0.165 | -.202* | -0.145 | -0.094 |
| 38. CBQ-M BL | -.166* | -.180* | -0.123 | 0.029 | -.656*** | -.449*** | -.500*** | -.463*** | -.374*** | -.281** | -.296** | -.255** |
| 39. CBQ-M 3M | -.204* | -.253** | -0.164 | -0.139 | -.470*** | -.611*** | -.505*** | -.463*** | -.321*** | -.472*** | -.387*** | -.289** |
| 40. CBQ-M 9M | -0.042 | -.204* | -0.140 | 0.025 | -.398** | -.459** | -.590** | -.527** | -.213* | -.355** | -.380** | -.295** |
| 41. CBQ-M 15M | 0.020 | -0.059 | -0.056 | 0.060 | -.201* | -.336** | -.317** | -.513** | -0.132 | -.293** | -.244* | -.281** |
| 42. PSI-PD BL | 0.084 | .175* | 0.148 | 0.149 | .462** | .288** | .309*** | .251** | .398** | .262** | .257** | .339*** |
| 43. PSI-PD 3M | 0.061 | .193* | 0.120 | 0.161 | .395** | .423** | .403** | .300** | .387** | .402** | .351** | .345*** |
| 44. PSI-PD 9M | 0.046 | 0.166 | 0.122 | 0.175 | .412** | .345*** | .382** | .319** | .331*** | .348*** | .393** | .359*** |
| 45. PSI-PD 15M | 0.061 | 0.081 | 0.067 | 0.036 | .248** | .272** | .263** | .313** | .359*** | .334** | .296** | .343** |
| 46. PSI-DI BL | .222** | .291** | .230* | 0.164 | .398** | .336** | .300** | .248** | .347** | .291** | .255** | .286** |
| 47. PSI-DI 3M | .207* | .354** | .244* | .313** | .303*** | .382** | .292** | .196* | .323*** | .386** | .306** | .222* |
| 48. PSI-DI 9M | .231* | .466*** | .357*** | .405*** | .272** | .294** | .348*** | .276** | .288** | .350*** | .349*** | .309** |
| 49. PSI-DI | .213* | .237* | .273** | 0.159 | .223* | .283** | .236* | .315** | .390*** | .373*** | .359*** | .352*** |

| | 10. CDI BL | 11. CDI 3M | 12. CDI 9M | 13. CDI 15M | 14. CBCL- Agg BL | 15. CBCL- Agg 3M | 16. CBCL- Agg 9M | 17. CBCL- Agg 15M | 18. CBCL- Anx BL | 19. CBCL- Anx 3M | 20. CBCL- Anx 9M | 21. CBCL- Anx 15M |
|-------------------|------------------|------------------|------------------|-------------------|---------------------------|---------------------------|---------------------------|----------------------------|------------------------|------------------------|------------------------|----------------------------|
| 15M | | | | | | | | | | | | |
| 50. PSI-DC BL | .229** | .237** | 0.175 | 0.116 | .647*** | .553*** | .553*** | .455*** | .464*** | .444*** | .454*** | .446*** |
| 51. PSI-DC 3M | .180* | .199* | 0.134 | 0.073 | .557*** | .678*** | .582*** | .590*** | .439*** | .627*** | .567*** | .514*** |
| 52. PSI-DC 9M | 0.080 | .266** | .217* | 0.142 | .536*** | .607*** | .687*** | .619*** | .424*** | .539*** | .593*** | .543*** |
| 53. PSI-DC 15M | 0.137 | .205* | 0.184 | 0.047 | .393*** | .476*** | .522*** | .612*** | .392*** | .486*** | .494*** | .490*** |

| | 22. PCC BL | 23. PCC 3M | 24. PCC 9M | 25. PCC 15M | 26. APQ- Pos BL | 27. APQ- Pos 3M | 28. APQ- Pos 9M | 29. APQ- Pos 15M |
|-----------------|---------------|---------------|---------------|----------------|--------------------|--------------------|--------------------|---------------------|
| 22. PCC BL | 1 | | | | | | | |
| 23. PCC 3M | .595*** | 1 | | | | | | |
| 24. PCC 9M | .545*** | .668*** | 1 | | | | | |
| 25. PCC 15M | .575*** | .591*** | .589*** | 1 | | | | |
| 26. APQ-Pos BL | .269*** | .215* | 0.025 | 0.080 | 1 | | | |
| 27. APQ-Pos 3M | 0.103 | .212* | 0.080 | -0.038 | .556*** | 1 | | |
| 28. APQ-Pos 9M | .282** | .289** | 0.174 | 0.093 | .545*** | .682*** | 1 | |
| 29. APQ-Pos 15M | 0.114 | 0.164 | 0.040 | 0.054 | .525*** | .781*** | .643*** | 1 |
| 30. APQ-Inv BL | .235** | .239** | 0.093 | 0.066 | .641*** | .448*** | .452*** | .390*** |
| 31. APQ-Inv 3M | 0.159 | .272** | 0.081 | -0.045 | .578*** | .639*** | .607*** | .601*** |
| 32. APQ-Inv 9M | .270** | .317*** | 0.118 | 0.018 | .544*** | .544*** | .674*** | .466*** |
| 33. APQ-Inv 15M | 0.177 | .206* | 0.007 | 0.041 | .484*** | .525*** | .466*** | .589*** |

| | 22. PCC BL | 23. PCC 3M | 24. PCC 9M | 25. PCC 15M | 26. APQ- Pos BL | 27. APQ- Pos 3M | 28. APQ- Pos 9M | 29. APQ- Pos 15M |
|----------------|---------------|---------------|---------------|----------------|--------------------|--------------------|--------------------|---------------------|
| 34. CBQ-C BL | .589*** | .494*** | .405*** | .528*** | 0.141 | 0.109 | .244** | 0.023 |
| 35. CBQ-C 3M | .407*** | .560*** | .343*** | .399*** | .210* | 0.164 | .253** | 0.161 |
| 36. CBQ-C 9M | .418*** | .548*** | .538*** | .488*** | 0.097 | 0.136 | .205* | 0.074 |
| 37. CBQ-C 15M | .468*** | .541*** | .432*** | .590*** | .193* | 0.051 | .205* | 0.087 |
| 38. CBQ-M BL | 0.129 | 0.089 | -0.026 | -0.026 | .194* | 0.056 | 0.114 | -0.033 |
| 39. CBQ-M 3M | 0.142 | 0.100 | 0.030 | 0.085 | 0.161 | 0.080 | 0.097 | 0.117 |
| 40. CBQ-M 9M | 0.026 | 0.082 | 0.107 | 0.041 | 0.080 | 0.060 | 0.130 | 0.015 |
| 41. CBQ-M 15M | 0.005 | 0.078 | 0.069 | 0.115 | 0.035 | 0.073 | 0.063 | 0.098 |
| 42. PSI-PD BL | -0.068 | -0.027 | 0.076 | -0.007 | -.181* | 0.007 | -0.136 | 0.030 |
| 43. PSI-PD 3M | -0.015 | -0.017 | 0.107 | 0.019 | -.219** | -.172* | -.267** | -.251* |
| 44. PSI-PD 9M | -0.121 | -0.160 | -0.077 | -0.098 | -0.106 | -0.099 | -.208* | -0.154 |
| 45. PSI-PD 15M | 0.063 | 0.076 | 0.084 | 0.038 | -0.036 | -0.115 | -0.150 | -0.177 |
| 46. PSI-DI BL | -.202** | -0.119 | 0.008 | -0.072 | -.321** | -0.155 | -.204* | -0.088 |
| 47. PSI-DI 3M | -.218* | -.301*** | -0.145 | -0.170 | -.216* | -.311*** | -.463*** | -.382*** |
| 48. PSI-DI 9M | -.286** | -.275** | -.283** | -.269** | -0.099 | -.195* | -.362*** | -.260** |
| 49. PSI-DI 15M | -0.170 | -0.101 | -0.068 | -0.128 | -0.128 | -.272** | -0.152 | -.295** |
| 50. PSI-DC BL | -0.128 | -0.121 | -0.056 | -0.067 | -.251** | -0.077 | -.233** | -0.082 |
| 51. PSI-DC 3M | -0.077 | -0.142 | -0.031 | -0.107 | -.188* | -0.128 | -.207* | -0.188 |
| 52. PSI-DC 9M | -0.087 | -0.169 | -0.152 | -0.126 | -0.158 | -0.047 | -.286** | -0.104 |
| 53. PSI-DC 15M | -0.089 | -0.131 | -0.055 | -0.104 | -.207* | -.201* | -0.187 | -.225* |

| | 30. APQ- Inv BL | 31. APQ- Inv 3M | 32. APQ- Inv 9M | 33. APQ- Inv 15M | 34. CBQ-C BL | 35. CBQ-C 3M | 36. CBQ-C 9M | 37. CBQ-C 15M |
|-----------------|--------------------|--------------------|--------------------|---------------------|-----------------|-----------------|-----------------|------------------|
| 30. APQ-Inv BL | 1 | | | | | | | |
| 31. APQ-Inv 3M | .718*** | 1 | | | | | | |
| 32. APQ-Inv 9M | .629*** | .823*** | 1 | | | | | |
| 33. APQ-Inv 15M | .647*** | .800*** | .751*** | 1 | | | | |
| 34. CBQ-C BL | 0.114 | 0.089 | 0.172 | 0.074 | 1 | | | |
| 35. CBQ-C 3M | .187* | .179* | 0.158 | 0.136 | .575*** | 1 | | |
| 36. CBQ-C 9M | 0.064 | 0.114 | 0.147 | -0.018 | .643*** | .579*** | 1 | |
| 37. CBQ-C 15M | 0.105 | 0.033 | 0.012 | 0.019 | .525*** | .539*** | .588*** | 1 |
| 38. CBQ-M BL | .260** | 0.125 | 0.148 | 0.090 | .174* | 0.145 | 0.100 | 0.030 |
| 39. CBQ-M 3M | 0.119 | .206* | 0.055 | 0.130 | 0.146 | .289** | .197* | 0.188 |
| 40. CBQ-M 9M | 0.053 | 0.109 | 0.117 | 0.045 | -0.003 | 0.011 | .202* | 0.041 |
| 41. CBQ-M 15M | 0.015 | 0.078 | 0.074 | 0.183 | -0.022 | 0.004 | 0.121 | -0.004 |
| 42. PSI-PD BL | -.306*** | -0.109 | -.189* | -0.136 | -0.101 | -0.160 | -0.134 | -0.117 |
| 43. PSI-PD 3M | -.232** | -.297*** | -.265** | -.236* | 0.054 | -.183* | -0.059 | -0.096 |
| 44. PSI-PD 9M | -.252** | -.314** | -.287** | -.284** | -0.034 | -.195* | -0.176 | -0.178 |
| 45. PSI-PD 15M | -0.146 | -0.163 | -0.120 | -.208* | 0.184 | 0.012 | -0.043 | 0.039 |
| 46. PSI-DI BL | -.428*** | -.273** | -.260** | -0.138 | -0.146 | -.167* | -0.127 | -0.148 |
| 47. PSI-DI 3M | -.319*** | -.404*** | -.385*** | -.381*** | -.194* | -.363*** | -.224* | -.216* |
| 48. PSI-DI 9M | -.247** | -.296** | -.305** | -.285** | -0.151 | -.309** | -.339*** | -.289** |
| 49. PSI-DI 15M | -.226* | -.304** | -.216* | -.329*** | -0.015 | -0.103 | -.205* | -0.085 |
| 50. PSI-DC BL | -.346*** | -.235** | -.270** | -0.152 | -.158* | -0.144 | -.236** | -0.150 |
| 51. PSI-DC 3M | -.173* | -.259** | -.196* | -.285** | -0.148 | -.168* | -0.148 | -0.136 |
| 52. PSI-DC 9M | -.255** | -.258** | -.298** | -.242* | -0.086 | -0.153 | -.263** | -0.129 |
| 53. PSI-DC 15M | -0.184 | -.268** | -.237* | -.312** | -0.039 | -0.139 | -0.163 | -0.057 |

| | 38. CBQ-M BL | 39. CBQ-M 3M | 40. CBQ-M 9M | 41. CBQ-M 15M | 42. PSI-PD BL | 43. PSI-PD 3M | 44. PSI-PD 9M | 45. PSI-PD 15M |
|----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|------------------|-------------------|
| 38. CBQ-M BL | 1 | | | | | | | |
| 39. CBQ-M 3M | .605*** | 1 | | | | | | |
| 40. CBQ-M 9M | .635*** | .725*** | 1 | | | | | |
| 41. CBQ-M 15M | .455*** | .565*** | .661*** | 1 | | | | |
| 42. PSI-PD BL | -.504*** | -.300*** | -.291** | -0.176 | 1 | | | |
| 43. PSI-PD 3M | -.387*** | -.530*** | -.394*** | -.312** | .579*** | 1 | | |
| 44. PSI-PD 9M | -.364*** | -.412*** | -.376*** | -.273** | .610*** | .638*** | 1 | |
| 45. PSI-PD 15M | -.326** | -.305** | -.331** | -.445*** | .545*** | .677*** | .627*** | 1 |
| 46. PSI-DI BL | -.594*** | -.301*** | -.291** | -0.112 | .538** | .360*** | .343*** | .342*** |
| 47. PSI-DI 3M | -.445*** | -.495*** | -.373*** | -.309** | .356*** | .655*** | .497*** | .508*** |
| 48. PSI-DI 9M | -.387*** | -.449*** | -.414*** | -.330** | .430*** | .561*** | .600*** | .547*** |
| 49. PSI-DI 15M | -.383*** | -.351*** | -.368*** | -.484*** | .369*** | .514*** | .485*** | .720*** |
| 50. PSI-DC BL | -.698*** | -.474*** | -.515*** | -.285** | .577*** | .434*** | .462*** | .427*** |
| 51. PSI-DC 3M | -.511*** | -.665*** | -.545*** | -.513*** | .306*** | .559*** | .393*** | .444*** |
| 52. PSI-DC 9M | -.567*** | -.585*** | -.635*** | -.476*** | .436*** | .577*** | .600*** | .530*** |
| 53. PSI-DC 15M | -.474*** | -.521*** | -.554*** | -.677*** | .338*** | .564*** | .504*** | .665*** |

| | 46. PSI-DI BL | 47. PSI-DI 3M | 48. PSI-DI 9M | 49. PSI-DI 15M | 50. PSI-DC BL | 51. PSI-DC 3M | 52. PSI-DC 9M | 53. PSI-DC 15M |
|----------------|------------------|------------------|------------------|-------------------|------------------|------------------|------------------|-------------------|
| 46. PSI-DI BL | 1 | | | | | | | |
| 47. PSI-DI 3M | .545*** | 1 | | | | | | |
| 48. PSI-DI 9M | .506*** | .745*** | 1 | | | | | |
| 49. PSI-DI 15M | .532*** | .642*** | .680*** | 1 | | | | |
| 50. PSI-DC BL | .703*** | .465*** | .544*** | .457*** | 1 | | | |
| 51. PSI-DC 3M | .422*** | .660*** | .503*** | .497*** | .631*** | 1 | | |
| 52. PSI-DC 9M | .467*** | .580*** | .682*** | .535*** | .723*** | .757*** | 1 | |
| 53. PSI-DC 15M | .397*** | .539*** | .584*** | .713*** | .552*** | .745*** | .779*** | 1 |

Note. DISC = HIV Disclosure. CDI = Children's Depression Inventory. CBCL-Agg = Child Behavior Checklist - Aggression Subscale. CBCL-Anx = Child Behavior Checklist - Anxiety Subscale. PCC = Parent-Child Communication Scale. APQ-Pos = Alabama Parenting Questionnaire - Positive Parenting Subscale. APQ-Inv = Alabama Parenting Questionnaire - Involvement Subscale. CBQ-C = Conflict Behavior Questionnaire - Child Report. CBQ-M = Conflict Behavior Questionnaire - Mother Report. PSI-PD = Parenting Stress Index - Parental Distress Subscale. PSI-DI = Parenting Stress Index - Dysfunctional Interaction. PSI-DC = Parenting Stress Index - Difficult Child.

Dichotomous and ordinal variables are coded as follows: Group assignment (0 = control, 1 = intervention). Site (0 = Los Angeles, 1 = Atlanta). Hispanic/Latino (1 = yes, 2 = no). Child gender (1 = female, 2 = male). Disclosure (0 = nondisclosure, 1 = partial disclosure, 2 = full disclosure).

* $p < .05$; ** $p < .01$; *** $p < .001$.

Table 3.5 Model fit indices for univariate latent change score (LCS) models

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|----------|--|-------------|-------------|--------------|----------|-------------|--------------------------------|----------|--------------------|
| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2_{M2-M1}$ | df | p |
| CDI | Constant Change | 0.98 | 0.06 | 8.30 | 5 | 0.14 | -- | -- | -- |
| | Dual Change | 0.98 | 0.07 | 7.09 | 4 | 0.13 | 1.21 | 1 | <i>n.s.</i> |
| | Constant Change with Homoscedastic Residual Variances | 0.96 | 0.07 | 15.23 | 8 | 0.05 | 6.93 | 3 | <i>n.s.</i> |
| CBCL-AGG | Constant Change | 1.00 | 0.03 | 5.77 | 5 | 0.33 | -- | -- | -- |
| | Dual Change | 1.00 | 0.00 | 3.01 | 4 | 0.56 | 2.76 | 1 | <i>n.s.</i> |
| | Constant Change with Homoscedastic Residual Variances | 1.00 | 0.01 | 8.07 | 8 | 0.43 | 2.30 | 3 | <i>n.s.</i> |
| CBCL-ANX | Constant Change | 0.98 | 0.08 | 10.13 | 5 | 0.07 | -- | -- | -- |
| | Dual Change | 0.99 | 0.07 | 7.08 | 4 | 0.13 | 3.05 | 1 | <i>n.s.</i> |
| | Constant Change with Homoscedastic Residual Variances | 0.95 | 0.11 | 25.76 | 8 | 0.00 | 15.63 | 3 | < .01 |
| PCC | Constant Change | 1.00 | 0.02 | 5.23 | 5 | 0.39 | -- | -- | -- |
| | Dual Change | 1.00 | 0.00 | 3.48 | 4 | 0.48 | 1.75 | 1 | <i>n.s.</i> |
| | Constant Change with Homoscedastic Residual Variances | 1.00 | 0.00 | 7.08 | 8 | 0.53 | 1.85 | 1 | <i>n.s.</i> |
| APQ-POS | Constant Change | 0.97 | 0.10 | 12.98 | 5 | 0.02 | -- | -- | -- |
| | Dual Change | 0.99 | 0.06 | 6.13 | 4 | 0.19 | 6.85 | 1 | < .01 |
| | Dual Change with Homoscedastic Residual Variances | 0.99 | 0.05 | 9.77 | 7 | 0.20 | 3.64 | 3 | <i>n.s.</i> |
| APQ-INV | Constant Change | 1.00 | 0.00 | 4.91 | 5 | 0.43 | -- | -- | -- |
| | Dual Change | 1.00 | 0.00 | 1.99 | 4 | 0.74 | 2.92 | 1 | <i>n.s.</i> |
| | Constant Change with Homoscedastic Residual Variances | 0.96 | 0.10 | 22.54 | 8 | 0.00 | 17.63 | 3 | < .01 |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|--------|--|-------------|-------------|--------------|----------|-------------|--------------------------------|----------|--------------------|
| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2_{M2-M1}$ | df | p |
| CBQ-C | Constant Change | 1.00 | 0.00 | 1.59 | 5 | 0.90 | -- | -- | -- |
| | Dual Change | 1.00 | 0.00 | 1.28 | 4 | 0.87 | 0.31 | 1 | <i>n.s.</i> |
| | Constant Change with Homoscedastic Residual Variances | 1.00 | 0.02 | 8.62 | 8 | 0.36 | 7.03 | 3 | <i>n.s.</i> |
| CBQ-M | Constant Change | 1.00 | 0.03 | 5.67 | 5 | 0.34 | -- | -- | -- |
| | Dual Change | 0.99 | 0.05 | 5.60 | 4 | 0.23 | 0.07 | 1 | <i>n.s.</i> |
| | Constant Change with Homoscedastic Residual Variances | 1.00 | 0.03 | 9.13 | 8 | 0.33 | 3.46 | 1 | <i>n.s.</i> |
| PSI-PD | Constant Change | 0.98 | 0.08 | 10.01 | 5 | 0.07 | -- | -- | -- |
| | Dual Change | 1.00 | 0.00 | 2.49 | 4 | 0.65 | 7.52 | 1 | < .01 |
| | Dual Change with Homoscedastic Residual Variances | 1.00 | 0.02 | 7.38 | 7 | 0.39 | 4.89 | 3 | <i>n.s.</i> |
| PSI-DI | Constant Change | 0.99 | 0.05 | 7.09 | 5 | 0.21 | -- | -- | -- |
| | Dual Change | 1.00 | 0.04 | 5.02 | 4 | 0.28 | 2.07 | 1 | <i>n.s.</i> |
| | Constant Change with Homoscedastic Residual Variances | 0.93 | 0.11 | 23.89 | 8 | 0.00 | 16.8 | 3 | < .01 |
| PSI-DC | Constant Change | 0.98 | 0.08 | 10.26 | 5 | 0.07 | -- | -- | -- |
| | Dual Change | 0.98 | 0.09 | 9.58 | 4 | 0.05 | 0.68 | 1 | <i>n.s.</i> |
| | Constant Change with Homoscedastic Residual Variances | 0.96 | 0.10 | 20.68 | 8 | 0.01 | 10.42 | 3 | < .05 |

Note. DISC = HIV Disclosure. CDI = Children's Depression Inventory. CBCL-Agg = Child Behavior Checklist - Aggression Subscale. CBCL-Anx = Child Behavior Checklist - Anxiety Subscale. PCC = Parent-Child Communication Scale. APQ-Pos = Alabama Parenting Questionnaire - Positive Parenting Subscale. APQ-Inv = Alabama Parenting Questionnaire - Involvement Subscale. CBQ-C = Conflict Behavior Questionnaire - Child Report. CBQ-M = Conflict Behavior Questionnaire - Mother Report. PSI-PD = Parenting Stress Index - Parental Distress Subscale. PSI-DI = Parenting Stress Index - Dysfunctional Interaction. PSI-DC = Parenting Stress Index - Difficult Child.

Proportional change parameters are retained when a chi square difference test reveals a significant improvement in model fit; in contrast, equality constraints on residual variances are retained when a chi square difference test reveals no significant decrement in model fit.

Results in **bold** indicate retained models.

Table 3.6 Model fit indices and parameter estimates for latent change score models with disclosure as time-varying predictor

| | CFI | RMSEA | χ^2 | df | p | IntY with SlpY | IntY on Disc1 | DeltaY2 on Disc2 | DeltaY3 on Disc3 | DeltaY4 on Disc4 |
|---|------|-------|----------|----|------|--------------------------|---------------------------|---------------------|---------------------|---------------------|
| X _{DISC} , Y _{CDI} | 0.92 | 0.07 | 30.39 | 19 | 0.05 | -- | 0.09 (1.48) | -0.27 (0.70) | 0.53 (0.72) | 0.35 (0.72) |
| | | | | | | -- | -- | -- | -- | -- |
| X _{DISC} , Y _{CBCL- AGG} | 1.00 | 0.02 | 21.05 | 20 | 0.39 | -0.01 (0.00) | 0.07 (0.02) | -0.02 (0.02) | 0.03 (0.36) | 0.08 (0.02) |
| | | | | | | -0.25 (0.16) | 0.08 (0.09) | -0.20 (0.28) | 0.39 (0.25) | 0.12 (0.32) |
| X _{DISC} , Y _{CBCL- ANX} | 0.95 | 0.09 | 30.99 | 17 | 0.02 | 0.00 (0.00) | 0.10 (0.08) | -0.01 (0.03) | 0.01 (0.02) | 0.00 (0.02) |
| | | | | | | -- | .13 (.11) | -- | -- | -- |
| X _{DISC} , Y _{PCC} | 1.00 | 0.00 | 16.79 | 20 | 0.67 | -0.02 (0.02) | -0.24 (0.15) | 0.10 (0.06) | -0.06 (0.07) | -0.05 (0.07) |
| | | | | | | -0.39 (.21) [†] | -0.15 (0.10) | 0.65 (0.29)* | -0.45 (0.45) | -0.43 (0.53) |
| X _{DISC} , Y _{APQ- POS} | 0.95 | 0.07 | 29.33 | 19 | 0.06 | 0.12 (0.04)** | -0.06 (0.10) | 0.04 (0.05) | 0.03 (0.05) | -0.01 (0.04) |
| | | | | | | 0.77 (0.08) | -0.05 (0.09) | 0.10 (0.13) | 1.05 (1.79) | -0.31 (0.84) |
| X _{DISC} , Y _{APQ- INV} | 1.00 | 0.00 | 13.05 | 17 | 0.73 | -0.01 (0.01) | 0.05 (0.14) | 0.03 (0.05) | -0.05 (0.04) | -0.05 (0.05) |
| | | | | | | -0.14 (0.20) | 0.03 (0.10) | 0.25 (0.36) | -0.43 (0.31) | -0.42 (0.33) |
| X _{DISC} , Y _{CBQ-C} | 1.00 | 0.00 | 13.79 | 20 | 0.84 | 0.00 (0.00)* | -0.07 (0.04) [†] | 0.04 (0.02)* | -0.02 (0.01) | -0.02 (0.02) |
| | | | | | | -0.80 (0.28)** | -0.16 (0.09) [†] | 0.73 (0.19)** | -0.64 (0.42) | -0.58 (-.51) |
| X _{DISC} , | 1.00 | 0.00 | 16.95 | 20 | 0.66 | -0.01 (0.00)** | -0.07 (0.05) | 0.03 (0.02) | -0.03 (0.02) | -0.02 (0.02) |

| | CFI | RMSEA | χ^2 | df | p | IntY with SlpY | IntY on Disc1 | DeltaY2 on Disc2 | DeltaY3 on Disc3 | DeltaY4 on Disc4 |
|--|------|-------|----------|----|------|-------------------|------------------|---------------------------|--------------------------|--------------------------|
| Y _{CBQ-M} | | | | | | -0.50 (0.11)** | -0.14 (0.09) | 0.36 (0.24) | -0.39 (0.26) | -0.31 (0.27) |
| X _{DISC} , Y _{PSI-PD} | 0.96 | 0.07 | 23.94 | 16 | 0.09 | -- | 0.27 (0.17) | -0.16 (0.08)* | 0.00 (0.07) | 0.02 (0.08) |
| | | | | | | -- | 0.17 (0.11) | -0.41 (0.28) [†] | 0.02 (0.48) | 0.05 (0.25) |
| X _{DISC} , Y _{PSI-DI} | 0.94 | 0.08 | 28.46 | 16 | 0.03 | -- | 0.07 (0.15) | -0.15 (0.07)* | 0.10 (0.06) [†] | 0.06 (0.06) |
| | | | | | | -- | 0.05 (0.11) | -0.57 (0.23)* | 0.45 (0.26) [†] | 0.26 (0.28) |
| X _{DISC} , Y _{PSI-DC} | 0.97 | 0.07 | 25.90 | 16 | 0.06 | -- | 0.27 (0.17) | -0.15 (0.07)* | 0.01 (0.06) | 0.10 (0.06) [†] |
| | | | | | | -- | 0.16 (0.10) | -0.56 (0.24)* | 0.04 (0.29) | 0.40 (0.23) [†] |

Note. DISC = HIV Disclosure. CDI = Children's Depression Inventory. CBCL-Agg = Child Behavior Checklist - Aggression Subscale. CBCL-Anx = Child Behavior Checklist - Anxiety Subscale. PCC = Parent-Child Communication Scale. APQ-Pos = Alabama Parenting Questionnaire - Positive Parenting Subscale. APQ-Inv = Alabama Parenting Questionnaire - Involvement Subscale. CBQ-C = Conflict Behavior Questionnaire - Child Report. CBQ-M = Conflict Behavior Questionnaire - Mother Report. PSI-PD = Parenting Stress Index - Parental Distress Subscale. PSI-DI = Parenting Stress Index - Dysfunctional Interaction. PSI-DC = Parenting Stress Index - Difficult Child.

[†] $p < 0.10$; * $p < 0.05$; ** $p < 0.01$

Unstandardized coefficients displayed, with standardized coefficients beneath in *italics*. Dashed lines (--) indicates parameters that were not specified or could not be estimated due to model convergence issues.

Table 3.7 Model fit indices for bivariate latent change score (LCS) models

| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2$ Difference Test | | |
|---|--------------------|-------------|-------------|--------------|-----------|-------------|--------------------------------|----------|-----------------|
| | | | | | | | $\Delta\chi^2_{M2-M1}$ | df | p |
| X _{PCC} , Y _{CDI} | No Coupling | 0.97 | 0.05 | 42.46 | 28 | 0.04 | -- | -- | -- |
| | Y on X | 0.97 | 0.05 | 40.85 | 27 | 0.04 | 1.61 | 1 | <i>n.s.</i> |
| | X on Y | 0.97 | 0.05 | 38.97 | 27 | 0.06 | 3.49 | 1 | < .10 |
| | Full Coupling | 0.98 | 0.05 | 36.90 | 26 | 0.08 | 5.56 | 2 | < .10 |
| X _{APQ-POS} , Y _{CDI} | No Coupling | 0.97 | 0.05 | 38.18 | 27 | 0.08 | -- | -- | -- |
| | Y on X | 0.97 | 0.05 | 37.50 | 26 | 0.07 | 0.68 | 1 | <i>n.s.</i> |
| | X on Y | 0.97 | 0.05 | 37.93 | 26 | 0.06 | 0.25 | 1 | <i>n.s.</i> |
| | Full Coupling | 0.97 | 0.05 | 37.26 | 25 | 0.05 | 0.92 | 2 | <i>n.s.</i> |
| X _{APQ-INV} , Y _{CDI} | No Coupling | 0.99 | 0.04 | 30.77 | 25 | 0.20 | -- | -- | -- |
| | Y on X | 0.99 | 0.04 | 30.06 | 24 | 0.18 | 0.71 | 1 | <i>n.s.</i> |
| | X on Y | 0.99 | 0.04 | 30.09 | 24 | 0.18 | 0.68 | 1 | <i>n.s.</i> |
| | Full Coupling | 0.99 | 0.04 | 29.89 | 23 | 0.15 | 0.88 | 2 | <i>n.s.</i> |
| X _{CBQ-M} , Y _{CDI} | No Coupling | 0.97 | 0.05 | 39.73 | 28 | 0.07 | -- | -- | -- |
| | Y on X | 0.97 | 0.05 | 39.32 | 27 | 0.06 | 0.41 | 1 | <i>n.s.</i> |
| | X on Y | 0.97 | 0.05 | 37.69 | 27 | 0.05 | 2.04 | 1 | <i>n.s.</i> |
| | Full Coupling | 0.97 | 0.05 | 39.27 | 26 | 0.05 | 0.46 | 1 | <i>n.s.</i> |
| X _{PSI-PD} , Y _{CDI} | No Coupling | 0.97 | 0.05 | 35.74 | 26 | 0.10 | -- | -- | -- |
| | Y on X | 0.97 | 0.05 | 35.54 | 25 | 0.08 | 0.20 | 1 | <i>n.s.</i> |
| | X on Y | 0.97 | 0.05 | 34.64 | 25 | 0.10 | 1.10 | 1 | <i>n.s.</i> |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| X _{PSI-DI} , Y _{CDI} | No Coupling | 0.94 | 0.08 | 48.87 | 24 | 0.00 | -- | -- | -- |
| | Y on X | 0.94 | 0.08 | 48.71 | 23 | 0.00 | 0.16 | 1 | <i>n.s.</i> |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|--|--------------------|-------------|-------------|--------------|-----------|-------------|--------------------------------|----|-------------|
| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2_{M2-M1}$ | df | p |
| X _{PSI-DC} , Y _{CDI} | X on Y | 0.94 | 0.08 | 48.86 | 23 | 0.00 | 0.01 | 1 | <i>n.s.</i> |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| | No Coupling | 0.96 | 0.07 | 44.04 | 24 | 0.01 | -- | -- | -- |
| | Y on X | 0.96 | 0.07 | 42.45 | 23 | 0.01 | 1.59 | 1 | <i>n.s.</i> |
| | X on Y | 0.96 | 0.07 | 43.47 | 23 | 0.01 | 0.57 | 1 | <i>n.s.</i> |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| X _{PCC} , Y _{CBCL-AGG} | No Coupling | 1.00 | 0.01 | 29.43 | 29 | 0.44 | -- | -- | -- |
| | Y on X | 1.00 | 0.02 | 29.41 | 28 | 0.39 | 0.02 | 1 | <i>n.s.</i> |
| | X on Y | 1.00 | 0.02 | 29.40 | 28 | 0.39 | 0.03 | 1 | <i>n.s.</i> |
| | Full Coupling | 1.00 | 0.02 | 29.39 | 27 | 0.34 | 0.04 | 1 | <i>n.s.</i> |
| X _{APQ-POS} , Y _{CBCL-AGG} | No Coupling | 0.99 | 0.03 | 33.42 | 28 | 0.22 | -- | -- | -- |
| | Y on X | 0.99 | 0.04 | 33.42 | 27 | 0.18 | 0.00 | 1 | <i>n.s.</i> |
| | X on Y | 0.99 | 0.04 | 33.25 | 27 | 0.19 | 0.17 | 1 | <i>n.s.</i> |
| | Full Coupling | 0.99 | 0.04 | 33.24 | 26 | 0.16 | 0.18 | 1 | <i>n.s.</i> |
| X _{APQ-INV} , Y _{CBCL-AGG} | No Coupling | 0.99 | 0.04 | 31.53 | 26 | 0.21 | -- | -- | -- |
| | Y on X | 0.99 | 0.04 | 31.43 | 25 | 0.18 | 0.10 | 1 | <i>n.s.</i> |
| | X on Y | 0.99 | 0.04 | 31.43 | 25 | 0.18 | 0.10 | 1 | <i>n.s.</i> |
| | Full Coupling | 0.99 | 0.04 | 31.37 | 24 | 0.14 | 0.16 | 1 | <i>n.s.</i> |
| X _{PSI-PD} , Y _{CBCL-AGG} | No Coupling | 0.95 | 0.07 | 56.63 | 29 | 0.00 | -- | -- | -- |
| | Y on X | 0.96 | 0.07 | 53.51 | 28 | 0.00 | 3.12 | 1 | <i>n.s.</i> |
| | X on Y | 0.96 | 0.07 | 54.88 | 28 | 0.00 | 1.75 | 1 | <i>n.s.</i> |
| | Full Coupling | 0.96 | 0.07 | 52.15 | 27 | 0.00 | 4.48 | 2 | <i>n.s.</i> |
| X _{PSI-DI} , Y _{CBCL-AGG} | No Coupling | 0.96 | 0.07 | 49.35 | 27 | 0.01 | -- | -- | -- |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|--|--------------------|-------------|-------------|--------------|-----------|-------------|--------------------------------|------|-------------|
| | | | | | | | $\Delta\chi^2_{M2-M1}$ | df | p |
| X _{PSI-DC} , Y _{CBCL-AGG} | Y on X | 0.96 | 0.07 | 48.80 | 26 | 0.00 | 0.55 | 1 | <i>n.s.</i> |
| | X on Y | 0.96 | 0.07 | 48.95 | 26 | 0.00 | 0.40 | 1 | <i>n.s.</i> |
| | Full Coupling | 0.96 | 0.07 | 48.45 | 25 | 0.00 | 0.90 | 1 | <i>n.s.</i> |
| | No Coupling | 0.92 | 0.12 | 94.61 | 27 | 0.00 | -- | -- | -- |
| | Y on X | 0.92 | 0.12 | 94.45 | 26 | 0.00 | 0.16 | 1 | <i>n.s.</i> |
| | X on Y | 0.92 | 0.12 | 93.64 | 26 | 0.00 | 0.97 | 1 | <i>n.s.</i> |
| | Full Coupling | 0.92 | 0.13 | 93.46 | 25 | 0.00 | 1.15 | 2 | <i>n.s.</i> |
| X _{PCC} , Y _{CBCL-ANX} | No Coupling | 0.99 | 0.03 | 29.29 | 25 | 0.25 | | | |
| | Y on X | 0.99 | 0.04 | 29.25 | 24 | 0.21 | 0.04 | 1 | <i>n.s.</i> |
| | X on Y | 1.00 | 0.03 | 26.81 | 24 | 0.31 | 2.48 | 1 | <i>n.s.</i> |
| | Full Coupling | 1.00 | 0.03 | 25.84 | 23 | 0.31 | 3.45 | 2 | <i>n.s.</i> |
| X _{APQ-POS} , Y _{CBCL-ANX} | No Coupling | 0.99 | 0.04 | 32.22 | 24 | 0.12 | -- | -- | -- |
| | Y on X | 0.99 | 0.05 | 31.43 | 23 | 0.11 | 0.79 | 1 | <i>n.s.</i> |
| | X on Y | 0.99 | 0.04 | 30.70 | 23 | 0.13 | 1.52 | 1 | <i>n.s.</i> |
| | Full Coupling | 0.99 | 0.05 | 30.05 | 22 | 0.12 | 2.17 | 2 | <i>n.s.</i> |
| X _{APQ-INV} , Y _{CBCL-ANX} | No Coupling | 1.00 | 0.00 | 21.89 | 22 | 0.47 | -- | -- | -- |
| | Y on X | 1.00 | 0.02 | 21.88 | 21 | 0.41 | 0.01 | 1 | <i>n.s.</i> |
| | X on Y | 1.00 | 0.02 | 21.89 | 21 | 0.41 | 0.00 | 1 | <i>n.s.</i> |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| X _{PSI-PD} , Y _{CBCL-ANX} | No Coupling | 0.97 | 0.07 | 45.52 | 25 | 0.01 | -- | -- | -- |
| | Y on X | 0.97 | 0.07 | 44.46 | 24 | 0.01 | 1.06 | 1 | <i>n.s.</i> |
| | X on Y | 0.96 | 0.07 | 45.29 | 24 | 0.01 | 0.23 | 1 | <i>n.s.</i> |
| | Full Coupling | 0.97 | 0.07 | 43.61 | 23 | 0.01 | 1.91 | 2 | <i>n.s.</i> |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|--|---------------|------|-------|----------|----|------|--------------------------------|----|------|
| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2_{\text{M2-M1}}$ | df | p |
| $X_{\text{PSI-DI}}, Y_{\text{CBCL-ANX}}$ | No Coupling | 0.98 | 0.05 | 33.84 | 23 | 0.07 | -- | -- | -- |
| | Y on X | 0.98 | 0.06 | 33.72 | 22 | 0.05 | 0.12 | 1 | n.s. |
| | X on Y | 0.98 | 0.07 | 32.62 | 22 | 0.07 | 1.22 | 1 | n.s. |
| | Full Coupling | 0.99 | 0.05 | 29.81 | 21 | 0.10 | 4.03 | 2 | n.s. |
| $X_{\text{PSI-DC}}, X_{\text{CBCL-ANX}}$ | No Coupling | 0.96 | 0.09 | 55.24 | 23 | 0.00 | -- | -- | -- |
| | Y on X | 0.96 | 0.09 | 54.35 | 22 | 0.00 | 0.89 | 1 | n.s. |
| | X on Y | 0.96 | 0.09 | 55.20 | 22 | 0.00 | 0.04 | 1 | n.s. |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| $X_{\text{PSI-PD}}, Y_{\text{PCC}}$ | No Coupling | 0.99 | 0.03 | 31.53 | 28 | 0.29 | -- | -- | -- |
| | Y on X | 0.99 | 0.03 | 30.30 | 27 | 0.30 | 1.23 | 1 | n.s. |
| | X on Y | 0.99 | 0.03 | 31.33 | 27 | 0.26 | 0.2 | 1 | n.s. |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| $X_{\text{PSI-DI}}, Y_{\text{PCC}}$ | No Coupling | 0.98 | 0.04 | 34.06 | 26 | 0.13 | -- | -- | -- |
| | Y on X | 0.98 | 0.05 | 34.05 | 25 | 0.11 | 0.01 | 1 | n.s. |
| | X on Y | 0.98 | 0.05 | 33.90 | 25 | 0.11 | 0.16 | 1 | n.s. |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| $X_{\text{PSI-DC}}, Y_{\text{PCC}}$ | No Coupling | 1.00 | 0.02 | 27.78 | 26 | 0.37 | -- | -- | -- |
| | Y on X | 1.00 | 0.03 | 27.78 | 25 | 0.32 | 0 | 1 | n.s. |
| | X on Y | 1.00 | 0.03 | 27.78 | 25 | 0.32 | 0 | 1 | n.s. |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| $X_{\text{PSI-PD}}, Y_{\text{APQ-POS}}$ | No Coupling | 0.95 | 0.07 | 50.23 | 27 | 0.00 | -- | -- | -- |
| | Y on X | 0.95 | 0.07 | 50.03 | 26 | 0.00 | 0.20 | 1 | n.s. |
| | X on Y | 0.95 | 0.07 | 50.19 | 26 | 0.00 | 0.04 | 1 | n.s. |

| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2$ Difference Test | | |
|---------------------------|---------------|------|-------|----------|----|------|--------------------------------|----|-------|
| | | | | | | | $\Delta\chi^2_{M2-M1}$ | df | p |
| $X_{PSI-DI}, Y_{APQ-POS}$ | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| | No Coupling | 0.96 | 0.07 | 44.27 | 25 | 0.01 | -- | -- | -- |
| | Y on X | 0.96 | 0.07 | 44.24 | 24 | 0.01 | 0.03 | 1 | n.s. |
| | X on Y | 0.97 | 0.07 | 41.58 | 24 | 0.01 | 2.69 | 1 | n.s. |
| | Full Coupling | 0.97 | 0.07 | 41.36 | 23 | 0.01 | 2.91 | 2 | n.s. |
| $X_{PSI-DC}, Y_{APQ-POS}$ | No Coupling | 0.97 | 0.06 | 40.10 | 25 | 0.03 | -- | -- | -- |
| | Y on X | 0.97 | 0.06 | 39.87 | 24 | 0.02 | 0.23 | 1 | n.s. |
| | X on Y | 0.97 | 0.06 | 40.08 | 24 | 0.02 | 0.02 | 1 | n.s. |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| $X_{PSI-PD}, Y_{APQ-INV}$ | No Coupling | 0.96 | 0.08 | 49.83 | 24 | 0.00 | | | |
| | Y on X | 0.97 | 0.07 | 44.08 | 23 | 0.01 | 5.75 | 1 | < .05 |
| | X on Y | 0.96 | 0.08 | 48.38 | 23 | 0.00 | 1.45 | 1 | n.s. |
| | Full Coupling | 0.96 | 0.08 | 43.66 | 22 | 0.00 | 6.17 | 2 | < .05 |
| $X_{PSI-DI}, Y_{APQ-INV}$ | No Coupling | 0.98 | 0.06 | 35.03 | 22 | 0.04 | | | |
| | Y on X | 0.98 | 0.06 | 35.03 | 21 | 0.03 | 0.00 | 1 | n.s. |
| | X on Y | 0.98 | 0.06 | 33.39 | 21 | 0.04 | 1.64 | 1 | n.s. |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |
| $X_{PSI-DC}, Y_{APQ-INV}$ | No Coupling | 0.97 | 0.07 | 40.15 | 22 | 0.01 | -- | -- | -- |
| | Y on X | 0.97 | 0.07 | 40.14 | 21 | 0.01 | 0.01 | 1 | n.s. |
| | X on Y | 0.97 | 0.07 | 39.54 | 21 | 0.01 | 0.61 | 1 | n.s. |
| | Full Coupling | -- | -- | -- | -- | -- | -- | -- | -- |

Note. DISC = HIV Disclosure. CDI = Children's Depression Inventory. CBCL-Agg = Child Behavior Checklist - Aggression Subscale. CBCL-Anx = Child Behavior Checklist - Anxiety Subscale. PCC = Parent-Child Communication Scale. APQ-Pos =

Alabama Parenting Questionnaire - Positive Parenting Subscale. APQ-Inv = Alabama Parenting Questionnaire - Involvement Subscale. CBQ-C = Conflict Behavior Questionnaire - Child Report. CBQ-M = Conflict Behavior Questionnaire - Mother Report. PSI-PD = Parenting Stress Index - Parental Distress Subscale. PSI-DI = Parenting Stress Index - Dysfunctional Interaction. PSI-DC = Parenting Stress Index - Difficult Child.

Dashed lines (--) indicate models that were not tested due to a) non applicability, b) computational convergence issues, or 3) non-hypothesized paths.

Table 3.8 Unstandardized and standardized parameter estimates for bivariate latent change score (LCS) models

| | X _{PCC} , Y _{CDI} | X _{APQ-POS} , Y _{CDI} | X _{APQ-INV} , Y _{CDI} | X _{PSI-PD} , Y _{CDI} | X _{PSI-DI} , Y _{CDI} | X _{PSI-DC} , Y _{CDI} |
|-------------------------------------|---|---|---|--|--|--|
| IntX Mean | 3.65 (0.05)*** 6.14 (0.49)** | 4.46 (0.04)** 10.37 (0.82)** | 3.87 (0.05)*** 7.20 (0.53)** | 2.49 (0.06)** 4.36 (0.40)** | 2.02 (0.06)** 3.98 (0.32)** | 2.30 (0.06)** 3.69 (0.27)** |
| SlpX Mean | -1.83 (1.04) [†] -6.98 (0.81)** | 3.89 (0.60)** 9.39 (0.68)** | -0.03 (0.02)* -0.35 (0.22) | -- -- | -- -- | -- -- |
| IntY Mean | 35.71 (0.51)** 6.41 (0.52)** | 35.70 (0.51)** 6.34 (0.52)** | 35.71 (0.51)** 6.36 (0.52)** | 35.91 (0.50)** 7.68 (0.58)** | 35.92 (0.50)** 7.65 (0.58)** | 35.92 (0.50)** 7.67 (0.58)** |
| SlpY Mean | 0.26 (0.13)* -1.08 (0.42)* | -1.03 (0.19)** -0.93 (0.32)* | -1.03 (0.19)** -0.96 (0.34)* | -- -- | -- -- | -- -- |
| IntX with SlpX | 0.08 (0.06) 0.49 (0.17)* | 0.13 (0.03)** 0.72 (0.07)** | -0.01 (0.01) -0.10 (0.21) | -- -- | -- -- | -- -- |
| IntY with SlpY | -3.65 (1.47)* -0.68 (0.15)** | -4.03 (1.55)* -0.65 (0.12)** | -3.91 (1.55)* -0.65 (0.13)** | -- -- | -- -- | -- -- |
| IntX with IntY | -2.02 (0.40)** -0.61 (0.08)** | -0.62 (0.27)* -0.26 (0.10)* | -0.67 (0.32)* -0.22 (0.10)* | 0.50 (0.27) [†] 0.19 (0.10) [†] | 1.10 (0.25)** 0.46 (0.09)** | 0.81 (0.29)* 0.28 (0.09)* |
| SlpX with SlpY | -0.01 (0.11) -0.06 (0.45) | -0.01 (0.09) -0.03 (0.20) | 0.02 (0.04) 0.19 (0.40) | -- -- | -- -- | -- -- |
| IntX with SlpY | 0.26 (0.13) 0.46 (0.24) [†] | 0.11 (0.10) 0.22 (0.21) | 0.12 (0.12) 0.20 (0.21) | -- -- | -- -- | -- -- |
| IntY with SlpX | -1.24 (0.86) -0.85 (0.12)** | -0.27 (0.25) -0.11 (0.10) | 0.09 (0.10) 0.18 (0.21) | -- -- | -- -- | -- -- |
| ΔY ₂ on LVX ₁ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔY ₃ on LVX ₂ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PCC} , Y _{CDI} | X _{APQ-POS} , Y _{CDI} | X _{APQ-INV} , Y _{CDI} | X _{PSI-PD} , Y _{CDI} | X _{PSI-DI} , Y _{CDI} | X _{PSI-DC} , Y _{CDI} |
|----------------------------------|--|---|---|--|--|--|
| ΔY_4 on LVX ₃ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX_2 on LVY ₁ | 0.06 (0.03) [†] 1.90 (0.72)* | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX_3 on LVY ₂ | 0.06 (0.03) [†] 3.83 (3.32) | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX_4 on LVY ₃ | 0.06 (0.03) [†] -- | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PCC} , Y _{CBCL-AGG} | X _{APQ-POS} , Y _{CBCL-AGG} | X _{APQ-INV} , Y _{CBCL-AGG} | X _{PSI-PD} , Y _{CBCL-AGG} | X _{PSI-DI} , Y _{CBCL-AGG} | X _{PSI-DC} , Y _{CBCL-AGG} |
|----------------|--|--|--|---|---|---|
| IntX Mean | 3.67 (0.05)** 6.30 (0.51)** | 4.46 (0.04)** 10.36 (0.82)** | 3.87 (0.05)** 7.20 (0.53)** | 2.49 (0.06)** 4.43 (0.38)** | 2.02 (0.06)** 3.89 (0.29)** | 2.29 (0.06)** 3.59 (0.25)** |
| SlpX Mean | 0.08 (0.02)** 1.18 (0.83) | 3.96 (0.61)** 9.40 (0.68)** | -0.03 (0.02) [†] -0.35 (0.22) | -- -- | -- -- | -- -- |
| IntY Mean | 1.49 (0.03)** 5.09 (0.34)** | 1.49 (0.03)** 5.09 (0.34)** | 1.49 (0.03)** 5.09 (0.34)** | 1.48 (0.03)** 5.08 (0.34)** | 1.48 (0.03)** 5.09 (0.34)** | 1.48 (0.03)** 5.12 (0.34)** |
| SlpY Mean | -- -- | -- -- | -- -- | -- -- | -- -- | -- -- |
| IntX with SlpX | -0.02 (0.02) -0.41 (0.25) | 0.13 (0.03)** 0.72 (0.07)** | 0.00 (0.01) -0.10 (0.22) | -- -- | -- -- | -- -- |

| | X _{PCC} , Y _{CBCL-AGG} | X _{APQ-POS} , Y _{CBCL-AGG} | X _{APQ-INV} , Y _{CBCL-AGG} | X _{PSI-PD} , Y _{CBCL-AGG} | X _{PSI-DI} , Y _{CBCL-AGG} | X _{PSI-DC} , Y _{CBCL-AGG} |
|-------------------------------------|--|--|--|---|---|---|
| IntY with SlpY | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- |
| IntX with IntY | -0.02 (0.02) | -0.02 (0.01) [†] | -0.02 (0.02) | 0.09 (0.02)** | 0.07 (0.02)** | 0.15 (0.02)** |
| | -0.12 (0.10) | -0.17 (0.10) [†] | -0.14 (0.09) | 0.56 (0.07)** | 0.48 (0.08)** | 0.83 (0.04)** |
| SlpX with SlpY | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- |
| IntX with SlpY | -- | -- | -- | -- | -- | -- |
| | -- | -- | -- | -- | -- | -- |
| IntY with SlpX | 0.01 (0.01) | 0.00 (0.01) | 0.00 (0.01) | -- | -- | -- |
| | 0.22 (0.30) | 0.00 (0.09) | 0.07 (0.19) | -- | -- | -- |
| ΔY ₂ on LVX ₁ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔY ₃ on LVX ₂ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔY ₄ on LVX ₃ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX ₂ on LVY ₁ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX ₃ on LVY ₂ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX ₄ on LVY ₃ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PCC} , Y _{CBCL-ANX} | X _{APQ-POS} , Y _{CBCL-ANX} | X _{APQ-INV} , Y _{CBCL-ANX} | X _{PSI-PD} , Y _{CBCL-ANX} | X _{PSI-DI} , Y _{CBCL-ANX} | X _{PSI-DC} , X _{CBCL-ANX} |
|-------------------------------------|--|--|--|---|---|---|
| IntX Mean | 3.67 (0.05)** 6.31 (0.51)** | 4.46 (0.04)** 10.37 (0.82)** | 3.87 (0.05)** 7.20 (0.53)** | 2.49 (0.06)** 4.46 (0.41)** | 2.02 (0.06)** 4.01 (0.32)** | 2.30 (0.06)** 3.67 (0.26)** |
| SlpX Mean | 0.08 (0.02)** 1.18 (0.83) | 3.88 (0.60)** 9.40 (0.68)** | -0.03 (0.02) [†] -0.36 (0.24) | -- -- | -- -- | -- -- |
| IntY Mean | 1.43 (0.03)** 4.90 (0.40)** | 1.43 (0.03)** 4.90 (0.40)** | 1.43 (0.03)** 4.89 (0.40)** | 1.43 (0.03)** 4.89 (0.39)** | 1.42 (0.03)** 4.89 (0.40)** | 1.43 (0.03)** 4.89 (0.40)** |
| SlpY Mean | -0.02 (0.01)* -- | -0.03 (0.01)* -- | -0.02 (0.01)* -- | -0.02 (0.01)* -3.09 (42.43) | -0.02 (0.01)* -- | -0.02 (0.01)* -- |
| IntX with SlpX | -0.02 (0.02) -0.40 (0.25) | 0.13 (0.03)** 0.72 (0.07)** | 0.00 (0.01) -0.09 (0.22) | -- -- | -- -- | -- -- |
| IntY with SlpY | 0.00 (0.00) -- | 0.00 (0.00) -- | 0.00 (0.00) -- | 0.00 (0.00) 0.45 (7.32) | 0.00 (0.00) -- | 0.00 (0.00) -- |
| IntX with IntY | -0.04 (0.02)* -0.26 (0.11)* | -0.01 (0.01) -0.04 (0.11) | -0.01 (0.02) -0.09 (0.10) | 0.09 (0.02)** 0.56 (0.08)** | 0.08 (0.02)** 0.56 (0.08)** | 0.13 (0.02)** 0.71 (0.07)** |
| SlpX with SlpY | 0.00 (0.00) -- | 0.00 (0.00) -- | 0.00 (0.00) -- | -- -- | -- -- | -- -- |
| IntX with SlpY | 0.01 (0.01) -- | 0.00 (0.00) -- | 0.00 (0.01) -- | -0.01 (0.01) -1.09 (14.96) | -0.01 (0.01) [†] -- | 0.00 (0.01) -- |
| IntY with SlpX | 0.01 (0.01) 0.29 (0.35) | -0.01 (0.01) -0.10 (0.10) | 0.00 (0.01) -0.15 (0.22) | -- -- | -- -- | -- -- |
| ΔY ₂ on LVX ₁ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔY ₃ on LVX ₂ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PCC} , Y _{CBCL-ANX} | X _{APQ-POS} , Y _{CBCL-ANX} | X _{APQ-INV} , Y _{CBCL-ANX} | X _{PSI-PD} , Y _{CBCL-ANX} | X _{PSI-DI} , Y _{CBCL-ANX} | X _{PSI-DC} , X _{CBCL-ANX} |
|-------------------------|--|--|--|---|---|---|
| ΔY_4 on LVX_3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX_2 on LVY_1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX_3 on LVY_2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX_4 on LVY_3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PSI-PD} , Y _{PCC} | X _{PSI-DI} , Y _{PCC} | X _{PSI-DC} , Y _{PCC} | X _{PSI-PD} , Y _{APQ-POS} | X _{PSI-DI} , Y _{APQ-POS} | X _{PSI-DC} , Y _{APQ-POS} |
|----------------|--|--|--|--|--|--|
| IntX Mean | 2.49 (0.06)** 4.38 (0.41)** | 2.02 (0.06)** 3.95 (0.32)** | 2.30 (0.06)** 3.68 (0.27)** | 2.49 (0.06)** 4.35 (0.41)** | 1.99 (0.05)** 4.12 (0.41)** | 2.30 (0.06)** 3.69 (0.27)** |
| SlpX Mean | -- -- | -- -- | -- -- | -- -- | -0.04 (0.02)* -- | -- -- |
| IntY Mean | 3.68 (0.05)** 6.33 (0.52)** | 3.68 (0.05)** 6.33 (0.52)** | 3.68 (0.05)** 1.19 (0.90) | 4.46 (0.04)** 10.38 (0.82)** | 4.46 (0.04)** 10.37 (0.82)** | 4.46 (0.04)** 10.38 (0.82)** |
| SlpY Mean | 0.08 (0.02)** 1.20 (0.91) | 0.08 (0.02)** 1.20 (0.92) | 0.08 (0.02)** 1.19 (.90) | 4.00 (0.62)** 9.40 (0.68)** | 3.92 (0.60)** 9.35 (0.68)** | 4.01 (0.63)** 9.39 (0.68)** |
| IntX with SlpX | -- -- | -- -- | -- -- | -- -- | 0.02 (0.01) -- | -- -- |
| IntY with SlpY | -0.02 (0.02) -0.39 (0.26) | -0.02 (0.02) -0.38 (0.26) | -0.02 (0.02) -0.38 (0.26) | 0.13 (0.03)* 0.73 (0.07)** | 0.13 (0.03)** 0.73 (0.07)** | 0.13 (0.03)** 0.73 (0.07)** |

| | X _{PSI-PD} , Y _{PCC} | X _{PSI-DI} , Y _{PCC} | X _{PSI-DC} , Y _{PCC} | X _{PSI-PD} , Y _{APQ-POS} | X _{PSI-DI} , Y _{APQ-POS} | X _{PSI-DC} , Y _{APQ-POS} |
|-------------------------------------|--|---|--|---|--|--|
| IntX with IntY | -0.02 (0.03) <i>-0.07 (0.10)</i> | -0.12 (0.03)** <i>-0.39 (0.09)**</i> | -0.06 (0.04) [†] <i>-0.18 (0.10)[†]</i> | -0.05 (0.03) [†] <i>-0.21 (0.10)*</i> | -0.11 (0.03)** <i>-0.51 (0.10)**</i> | -0.08 (0.03)* <i>-0.30 (0.09)*</i> |
| SlpX with SlpY | -- -- | -- -- | -- -- | -- -- | -0.01 (0.01) -- | -- -- |
| IntX with SlpY | 0.01 (0.01) <i>0.13 (0.30)</i> | 0.01 (0.01) <i>0.35 (0.38)</i> | 0.00 (0.01) <i>0.08 (0.30)</i> | -0.04 (0.03) <i>-0.15 (0.10)</i> | -0.08 (0.03)* <i>-0.41 (0.10)**</i> | -0.07 (0.03)* <i>-0.25 (0.09)*</i> |
| IntY with SlpX | -- -- | -- -- | -- -- | -- -- | 0.03 (0.01)* -- | -- -- |
| ΔY ₂ on LVX ₁ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔY ₃ on LVX ₂ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔY ₄ on LVX ₃ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX ₂ on LVY ₁ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX ₃ on LVY ₂ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX ₄ on LVY ₃ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PSI-PD} , Y _{APQ-INV} | X _{PSI-DI} , Y _{APQ-INV} | X _{PSI-DC} , Y _{APQ-INV} |
|-------------------------------------|--|--|--|
| IntX Mean | 2.46 (0.06)** 3.82 (0.32)** | 1.99 (0.05)** 4.08 (0.42)** | 2.30 (0.06)** 3.54 (0.29)** |
| SlpX Mean | 1.89 (0.39)** 3.74 (0.30)** | -0.04 (0.02)* -1.10 (3.50) | -0.03 (0.02) [†] -0.26 (0.17) |
| IntY Mean | 3.84 (0.05)** 6.96 (0.51)** | 3.87 (0.05)** 7.15 (0.52)** | 3.87 (0.05)** 7.15 (0.52)** |
| SlpY Mean | -1.02 (0.39)* -3.86 (0.39)** | -0.03 (0.02) [†] -0.29 (0.17) [†] | -0.03 (0.02) [†] -0.30 (0.19) |
| IntX with SlpX | 0.25 (0.07)** 0.77 (0.08)** | 0.01 (0.02) 0.80 (3.29) | -0.02 (0.02) -0.20 (0.19) |
| IntY with SlpY | 0.03 (0.02) 0.20 (0.13) | -0.01 (0.01) -0.15 (0.17) | -0.01 (0.01) -0.13 (0.19) |
| IntX with IntY | -0.12 (0.04)* -0.34 (0.10)* | -0.18 (0.03)** -0.67 (0.09)** | -0.15 (0.04)** 0.44 (0.09)** |
| SlpX with SlpY | -0.13 (0.06)* -0.94 (0.05)** | -0.01 (0.00)** -3.81 (011.79) | -0.01 (0.00)* -0.90 (0.36)* |
| IntX with SlpY | -0.12 (0.06)* 0.72 (0.12)** | 0.02 (0.01)* 0.47 (0.20)* | 0.02 (0.01) 0.29 (0.19) |
| IntY with SlpX | -0.08 (0.03)* -0.28 (0.10)* | 0.03 (0.01)* 1.32 (4.09) | 0.02 (0.01) 0.25 (0.17) |
| ΔY ₂ on LVX ₁ | 0.43 (0.17)* 1.36 (0.31)** | <i>n.s.</i> | <i>n.s.</i> |
| ΔY ₃ on LVX ₂ | 0.43 (0.17)* 2.71 (1.41) [†] | <i>n.s.</i> | <i>n.s.</i> |
| ΔY ₄ on LVX ₃ | 0.43 (0.17)* | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PSI-PD} , Y _{APQ-INV} | X _{PSI-DI} , Y _{APQ-INV} | X _{PSI-DC} , Y _{APQ-INV} |
|----------------------------------|--|--|--|
| | 2.90 (1.52) [†] | | |
| ΔX_2 on LVY ₁ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX_3 on LVY ₂ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| ΔX_4 on LVY ₃ | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

Note. DISC = HIV Disclosure. CDI = Children's Depression Inventory. CBCL-Agg = Child Behavior Checklist - Aggression Subscale. CBCL-Anx = Child Behavior Checklist - Anxiety Subscale. PCC = Parent-Child Communication Scale. APQ-Pos = Alabama Parenting Questionnaire - Positive Parenting Subscale. APQ-Inv = Alabama Parenting Questionnaire - Involvement Subscale. CBQ-C = Conflict Behavior Questionnaire - Child Report. CBQ-M = Conflict Behavior Questionnaire - Mother Report. PSI-PD = Parenting Stress Index - Parental Distress Subscale. PSI-DI = Parenting Stress Index - Dysfunctional Interaction. PSI-DC = Parenting Stress Index - Difficult Child.

Int = Intercept. Slp = Slope. Δ = latent change score. LV = latent variable. Subscripts indicate timepoint (baseline, 3-month follow-up, 9-month follow-up, 15-month follow-up).

[†] $p < 0.10$; * $p < 0.05$; ** $p < 0.01$

Unstandardized coefficients displayed, with standardized coefficients beneath in *italics*. Dashed lines (--) indicates parameters that were not specified or could not be estimated due to model convergence issues.

Table 3.9 Model fit indices for bivariate cross-lagged panel models

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|------------------------|---------------------------|-------------|-------------|--------------|-----------|-------------|--------------------------------|----------|-----------------|
| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2_{M2-M1}$ | df | p |
| X_{DISC}, Y_{CDI} | Autoregressive | 0.99 | 0.04 | 32.44 | 25 | 0.15 | -- | -- | -- |
| | Y on X | 0.99 | 0.04 | 32.30 | 24 | 0.12 | 0.14 | 1 | <i>n.s.</i> |
| | X on Y | 0.99 | 0.04 | 31.96 | 24 | 0.13 | 0.48 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.98 | 0.05 | 31.83 | 23 | 0.10 | 0.61 | 2 | <i>n.s.</i> |
| X_{PCC}, Y_{CDI} | Autoregressive | 0.90 | 0.11 | 57.10 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.92 | 0.11 | 46.41 | 15 | 0.00 | 10.69 | 3 | < .05 |
| | X on Y | 0.92 | 0.11 | 49.36 | 15 | 0.00 | 7.74 | 3 | < .10 |
| | $X \longleftrightarrow Y$ | 0.93 | 0.12 | 40.68 | 12 | 0.00 | 16.42 | 6 | < .05 |
| $X_{APQ-POS}, Y_{CDI}$ | Autoregressive | 0.85 | 0.14 | 80.45 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.85 | 0.16 | 77.83 | 15 | 0.00 | 2.62 | 3 | <i>n.s.</i> |
| | X on Y | 0.85 | 0.16 | 77.95 | 15 | 0.00 | 2.50 | 3 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.85 | 0.17 | 75.11 | 12 | 0.00 | 5.34 | 6 | <i>n.s.</i> |
| $X_{APQ-INV}, Y_{CDI}$ | Autoregressive | 0.94 | 0.07 | 51.41 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.94 | 0.11 | 47.66 | 15 | 0.00 | 3.75 | 3 | <i>n.s.</i> |
| | X on Y | 0.94 | 0.11 | 46.56 | 15 | 0.00 | 4.85 | 3 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.94 | 0.12 | 43.00 | 12 | 0.00 | 8.41 | 6 | <i>n.s.</i> |
| X_{CBQ-C}, Y_{CDI} | Autoregressive | 0.79 | 0.15 | 124.81 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.84 | 0.13 | 97.53 | 24 | 0.00 | 27.28 | 1 | < .01 |
| | X on Y | 0.80 | 0.15 | 118.76 | 24 | 0.00 | 6.05 | 1 | < .05 |
| | $X \longleftrightarrow Y$ | 0.84 | 0.14 | 96.16 | 23 | 0.00 | 28.65 | 2 | < .01 |
| X_{CBQ-M}, Y_{CDI} | Autoregressive | 0.92 | 0.10 | 47.88 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.92 | 0.11 | 45.34 | 15 | 0 | 2.54 | 3 | <i>n.s.</i> |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|-----------------------------|---------------------------|-------------|-------------|--------------|-----------|-------------|--------------------------------|----------|-----------------|
| | | | | | | | $\Delta\chi^2_{M2-M1}$ | df | p |
| | X on Y | 0.93 | 0.11 | 44.59 | 15 | 0.00 | 3.29 | 3 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.92 | 0.12 | 42.06 | 12 | 0.00 | 5.82 | 6 | <i>n.s.</i> |
| | Autoregressive | 0.87 | 0.11 | 74.41 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.87 | 0.11 | 72.69 | 24 | 0.00 | 1.72 | 1 | <i>n.s.</i> |
| | X on Y | 0.87 | 0.11 | 74.32 | 24 | 0.00 | 0.09 | 1 | <i>n.s.</i> |
| X_{PSI-PD}, Y_{CDI} | $X \longleftrightarrow Y$ | 0.87 | 0.11 | 72.60 | 23 | 0.00 | 1.81 | 2 | <i>n.s.</i> |
| | Autoregressive | 0.83 | 0.13 | 96.51 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.85 | 0.12 | 86.78 | 24 | 0.00 | 9.73 | 1 | < .01 |
| | X on Y | 0.85 | 0.12 | 87.90 | 24 | 0.00 | 8.61 | 1 | < .01 |
| | $X \longleftrightarrow Y$ | 0.87 | 0.12 | 78.24 | 23 | 0.00 | 18.27 | 2 | < .01 |
| | Autoregressive | 0.88 | 0.12 | 83.68 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.88 | 0.12 | 82.70 | 24 | 0.00 | 0.98 | 1 | <i>n.s.</i> |
| | X on Y | 0.88 | 0.12 | 82.43 | 24 | 0.00 | 1.25 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.88 | 0.12 | 81.44 | 23 | 0.00 | 2.24 | 2 | <i>n.s.</i> |
| | Autoregressive | 1.00 | 0.00 | 21.91 | 25 | 0.64 | -- | -- | -- |
| | Y on X | 1.00 | 0.00 | 21.81 | 24 | 0.59 | 0.10 | 1 | <i>n.s.</i> |
| | X on Y | 1.00 | 0.00 | 20.15 | 24 | 0.69 | 1.76 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 1.00 | 0.00 | 20.07 | 23 | 0.64 | 1.84 | 2 | <i>n.s.</i> |
| | Autoregressive | 0.94 | 0.10 | 51.77 | 18 | 0.00 | | | |
| | Y on X | 0.93 | 0.12 | 51.12 | 15 | 0.00 | 0.65 | 3 | <i>n.s.</i> |
| | X on Y | 0.93 | 0.12 | 50.52 | 15 | 0.00 | 1.25 | 3 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.93 | 0.13 | 49.89 | 12 | 0.00 | 1.88 | 6 | <i>n.s.</i> |
| $X_{APQ-POS}, Y_{CBCL-AGG}$ | Autoregressive | 0.90 | 0.14 | 76.99 | 19 | 0.00 | -- | -- | -- |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|-----------------------------|---------------------------|-------------|-------------|--------------|-----------|-------------|--------------------------------|----------|-----------------|
| | | | | | | | $\Delta\chi^2_{M2-M1}$ | df | p |
| $X_{APQ-INV}, Y_{CBCL-AGG}$ | Y on X | 0.90 | 0.15 | 72.33 | 15 | 0.00 | 4.66 | 4 | <i>n.s.</i> |
| | X on Y | 0.90 | 0.15 | 70.35 | 15 | 0.00 | 6.65 | 4 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.91 | 0.16 | 65.75 | 12 | 0.00 | 11.25 | 7 | <i>n.s.</i> |
| | Autoregressive | 0.97 | 0.09 | 41.49 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.96 | 0.10 | 39.38 | 15 | 0.00 | 2.10 | 3 | <i>n.s.</i> |
| | X on Y | 0.96 | 0.09 | 37.86 | 15 | 0.00 | 3.63 | 3 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.97 | 0.11 | 35.86 | 12 | 0.00 | 5.63 | 6 | <i>n.s.</i> |
| | Autoregressive | 0.91 | 0.10 | 72.32 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.91 | 0.11 | 71.81 | 24 | 0.00 | 0.51 | 1 | <i>n.s.</i> |
| | X on Y | 0.91 | 0.11 | 72.11 | 24 | 0.00 | 0.21 | 1 | <i>n.s.</i> |
| $X_{CBQ-M}, Y_{CBCL-AGG}$ | $X \longleftrightarrow Y$ | 0.90 | 0.11 | 71.59 | 23 | 0.00 | 0.73 | 2 | <i>n.s.</i> |
| | Autoregressive | 0.98 | 0.07 | 33.72 | 18 | 0.01 | -- | -- | -- |
| | Y on X | 0.97 | 0.08 | 32.10 | 15 | 0.01 | 1.62 | 3 | <i>n.s.</i> |
| | X on Y | 0.98 | 0.08 | 30.94 | 15 | 0.01 | 2.78 | 3 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.97 | 0.09 | 28.96 | 12 | 0.00 | 4.76 | 6 | <i>n.s.</i> |
| $X_{PSI-PD}, Y_{CBCL-AGG}$ | Autoregressive | 0.88 | 0.13 | 93.93 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.88 | 0.13 | 93.85 | 24 | 0.00 | 0.08 | 1 | <i>n.s.</i> |
| | X on Y | 0.88 | 0.12 | 88.70 | 24 | 0.00 | 5.23 | 1 | < .05 |
| | $X \longleftrightarrow Y$ | 0.88 | 0.13 | 88.69 | 23 | 0.00 | 5.24 | 2 | < .10 |
| $X_{PSI-DI}, Y_{CBCL-AGG}$ | Autoregressive | 0.93 | 0.10 | 66.85 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.92 | 0.10 | 66.68 | 24 | 0.00 | 0.17 | 1 | <i>n.s.</i> |
| | X on Y | 0.93 | 0.10 | 65.29 | 24 | 0.00 | 1.56 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.93 | 0.10 | 65.22 | 23 | 0.00 | 1.63 | 2 | <i>n.s.</i> |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|---|---------------------------|-------------|-------------|---------------|-----------|-------------|--------------------------------|----------|-----------------|
| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2_{M2-M1}$ | df | p |
| $X_{\text{PSI-DC}}, Y_{\text{CBCL-AGG}}$ | Autoregressive | 0.86 | 0.15 | 129.26 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.88 | 0.15 | 112.66 | 24 | 0.00 | 16.60 | 1 | < .01 |
| | X on Y | 0.88 | 0.15 | 113.04 | 24 | 0.00 | 16.22 | 1 | < .01 |
| | $X \longleftrightarrow Y$ | 0.89 | 0.14 | 105.12 | 23 | 0.00 | 24.14 | 2 | < .01 |
| $X_{\text{DISC}}, Y_{\text{CBCL-ANX}}$ | Autoregressive | 0.96 | 0.08 | 55.98 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.96 | 0.09 | 55.98 | 24 | 0.00 | 0.00 | 1 | <i>n.s.</i> |
| | X on Y | 0.96 | 0.09 | 55.20 | 24 | 0.00 | 0.78 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.96 | 0.09 | 55.20 | 23 | 0.00 | 0.78 | 2 | <i>n.s.</i> |
| $X_{\text{PCC}}, Y_{\text{CBCL-ANX}}$ | Autoregressive | 0.89 | 0.12 | 83.50 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.89 | 0.12 | 83.06 | 24 | 0.00 | 0.44 | 1 | <i>n.s.</i> |
| | X on Y | 0.89 | 0.12 | 83.50 | 24 | 0.00 | 0.00 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.89 | 0.12 | 83.06 | 23 | 0.00 | 0.44 | 2 | <i>n.s.</i> |
| $X_{\text{APQ-POS}}, Y_{\text{CBCL-ANX}}$ | Autoregressive | 0.88 | 0.15 | 88.65 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.88 | 0.16 | 85.96 | 15 | 0.00 | 2.69 | 3 | <i>n.s.</i> |
| | X on Y | 0.88 | 0.16 | 84.61 | 15 | 0 | 4.04 | 3 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.88 | 0.18 | 81.89 | 12 | 0.00 | 6.76 | 6 | <i>n.s.</i> |
| $X_{\text{APQ-INV}}, Y_{\text{CBCL-ANX}}$ | Autoregressive | 0.95 | 0.11 | 53.86 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.95 | 0.12 | 51.54 | 15 | 0.00 | 2.32 | 3 | <i>n.s.</i> |
| | X on Y | 0.94 | 0.12 | 52.69 | 15 | 0.00 | 1.17 | 3 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.94 | 0.14 | 50.40 | 12 | 0.00 | 3.46 | 6 | <i>n.s.</i> |
| $X_{\text{CBQ-C}}, Y_{\text{CBCL-ANX}}$ | Autoregressive | 0.86 | 0.13 | 98.00 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.86 | 0.13 | 97.52 | 24 | 0.00 | 0.48 | 1 | <i>n.s.</i> |
| | X on Y | 0.86 | 0.13 | 96.65 | 24 | 0.00 | 1.35 | 1 | <i>n.s.</i> |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|----------------------------|---|-------------|-------------|---------------|-----------|-------------|--------------------------------|----------|-----------------|
| | | | | | | | $\Delta\chi^2_{M2-M1}$ | df | p |
| $X_{CBQ-M}, Y_{CBCL-ANX}$ | $X \longleftrightarrow Y$ | 0.86 | 0.14 | 96.13 | 23 | 0.00 | 1.87 | 2 | <i>n.s.</i> |
| | Autoregressive | 0.95 | 0.10 | 49.98 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.94 | 0.12 | 49.47 | 15 | 0.00 | 0.51 | 3 | <i>n.s.</i> |
| | X on Y | 0.95 | 0.11 | 47.16 | 15 | 0.00 | 2.82 | 3 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.94 | 0.13 | 46.85 | 12 | 0.00 | 3.13 | 6 | <i>n.s.</i> |
| $X_{PSI-PD}, Y_{CBCL-ANX}$ | Autoregressive | 0.86 | 0.14 | 104.80 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.86 | 0.14 | 104.59 | 24 | 0.00 | 0.21 | 1 | <i>n.s.</i> |
| | X on Y | 0.87 | 0.13 | 98.02 | 24 | 0.00 | 6.78 | 1 | < .01 |
| | $X \longleftrightarrow Y$ | 0.87 | 0.14 | 98.00 | 23 | 0.00 | 6.80 | 2 | < .05 |
| $X_{PSI-DI}, Y_{CBCL-ANX}$ | Autoregressive | 0.88 | 0.13 | 94.26 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.88 | 0.13 | 93.95 | 24 | 0.00 | 0.31 | 1 | <i>n.s.</i> |
| | X on Y | 0.89 | 0.12 | 86.68 | 24 | 0.00 | 7.58 | 1 | < .01 |
| | $X \longleftrightarrow Y$ | 0.89 | 0.13 | 86.60 | 23 | 0.00 | 7.66 | 2 | < .05 |
| $X_{PSI-DC}, X_{CBCL-ANX}$ | Autoregressive | 0.84 | 0.16 | 134.39 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.86 | 0.15 | 119.82 | 24 | 0.00 | 14.57 | 1 | < .01 |
| | X on Y | 0.86 | 0.16 | 124.36 | 24 | 0.00 | 10.03 | 1 | < .01 |
| | X \longleftrightarrow Y | 0.87 | 0.15 | 114.07 | 23 | 0.00 | 20.32 | 2 | < .01 |
| X_{DISC}, Y_{PCC} | Autoregressive | 0.96 | 0.08 | 51.00 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.96 | 0.08 | 50.84 | 24 | 0.00 | 0.16 | 1 | <i>n.s.</i> |
| | X on Y | 0.96 | 0.08 | 50.15 | 24 | 0.00 | 0.85 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.96 | 0.08 | 49.99 | 23 | 0.00 | 1.01 | 2 | <i>n.s.</i> |
| X_{PSI-PD}, Y_{PCC} | Autoregressive | 0.84 | 0.12 | 90.67 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.84 | 0.13 | 90.14 | 24 | 0.00 | 0.53 | 1 | <i>n.s.</i> |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|---------------------------|---------------------------|-------------|-------------|--------------|-----------|-------------|--------------------------------|------|-------------|
| | | | | | | | $\Delta\chi^2_{M2-M1}$ | df | p |
| | Y on X | 0.86 | 0.14 | 104.74 | 24 | 0.00 | 0.02 | 1 | <i>n.s.</i> |
| | X on Y | 0.86 | 0.14 | 104.68 | 24 | 0.00 | 0.08 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.86 | 0.14 | 104.66 | 23 | 0.00 | 0.1 | 2 | <i>n.s.</i> |
| $X_{DISC}, Y_{APQ-INV}$ | Autoregressive | 0.97 | 0.07 | 47.72 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.97 | 0.07 | 46.83 | 24 | 0.00 | 0.89 | 1 | <i>n.s.</i> |
| | X on Y | 0.97 | 0.07 | 47.08 | 24 | 0.00 | 0.64 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.97 | 0.08 | 46.19 | 23 | 0.00 | 1.53 | 2 | <i>n.s.</i> |
| $X_{PSI-PD}, Y_{APQ-INV}$ | Autoregressive | 0.89 | 0.14 | 80.2 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.89 | 0.15 | 80 | 17 | 0.00 | 0.2 | 1 | <i>n.s.</i> |
| | X on Y | 0.89 | 0.15 | 79.29 | 17 | 0.00 | 0.91 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.89 | 0.15 | 79.03 | 16 | 0.00 | 1.17 | 2 | <i>n.s.</i> |
| $X_{PSI-DI}, Y_{APQ-INV}$ | Autoregressive | 0.93 | 0.11 | 59.27 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.93 | 0.12 | 57.72 | 17 | 0.00 | 1.55 | 1 | <i>n.s.</i> |
| | X on Y | 0.93 | 0.12 | 57.24 | 17 | 0.00 | 2.03 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.93 | 0.12 | 55.94 | 16 | 0.00 | 3.33 | 2 | <i>n.s.</i> |
| $X_{PSI-DC}, Y_{APQ-INV}$ | Autoregressive | 0.92 | 0.13 | 74.05 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.92 | 0.14 | 74.00 | 17 | 0.00 | 0.05 | 1 | <i>n.s.</i> |
| | X on Y | 0.92 | 0.14 | 73.35 | 17 | 0.00 | 0.70 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.93 | 0.14 | 73.31 | 16 | 0.00 | 0.74 | 2 | <i>n.s.</i> |
| X_{DISC}, Y_{CBQ-C} | Autoregressive | 0.94 | 0.09 | 60.92 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.94 | 0.09 | 60.81 | 24 | 0.00 | 0.11 | 1 | <i>n.s.</i> |
| | X on Y | 0.94 | 0.09 | 59.47 | 24 | 0.00 | 1.45 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.94 | 0.10 | 59.37 | 23 | 0.00 | 1.55 | 2 | <i>n.s.</i> |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|---------------------------------------|---------------------------|-------------|-------------|---------------|-----------|-------------|--------------------------------|----------|-----------------|
| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2_{M2-M1}$ | df | p |
| $X_{\text{PSI-PD}}, Y_{\text{CBQ-C}}$ | Autoregressive | 0.78 | 0.14 | 112.39 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.78 | 0.15 | 111.30 | 24 | 0.00 | 1.09 | 1 | <i>n.s.</i> |
| | X on Y | 0.79 | 0.14 | 111.07 | 24 | 0.00 | 1.32 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.79 | 0.15 | 109.94 | 23 | 0.00 | 2.45 | 2 | <i>n.s.</i> |
| $X_{\text{PSI-DI}}, Y_{\text{CBQ-C}}$ | Autoregressive | 0.81 | 0.14 | 106.96 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.81 | 0.14 | 103.86 | 24 | 0.00 | 3.10 | 1 | < .10 |
| | X on Y | 0.81 | 0.14 | 104.73 | 24 | 0.00 | 2.23 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.82 | 0.14 | 101.86 | 23 | 0.00 | 5.1 | 2 | < .10 |
| $X_{\text{PSI-DC}}, Y_{\text{CBQ-C}}$ | Autoregressive | 0.84 | 0.13 | 102.15 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.85 | 0.14 | 101.02 | 24 | 0.00 | 1.13 | 1 | <i>n.s.</i> |
| | X on Y | 0.84 | 0.14 | 101.85 | 24 | 0.00 | 0.30 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.84 | 0.14 | 100.75 | 23 | 0.00 | 1.40 | 2 | <i>n.s.</i> |
| $X_{\text{DISC}}, Y_{\text{CBQ-M}}$ | Autoregressive | 0.99 | 0.04 | 32.66 | 25 | 0.14 | -- | -- | -- |
| | Y on X | 0.99 | 0.04 | 29.47 | 24 | 0.20 | 3.19 | 1 | < .10 |
| | X on Y | 0.99 | 0.04 | 32.03 | 24 | 0.13 | 0.63 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.99 | 0.04 | 28.81 | 23 | 0.18 | 3.85 | 2 | <i>n.s.</i> |
| $X_{\text{PSI-PD}}, Y_{\text{CBQ-M}}$ | Autoregressive | 0.89 | 0.13 | 73.06 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.89 | 0.14 | 72.39 | 17 | 0.00 | 0.67 | 1 | <i>n.s.</i> |
| | X on Y | 0.90 | 0.13 | 66.64 | 17 | 0.00 | 6.42 | 1 | < .05 |
| | $X \longleftrightarrow Y$ | 0.9 | 0.13 | 66.49 | 16 | 0.00 | 6.57 | 2 | < .05 |
| $X_{\text{PSI-DI}}, Y_{\text{CBQ-M}}$ | Autoregressive | 0.93 | 0.12 | 61.31 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.91 | 0.12 | 61.31 | 17 | 0.00 | 0.00 | 1 | <i>n.s.</i> |
| | X on Y | 0.92 | 0.12 | 56.62 | 17 | 0.00 | 4.69 | 1 | < .05 |

| | | | | | | | $\Delta\chi^2$ Difference Test | | |
|-------------------------|---|-------------|-------------|--------------|-----------|-------------|--------------------------------|----------|-----------------|
| | | CFI | RMSEA | χ^2 | df | p | $\Delta\chi^2_{M2-M1}$ | df | p |
| X_{PSI-DC}, Y_{CBQ-M} | $X \longleftrightarrow Y$ | 0.92 | 0.12 | 56.50 | 16 | 0.00 | 4.81 | 2 | <i>n.s.</i> |
| | Autoregressive | 0.93 | 0.12 | 66.50 | 18 | 0.00 | -- | -- | -- |
| | Y on X | 0.94 | 0.12 | 56.2 | 17 | 0.00 | 10.30 | 1 | < .01 |
| | X on Y | 0.94 | 0.11 | 55.2 | 17 | 0.00 | 11.30 | 1 | < .01 |
| | $X \longleftrightarrow Y$ | 0.95 | 0.11 | 50.33 | 16 | 0.00 | 16.17 | 2 | < .01 |
| X_{DISC}, Y_{PSI-PD} | Autoregressive | 0.94 | 0.10 | 65.05 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.94 | 0.10 | 62.52 | 24 | 0.00 | 2.53 | 1 | <i>n.s.</i> |
| | X on Y | 0.94 | 0.10 | 63.83 | 24 | 0.00 | 1.22 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.94 | 0.10 | 61.30 | 23 | 0.00 | 3.75 | 2 | <i>n.s.</i> |
| X_{DISC}, Y_{PSI-DI} | Autoregressive | 0.94 | 0.09 | 61.00 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.94 | 0.09 | 60.95 | 24 | 0.00 | 0.05 | 1 | <i>n.s.</i> |
| | X on Y | 0.94 | 0.09 | 60.18 | 24 | 0.00 | 0.82 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.94 | 0.1 | 60.13 | 23 | 0.00 | 0.87 | 2 | <i>n.s.</i> |
| X_{DISC}, Y_{PSI-DC} | Autoregressive | 0.95 | 0.09 | 62.82 | 25 | 0.00 | -- | -- | -- |
| | Y on X | 0.95 | 0.09 | 61.00 | 24 | 0.00 | 1.82 | 1 | <i>n.s.</i> |
| | X on Y | 0.95 | 0.1 | 61.79 | 24 | 0.00 | 1.03 | 1 | <i>n.s.</i> |
| | $X \longleftrightarrow Y$ | 0.95 | 0.1 | 59.98 | 23 | 0.00 | 2.84 | 2 | <i>n.s.</i> |

Note. DISC = HIV Disclosure. CDI = Children's Depression Inventory. CBCL-Agg = Child Behavior Checklist - Aggression Subscale. CBCL-Anx = Child Behavior Checklist - Anxiety Subscale. PCC = Parent-Child Communication Scale. APQ-Pos = Alabama Parenting Questionnaire - Positive Parenting Subscale. APQ-Inv = Alabama Parenting Questionnaire - Involvement Subscale. CBQ-C = Conflict Behavior Questionnaire - Child Report. CBQ-M = Conflict Behavior Questionnaire - Mother Report. PSI-PD = Parenting Stress Index - Parental Distress Subscale. PSI-DI = Parenting Stress Index - Dysfunctional Interaction. PSI-DC = Parenting Stress Index - Difficult Child.

Results in **bold** indicate retained models.

Table 3.10 Standardized parameter estimates for bivariate cross-lagged panel models.

| | X _{DISC} , Y _{CDI} | X _{PCC} , Y _{CDI} | X _{APQ-POS} , Y _{CDI} | X _{APQ-INV} , Y _{CDI} | X _{CBQ-C} , Y _{CDI} | X _{CBQ-M} , Y _{CDI} |
|------------|--------------------------------------|-------------------------------------|---|---|---------------------------------------|---------------------------------------|
| X2 on X1 | 0.55 (0.03)** | 0.55 (0.04)** | 0.55 (0.06)** | 0.70 (0.04)** | 0.49 (0.04)** | 0.61 (0.05)** |
| X3 on X2 | 0.87 (0.03)** | 0.61 (0.05)** | 0.72 (0.04)** | 0.83 (0.03)** | 0.52 (0.05)** | 0.73 (0.04)** |
| X4 on X3 | 0.88 (0.02)** | 0.56 (0.05)** | 0.73 (0.05)** | 0.78 (0.04)** | 0.59 (0.05)** | 0.64 (0.06)** |
| Y2 on Y1 | 0.56 (0.04)** | 0.49 (0.04)** | 0.58 (0.06)** | 0.58 (0.05)** | 0.37 (0.04)** | 0.56 (0.06)** |
| Y3 on Y2 | 0.68 (0.04)** | 0.60 (0.05)** | 0.66 (0.05)** | 0.66 (0.05)** | 0.43 (0.05)** | 0.66 (0.05)** |
| Y4 on Y3 | 0.52 (0.05)** | 0.46 (0.05)** | 0.53 (0.07)** | 0.53 (0.07)** | 0.39 (0.05)** | 0.53 (0.07)** |
| X1 with Y1 | 0.07 (0.03)* | -0.44 (0.06)** | -0.17 (0.07)* | -0.13 (0.08) [†] | -0.35 (0.04)** | -0.14 (0.08) [†] |
| X2 with Y2 | 0.06 (0.03)* | -0.24 (0.08)* | -0.09 (0.09) | -0.08 (0.09) | -0.43 (0.04)** | -0.14 (0.08) [†] |
| X3 with Y3 | 0.13 (0.06)* | -0.14 (0.09) | -0.09 (0.09) | -0.09 (0.09) | -0.53 (0.04)** | 0.03 (0.10) |
| X4 with Y4 | 0.10 (0.05)* | -0.48 (0.08)** | -0.04 (0.10) | -0.04 (0.10) | -0.63 (0.04)** | 0.02 (0.10) |
| Y2 on X1 | <i>n.s.</i> | -0.11 (0.04)* | <i>n.s.</i> | <i>n.s.</i> | -0.22 (0.04)** | <i>n.s.</i> |
| Y3 on X2 | <i>n.s.</i> | -0.14 (0.05)* | <i>n.s.</i> | <i>n.s.</i> | -0.25 (0.05)** | <i>n.s.</i> |
| Y4 on X3 | <i>n.s.</i> | -0.12 (0.04)* | <i>n.s.</i> | <i>n.s.</i> | -0.25 (0.05)** | <i>n.s.</i> |
| X2 on Y1 | <i>n.s.</i> | -0.09 (0.04)* | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X3 on Y2 | <i>n.s.</i> | -0.10 (0.05)* | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X4 on Y3 | <i>n.s.</i> | -0.08 (0.04)* | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PSI-PD} , Y _{CDI} | X _{PSI-DI} , Y _{CDI} | X _{PSI-DC} , Y _{CDI} | X _{DISC} , Y _{CBCL-AGG} | X _{PCC} , Y _{CBCL-AGG} | X _{APQ-POS} , Y _{CBCL-AGG} |
|------------|--|--|--|---|--|--|
| X2 on X1 | 0.63 (0.04)** | 0.62 (0.04)** | 0.68 (0.03)** | 0.54 (0.03)** | 0.61 (0.05)** | 0.55 (0.06)** |
| X3 on X2 | 0.62 (0.05)** | 0.64 (0.05)** | 0.77 (0.03)** | 0.86 (0.02)** | 0.68 (0.05)** | 0.72 (0.04)** |
| X4 on X3 | 0.56 (0.05)** | 0.59 (0.06)** | 0.77 (0.04)** | 0.87 (0.02)** | 0.60 (0.06)** | 0.73 (0.04)** |
| Y2 on Y1 | 0.56 (0.04)** | 0.50 (0.04)** | 0.55 (0.04)** | 0.72 (0.03)** | 0.72 (0.04)** | 0.73 (0.04)** |
| Y3 on Y2 | 0.67 (0.04)** | 0.61 (0.05)** | 0.67 (0.04)** | 0.76 (0.03)** | 0.76 (0.04)** | 0.76 (0.04)** |
| Y4 on Y3 | 0.52 (0.05)** | 0.44 (0.05)** | 0.51 (0.05)** | 0.78 (0.04)** | 0.79 (0.03)** | 0.79 (0.04)** |
| X1 with Y1 | 0.04 (0.03) | 0.05 (0.03) | 0.02 (0.03) | 0.09 (0.03)* | -0.10 (0.08) | -0.11 (0.08) |
| X2 with Y2 | 0.06 (0.05) | 0.07 (0.04) | 0.04 (0.04) | 0.08 (0.03)* | -0.02 (0.09) | -0.08 (0.09) |
| X3 with Y3 | 0.08 (0.06) | 0.12 (0.07) [†] | 0.06 (0.06) | 0.13 (0.05)* | 0.01 (0.09) | -0.05 (0.09) |
| X4 with Y4 | 0.05 (0.04) | 0.08 (0.05) [†] | 0.05 (0.05) | 0.14 (0.05)* | -0.16 (0.10) | -0.09 (0.10) |
| Y2 on X1 | <i>n.s.</i> | 0.10 (0.07)* | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| Y3 on X2 | <i>n.s.</i> | 0.03 (0.08) | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| Y4 on X3 | <i>n.s.</i> | 0.24 (0.07)* | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X2 on Y1 | <i>n.s.</i> | 0.03 (0.07) | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X3 on Y2 | <i>n.s.</i> | 0.26 (0.06)** | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X4 on Y3 | <i>n.s.</i> | -0.01 (0.08) | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{APQ-INV} , Y _{CBCL-AGG} | X _{CBQ-C} , Y _{CBCL-AGG} | X _{CBQ-M} , Y _{CBCL-AGG} | X _{PSI-PD} , Y _{CBCL-AGG} | X _{PSI-DI} , Y _{CBCL-AGG} | X _{PSI-DC} , Y _{CBCL-AGG} |
|------------|---|---|---|--|--|--|
| X2 on X1 | 0.70 (0.04)** | 0.54 (0.04)** | 0.61 (0.05)** | 0.57 (0.04)** | 0.62 (0.04)** | 0.59 (0.04)** |
| X3 on X2 | 0.83 (.03)** | 0.60 (0.05)** | 0.72 (0.04)** | 0.57 (0.05)** | 0.67 (0.05)** | 0.67 (0.05)** |
| X4 on X3 | 0.78 (0.03)** | 0.57 (0.05)** | 0.62 (0.06)** | 0.51 (0.05)** | 0.62 (0.05)** | 0.65 (0.06)** |
| Y2 on Y1 | 0.72 (0.04)** | 0.71 (0.03)** | 0.70 (0.04)** | 0.70 (0.03)** | 0.70 (0.03)** | 0.61 (0.04)** |
| Y3 on Y2 | 0.75 (0.04)** | 0.76 (0.03)** | 0.74 (0.04)** | 0.75 (0.03)** | 0.74 (0.03)** | 0.65 (0.05)** |
| Y4 on Y3 | 0.79 (0.03)** | 0.78 (0.03)** | 0.79 (0.03)** | 0.77 (0.04)** | 0.77 (0.03)** | 0.67 (0.05)** |
| X1 with Y1 | -0.09 (0.08) | -0.08 (0.03)* | -0.66 (0.04)** | 0.46 (0.06)** | 0.16 (0.03)** | 0.64 (0.05)** |
| X2 with Y2 | -0.20 (0.08)* | -0.13 (0.04)* | -0.51 (0.07)** | 0.32 (0.08)** | 0.27 (0.05)** | 0.46 (0.07)** |
| X3 with Y3 | -0.16 (0.09) [†] | -0.16 (0.05)* | -0.51 (0.07)** | 0.11 (0.09) | 0.32 (0.05)** | 0.43 (0.07)** |
| X4 with Y4 | -0.13 (0.10) | -0.18 (0.06)* | -0.49 (0.08)** | 0.21 (0.09)* | 0.32 (0.05)** | 0.34 (0.09)** |
| Y2 on X1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | 0.14 (0.05)* |
| Y3 on X2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | 0.15 (0.05)* |
| Y4 on X3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | 0.14 (0.05)* |
| X2 on Y1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | 0.09 (0.04) [†] | <i>n.s.</i> | 0.11 (0.04)* |
| X3 on Y2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | 0.09 (0.05) [†] | <i>n.s.</i> | 0.13 (0.05)* |
| X4 on Y3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | 0.08 (0.04) [†] | <i>n.s.</i> | 0.14 (0.05)* |

| | X _{DISC} , Y _{CBCL-ANX} | X _{PCC} , Y _{CBCL-ANX} | X _{APQ-POS} , Y _{CBCL-ANX} | X _{APQ-INV} , Y _{CBCL-ANX} | X _{CBQ-C} , Y _{CBCL-ANX} | X _{CBQ-M} , Y _{CBCL-ANX} |
|------------|--|---|---|---|---|---|
| X2 on X1 | 0.54 (0.03)** | 0.62 (0.04)** | 0.55 (0.06)** | 0.71 (0.04)** | 0.53 (0.04)** | 0.61 (0.05)** |
| X3 on X2 | 0.86 (0.02)** | 0.67 (0.04)** | 0.72 (0.04)** | 0.83 (0.03)** | 0.61 (0.05)** | 0.73 (0.04)** |
| X4 on X3 | 0.88 (0.02)** | 0.61 (0.05)** | 0.73 (0.05)** | 0.77 (0.04)** | 0.56 (0.05)** | 0.64 (0.06)** |
| Y2 on Y1 | 0.71 (0.03)** | 0.71 (0.03)** | 0.65 (0.05)** | 0.65 (0.05)** | 0.70 (0.03)** | 0.63 (0.05)** |
| Y3 on Y2 | 0.78 (0.04)** | 0.79 (0.03)** | 0.81 (0.03)** | 0.81 (0.03)** | 0.79 (0.03)** | 0.80 (0.03)** |
| Y4 on Y3 | 0.75 (0.04)** | 0.75 (0.04)** | 0.76 (0.04)** | 0.76 (0.04)** | 0.75 (0.04)** | 0.75 (0.04)** |
| X1 with Y1 | 0.06 (0.03) [†] | 0.00 (0.02) | -0.07 (0.08) | -0.09 (0.08) | -0.07 (0.03)* | -0.38 (0.07)** |
| X2 with Y2 | 0.05 (0.03) [†] | -0.01 (0.04) | 0.00 (0.08) | -0.09 (0.08) | -0.10 (0.04)* | -0.40 (0.07)** |
| X3 with Y3 | 0.10 (0.05) [†] | -0.01 (0.06) | -0.09 (0.10) | -0.15 (0.09) [†] | -0.16 (0.06)* | -0.28 (0.08)* |
| X4 with Y4 | 0.09 (0.05) [†] | -0.01 (0.05) | 0.09 (0.10) | -0.02 (0.10) | -0.15 (0.06)* | -0.13 (0.10) |
| Y2 on X1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| Y3 on X2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| Y4 on X3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X2 on Y1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X3 on Y2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X4 on Y3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PSI-PD} , Y _{CBCL-ANX} | X _{PSI-DI} , Y _{CBCL-ANX} | X _{PSI-DC} , X _{CBCL-ANX} | X _{DISC} , Y _{PCC} | X _{PSI-PD} , Y _{PCC} | X _{PSI-DI} , Y _{PCC} |
|------------|--|--|--|--------------------------------------|--|--|
| X2 on X1 | 0.55 (0.04)** | 0.59 (0.04)** | 0.60 (0.04)** | 0.53 (0.03)** | 0.62 (0.04)** | 0.64 (0.04)** |
| X3 on X2 | 0.53 (0.05)** | 0.63 (0.05)** | 0.67 (0.05)** | 0.87 (0.02)** | 0.62 (0.05)** | 0.68 (0.05)** |
| X4 on X3 | 0.49 (0.05)** | 0.58 (0.05)** | 0.66 (0.05)** | 0.87 (0.02)** | 0.57 (0.05)** | 0.63 (0.05)** |
| Y2 on Y1 | 0.70 (0.03)** | 0.70 (0.03)** | 0.62 (0.04)** | 0.62 (0.04)** | 0.62 (0.04)** | 0.61 (0.04)** |
| Y3 on Y2 | 0.79 (0.03)** | 0.79 (0.03)** | 0.68 (0.05)** | 0.67 (0.04)** | 0.67 (0.04)** | 0.66 (0.04)** |
| Y4 on Y3 | 0.74 (0.04)** | 0.74 (0.04)** | 0.64 (0.04)** | 0.61 (0.05)** | 0.60 (0.05)** | 0.59 (0.05)** |
| X1 with Y1 | 0.41 (0.06)** | 0.36 (0.07)** | 0.47 (0.06)** | -0.03 (0.04) | -0.03 (0.03) | -0.12 (0.03)** |
| X2 with Y2 | 0.24 (0.08)* | 0.23 (0.08)* | 0.48 (0.07)** | -0.03 (0.03) | -0.05 (0.05) | -0.20 (0.05)** |
| X3 with Y3 | 0.28 (0.08)* | 0.21 (0.09)* | 0.37 (0.08)** | -0.05 (0.06) | -0.05 (0.06) | -0.26 (0.06)** |
| X4 with Y4 | 0.16 (0.10) [†] | 0.09 (0.10) | 0.07 (0.10) | -0.04 (0.05) | -0.04 (0.04) | -0.22 (0.05)** |
| Y2 on X1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| Y3 on X2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| Y4 on X3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X2 on Y1 | 0.14 (0.05)* | 0.13 (0.04)* | 0.12 (0.04)* | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X3 on Y2 | 0.15 (0.05)* | 0.14 (0.05)* | 0.13 (0.04)* | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X4 on Y3 | 0.12 (0.04)* | 0.13 (0.04)* | 0.13 (0.04)* | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PSI-DC} , Y _{PCC} | X _{DISC} , Y _{APQ-POS} | X _{PSI-PD} , Y _{APQ-POS} | X _{PSI-DI} , Y _{APQ-POS} | X _{PSI-DC} , Y _{APQ-POS} | X _{DISC} , Y _{APQ-INV} |
|------------|--|--|--|--|--|--|
| X2 on X1 | 0.67 (0.03)** | 0.55 (0.03)** | 0.62 (0.04)** | 0.63 (0.04)** | 0.67 (0.03)** | 0.54 (0.03)** |
| X3 on X2 | 0.77 (0.03)** | 0.87 (0.02)** | 0.62 (0.04)** | 0.65 (0.05)** | 0.77 (0.03)** | 0.86 (0.02)** |
| X4 on X3 | 0.77 (0.04)** | 0.87 (0.02)** | 0.56 (0.05)** | 0.60 (0.05)** | 0.76 (0.04)** | 0.87 (0.02)** |
| Y2 on Y1 | 0.61 (0.04)** | 0.61 (0.04)** | 0.61 (0.04)** | 0.60 (0.04)** | 0.60 (0.04)** | 0.76 (0.03)** |
| Y3 on Y2 | 0.67 (0.04)** | 0.70 (0.04)** | 0.69 (0.04)** | 0.68 (0.04)** | 0.70 (0.04)** | 0.83 (0.03)** |
| Y4 on Y3 | 0.60 (0.05)** | 0.71 (0.04)** | 0.71 (0.04)** | 0.70 (0.04)** | 0.70 (0.04)** | 0.76 (0.04)** |
| X1 with Y1 | -0.08 (0.03)* | 0.04 (0.04) | -0.11 (0.03)* | -0.17 (0.03)** | -0.13 (0.03)** | -0.01 (0.03) |
| X2 with Y2 | -0.12 (0.04)* | 0.03 (0.03) | -0.16 (0.05)* | -0.26 (0.05) | -0.18 (0.04)** | -0.01 (0.03) |
| X3 with Y3 | -0.17 (0.06)* | 0.06 (0.05) | -0.18 (0.05)** | -0.31 (0.05)** | -0.26 (0.05)** | -0.02 (0.06) |
| X4 with Y4 | -0.17 (0.05)* | 0.06 (0.05) | -0.17 (0.05)** | -0.31 (0.05)** | -0.28 (0.06)** | -0.01 (0.05) |
| Y2 on X1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| Y3 on X2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| Y4 on X3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X2 on Y1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X3 on Y2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X4 on Y3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PSI-PD} , Y _{APQ-INV} | X _{PSI-DI} , Y _{APQ-INV} | X _{PSI-DC} , Y _{APQ-INV} | X _{DISC} , Y _{CBQ-C} | X _{PSI-PD} , Y _{CBQ-C} | X _{PSI-DI} , Y _{CBQ-C} |
|------------|--|--|--|--|--|--|
| X2 on X1 | 0.59 (0.05)** | 0.54 (0.06)** | 0.63 (0.05)** | 0.53 (0.03)** | 0.62 (0.04)** | 0.64 (0.04)** |
| X3 on X2 | 0.64 (0.05)** | 0.74 (0.04)** | 0.76 (0.04)** | 0.87 (0.02)** | 0.61 (0.05)** | 0.70 (0.05)** |
| X4 on X3 | 0.62 (0.06)** | 0.67 (0.05)** | 0.79 (0.04)** | 0.88 (0.02)** | 0.55 (0.05)** | 0.64 (0.05)** |
| Y2 on Y1 | 0.70 (0.04)** | 0.70 (0.04)** | 0.71 (0.04)** | 0.54 (0.04)** | 0.55 (0.04)** | 0.48 (0.04)** |
| Y3 on Y2 | 0.83 (0.03)** | 0.83 (0.03)** | 0.83 (0.03)** | 0.61 (0.05)** | 0.61 (0.05)** | 0.53 (0.05)** |
| Y4 on Y3 | 0.77 (0.04)** | 0.77 (0.04)** | 0.77 (0.04)** | 0.57 (0.05)** | 0.56 (0.05)** | 0.50 (0.05)** |
| X1 with Y1 | -0.31 (0.07)** | -0.43 (0.06)** | -0.36 (0.07)** | -0.04 (0.04) | -0.07 (0.03)* | -0.15 (0.07)* |
| X2 with Y2 | -0.34 (0.08)** | -0.34 (0.07)** | -0.25 (0.08)** | -0.03 (0.03) | -0.11 (0.05)* | -0.31 (0.08)** |
| X3 with Y3 | -0.12 (0.09) | -0.02 (0.09) | -0.20 (0.09)* | -0.06 (0.05) | -0.13 (0.06)* | -0.24 (0.08)** |
| X4 with Y4 | -0.08 (0.10) | -0.15 (0.10) | -0.15 (0.10) | -0.06 (0.05) | -0.11 (0.05)* | 0.15 (0.10) |
| Y2 on X1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | -0.11 (0.04)* |
| Y3 on X2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | -0.12 (0.05)* |
| Y4 on X3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | -0.12 (0.05)* |
| X2 on Y1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X3 on Y2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X4 on Y3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

| | X _{PSI-DC} , Y _{CBQ-C} | X _{DISC} , Y _{CBQ-M} | X _{PSI-PD} , Y _{CBQ-M} | X _{PSI-DI} , Y _{CBQ-M} | X _{PSI-DC} , Y _{CBQ-M} | X _{PSI-DC} , Y _{CBQ-C} |
|------------|--|--|--|--|--|--|
| X2 on X1 | 0.67 (0.03)** | 0.53 (0.03)** | 0.55 (0.04)** | 0.58 (0.04)** | 0.60 (0.04)** | 0.67 (0.03)** |
| X3 on X2 | 0.77 (0.03)** | 0.85 (0.02)** | 0.54 (0.05)** | 0.63 (0.05)** | 0.68 (0.05)** | 0.77 (0.03)** |
| X4 on X3 | 0.76 (0.04)** | 0.85 (0.03)** | 0.50 (0.05)** | 0.58 (0.05)** | 0.68 (0.05)** | 0.76 (0.04)** |
| Y2 on Y1 | 0.53 (0.04)** | 0.63 (0.04)** | 0.64 (0.04)** | 0.64 (0.04)** | 0.57 (0.05)** | 0.53 (0.04)** |
| Y3 on Y2 | 0.60 (0.05)** | 0.68 (0.04)** | 0.69 (0.04)** | 0.69 (0.04)** | 0.61 (0.06)** | 0.60 (0.05)** |
| Y4 on Y3 | 0.55 (0.05)** | 0.59 (0.05)** | 0.61 (0.05)** | 0.61 (0.05)** | 0.55 (0.06)** | 0.55 (0.05)** |
| X1 with Y1 | -0.06 (0.03)* | -0.08 (0.04)* | -0.50 (0.06)** | -0.60 (0.05)** | -0.70 (0.04)** | -0.06 (0.03)* |
| X2 with Y2 | -0.09 (0.04)* | -0.07 (0.03)* | -0.48 (0.07)** | -0.40 (0.07)** | -0.53 (0.06)** | -0.09 (0.04)* |
| X3 with Y3 | -0.13 (0.06)* | -0.13 (0.06)* | -0.12 (0.09) | -0.18 (0.09)* | -0.40 (0.08)** | -0.13 (0.06)* |
| X4 with Y4 | -0.14 (0.06)* | -0.11 (0.05)* | -0.37 (0.08)** | -0.43 (0.08)** | -0.59 (0.06)** | -0.14 (0.06)* |
| Y2 on X1 | <i>n.s.</i> | -0.05 (0.02) [†] | <i>n.s.</i> | <i>n.s.</i> | -0.10 (0.05)* | <i>n.s.</i> |
| Y3 on X2 | <i>n.s.</i> | -0.09 (0.05) [†] | <i>n.s.</i> | <i>n.s.</i> | -0.12 (0.06)* | <i>n.s.</i> |
| Y4 on X3 | <i>n.s.</i> | -0.09 (0.05) [†] | <i>n.s.</i> | <i>n.s.</i> | -0.11 (0.05)* | <i>n.s.</i> |
| X2 on Y1 | <i>n.s.</i> | <i>n.s.</i> | -0.12 (0.05)* | -0.11 (0.04)* | -0.11 (0.04)* | <i>n.s.</i> |
| X3 on Y2 | <i>n.s.</i> | <i>n.s.</i> | -0.12 (0.05)* | -0.12 (0.05)* | -0.12 (0.05)* | <i>n.s.</i> |
| X4 on Y3 | <i>n.s.</i> | <i>n.s.</i> | -0.10 (0.04)* | -0.11 (0.04)* | -0.12 (0.05)* | <i>n.s.</i> |

| | X _{DISC} , Y _{PSI-PD} | X _{DISC} , Y _{PSI-DI} | X _{DISC} , Y _{PSI-DC} |
|------------|---|---|---|
| X2 on X1 | 0.55 (0.03)** | 0.54 (0.03)** | 0.54 (0.03)** |
| X3 on X2 | 0.87 (0.02)** | 0.87 (0.02)** | 0.86 (0.02)** |
| X4 on X3 | 0.88 (0.02)** | 0.87 (0.02)** | 0.87 (0.02)** |
| Y2 on Y1 | 0.63 (0.04)** | 0.64 (0.04)** | 0.68 (0.03)** |
| Y3 on Y2 | 0.63 (0.05)** | 0.70 (0.05)** | 0.77 (0.03)** |
| Y4 on Y3 | 0.56 (0.05)** | 0.64 (0.05)** | 0.77 (0.04)** |
| X1 with Y1 | -0.06 (0.04) | 0.02 (0.04) | 0.00 (0.03) |
| X2 with Y2 | -0.05 (0.04) | 0.01 (0.03) | 0.00 (0.03) |
| X3 with Y3 | -0.09 (0.06) | 0.03 (0.06) | 0.00 (0.05) |
| X4 with Y4 | -0.07 (0.05) | 0.02 (0.05) | 0.00 (0.06) |
| Y2 on X1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| Y3 on X2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| Y4 on X3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X2 on Y1 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X3 on Y2 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |
| X4 on Y3 | <i>n.s.</i> | <i>n.s.</i> | <i>n.s.</i> |

Note. Standardized estimates are shown, with standard errors in parentheses: i.e., Est (SE).

* $p < 0.05$; ** $p < 0.001$; † $p < 0.10$; *n.s.* indicates nonsignificant paths that were not retained in the final model.

DISC = HIV Disclosure. CDI = Children's Depression Inventory. CBCL-Agg = Child Behavior Checklist - Aggression Subscale. CBCL-Anx = Child Behavior Checklist - Anxiety Subscale. PCC = Parent-Child Communication Scale. APQ-Pos = Alabama

Parenting Questionnaire - Positive Parenting Subscale. APQ-Inv = Alabama Parenting Questionnaire - Involvement Subscale. CBQ-C = Conflict Behavior Questionnaire - Child Report. CBQ-M = Conflict Behavior Questionnaire - Mother Report. PSI-PD = Parenting Stress Index - Parental Distress Subscale. PSI-DI = Parenting Stress Index - Dysfunctional Interaction. PSI-DC = Parenting Stress Index - Difficult Child.

Table 3.11 Summary of quantitative and qualitative findings

| | Latent Change Score Models (LCS) | Cross Lagged Panel Models (CLPA) | Qualitative Themes |
|--|---|--|---|
| HIV Disclosure and Child Adjustment | <ul style="list-style-type: none"> ▪ No significant effects | <ul style="list-style-type: none"> ▪ No significant effects | <ul style="list-style-type: none"> ▪ Child's reaction as normal, neutral, or calm ▪ Child's initial negative feelings, such as sadness and fear ▪ Improvement in child's functioning following disclosure |
| HIV Disclosure and Parenting | <ul style="list-style-type: none"> ▪ Disclosure predicted greater improvements in communication and relationship quality (child report) ▪ No effects with mother-reported parenting | <ul style="list-style-type: none"> ▪ Disclosure predicted marginally lower levels of relationship quality (mother report) | <ul style="list-style-type: none"> ▪ Stability in family functioning following disclosure ▪ Positive changes in relationship following disclosure |
| HIV Disclosure and Parenting Stress | <ul style="list-style-type: none"> ▪ Disclosure predicted greater reductions / slower increases in parenting stress | <ul style="list-style-type: none"> ▪ No significant effects | <ul style="list-style-type: none"> ▪ Stress related to HIV stigma, fears of death, staying health, and privacy concerns ▪ Living a normal life with HIV ▪ Disclosure relieving burden of stress |
| Child Adjustment and Parenting | <ul style="list-style-type: none"> ▪ Child depression marginally hindered improvement in communication ▪ No effects with aggression or anxiety | <ul style="list-style-type: none"> ▪ Child depression and communication were reciprocally inversely related (child report) ▪ Relationship quality predicted less child depression over time (child report) | <ul style="list-style-type: none"> ▪ Behavioral control as a central parenting practice ▪ Communication as essential to a strong relationship ▪ Strict vs. permissive parenting ▪ Transactional relations between child behaviors and effective parenting |

| | | | |
|--|---|---|--|
| Child Adjustment and Parenting Stress | <ul style="list-style-type: none"> ▪ No significant effects | <ul style="list-style-type: none"> ▪ Parenting stress (DI) and child depression were reciprocally positively related ▪ Parenting stress (DC) and child aggression were reciprocally positively related ▪ Child aggression predicted marginally higher parenting stress (PD) ▪ Child anxiety predicted higher parenting stress (PD & DI) ▪ Parenting stress (DC) and child anxiety were reciprocally positively related | <ul style="list-style-type: none"> ▪ Impact of mothers' physical and emotional health on child ▪ Child behavior makes parenting easier or more difficult |
| Parenting and Parenting Stress | <ul style="list-style-type: none"> ▪ Change in parenting stress (PD) predicted negative change in parental involvement | <ul style="list-style-type: none"> ▪ Better relationship quality (mother report) predicted less subsequent parenting stress (PD & DI) ▪ Parenting stress (DC) and relationship quality (mother report) were reciprocally inversely related ▪ Parenting stress (DI) predicted worse relationship quality (child report) | <ul style="list-style-type: none"> ▪ Financial strain and single parenthood as barriers to effective parenting ▪ Difficult decisions about parenting style |

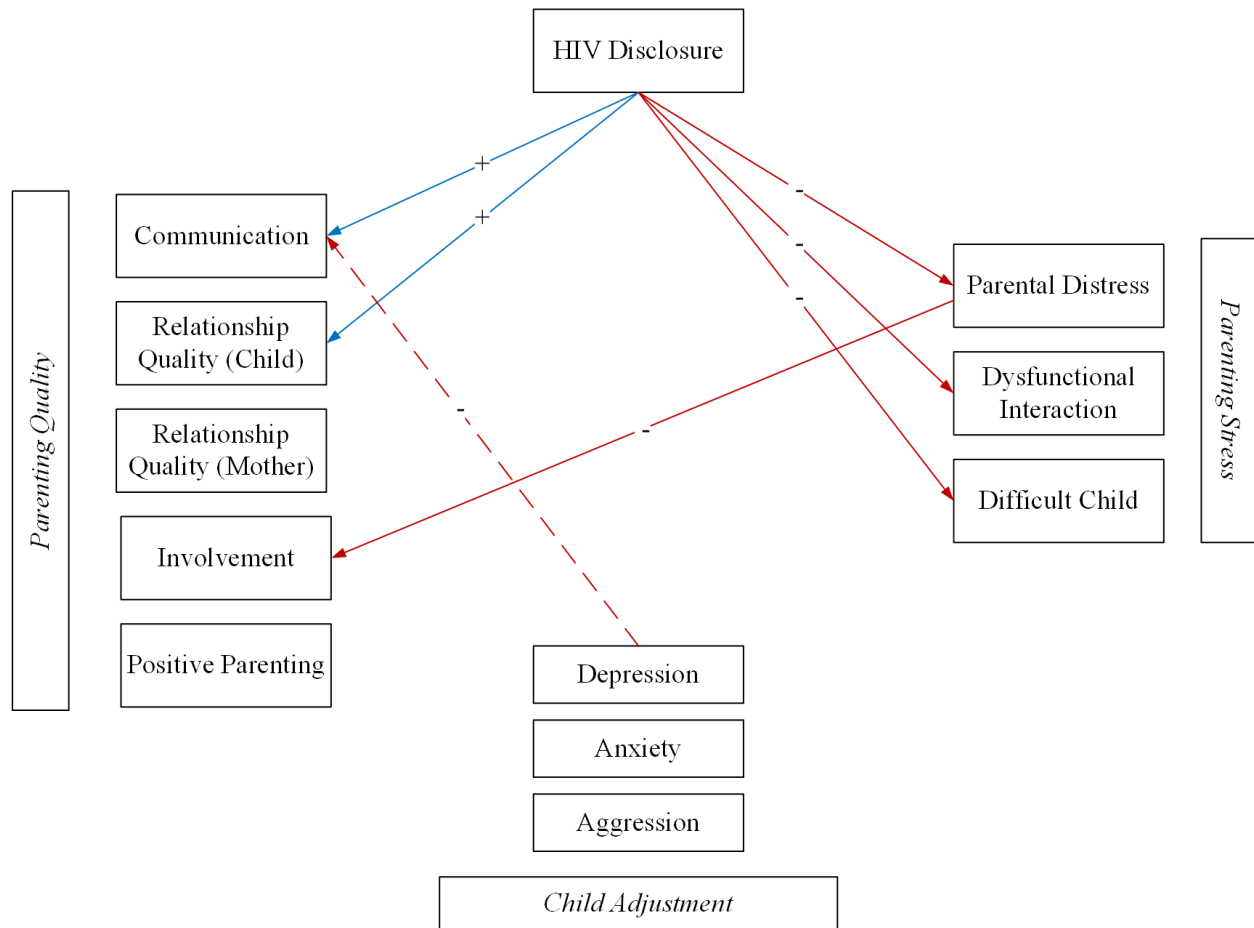


Figure 3.1a Conceptual summary of latent change score (LCS) modeling results

Note. Figure is conceptual in nature and not a direct representation of analytic models. Single-headed arrows represent unidirectional coupling effects across time. Blue lines (labeled as +) indicate positive relations, while red lines (labeled as -) indicate negative relations. Dashed lines represent marginal effects.

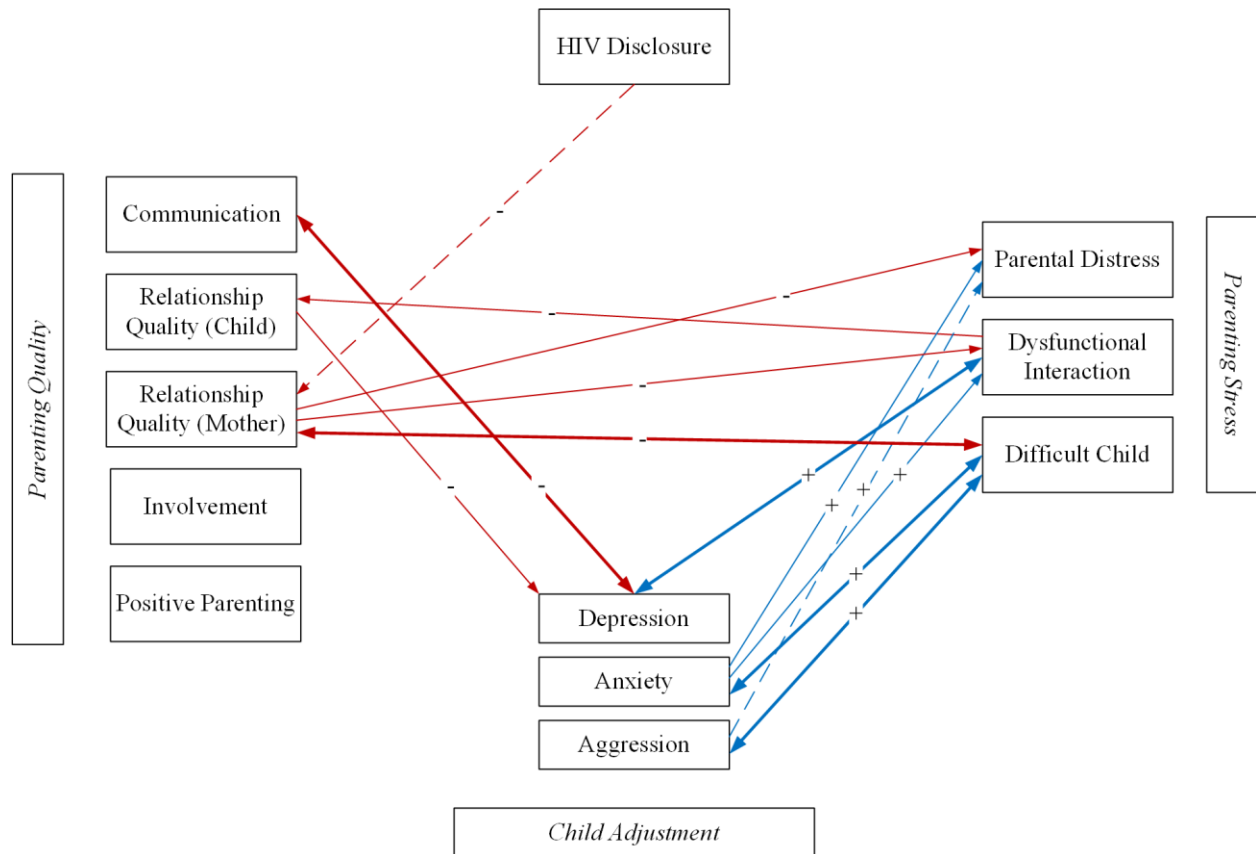


Figure 3.1b Conceptual summary of cross-lagged panel analysis (CLPA) results

Note. Figure is conceptual in nature and not a direct representation of analytic models. Double-headed bolded arrows represent bidirectional relations across time. Single-headed arrows represent unidirectional cross-lagged effects across time. Dashed lines represent marginal effects. Blue lines (labeled as +) indicate positive relations, while red lines (labeled as -) indicate negative relations.

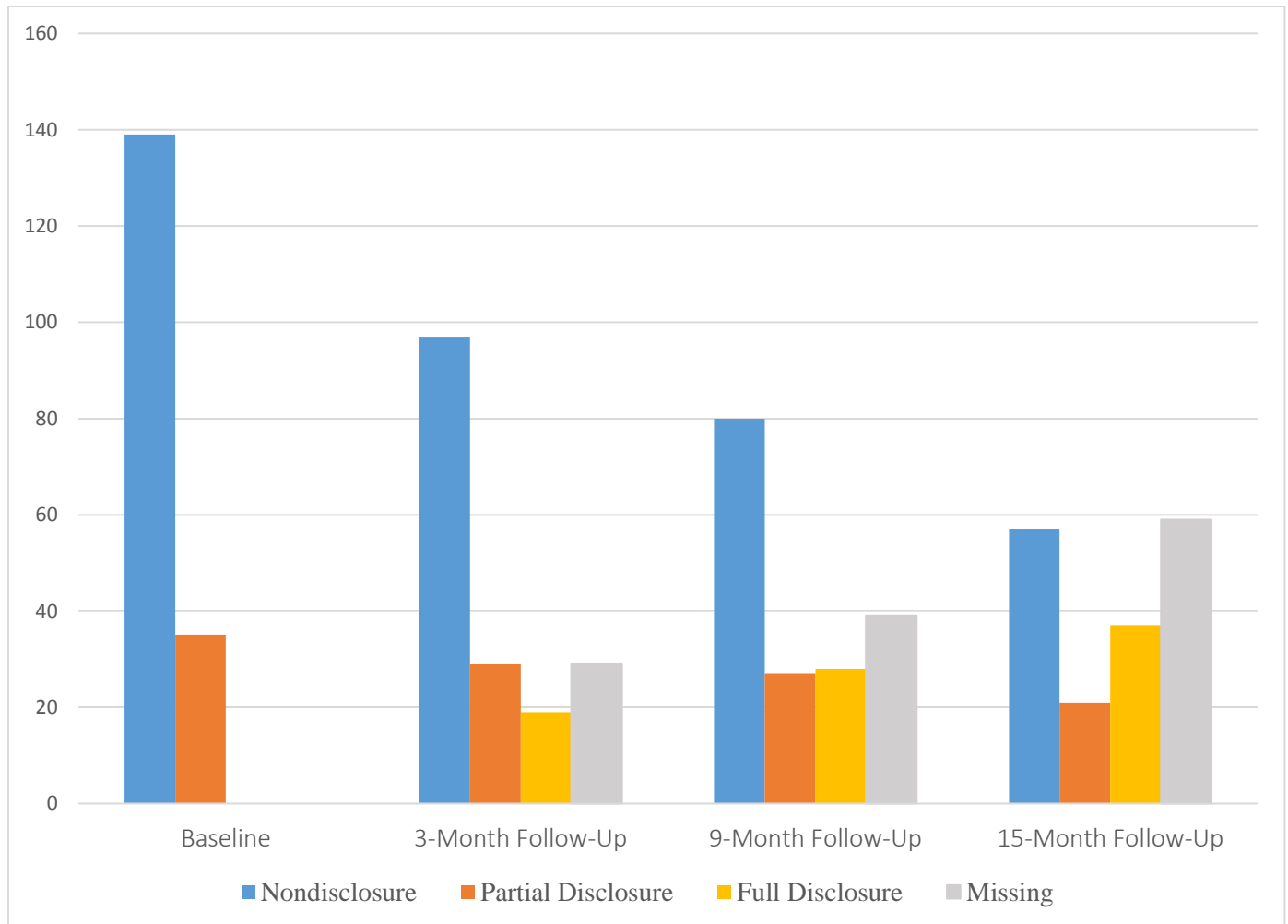


Figure 3.2 Frequencies of disclosure status across waves.

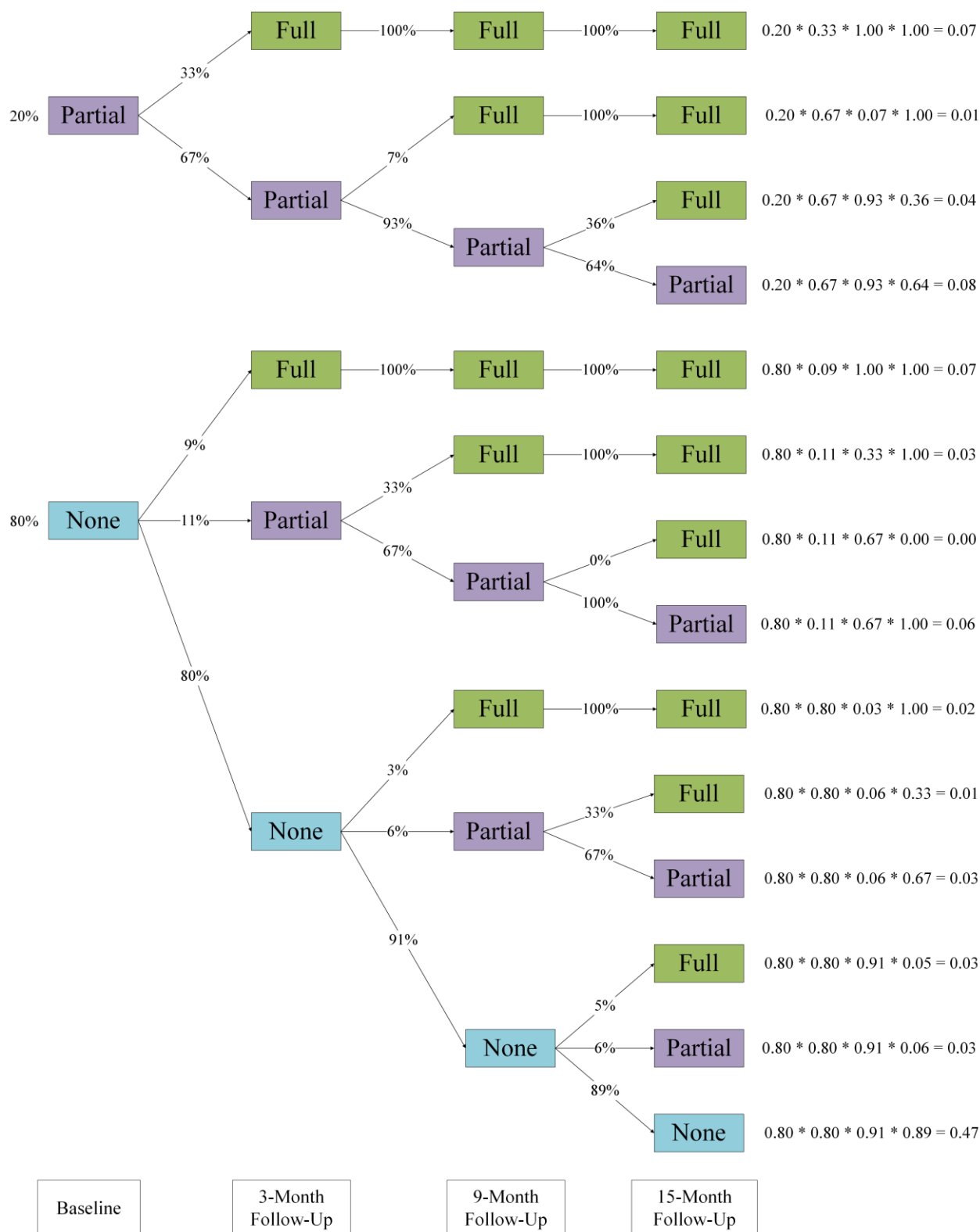


Figure 3.3 Tree diagram displaying patterns of HIV disclosure across waves and probability of each pattern

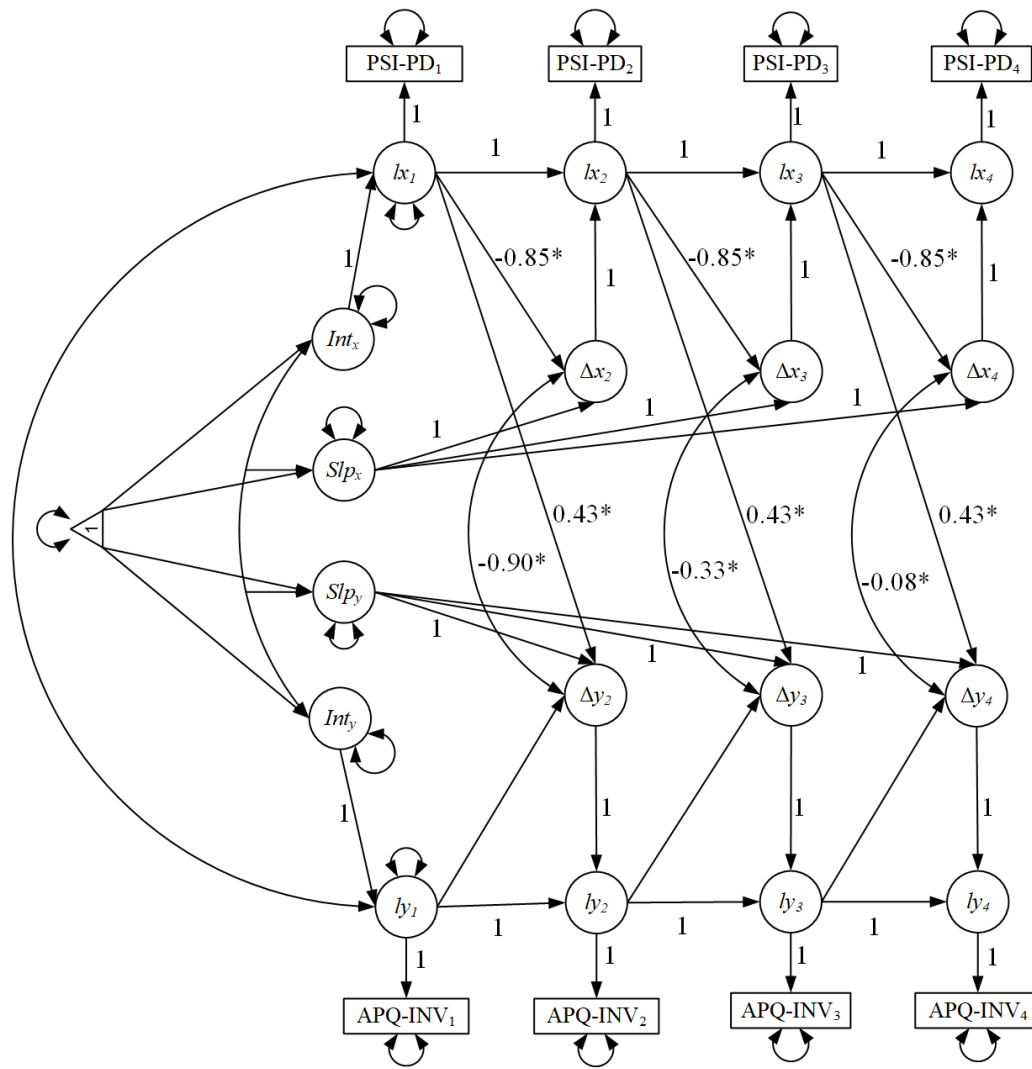


Figure 3.4 Illustrative bivariate latent change score model displaying coupling effects from parenting stress (PSI-PD) to parental involvement (APQ-INV)

Note. PSI-PD = Parenting Stress – Parental Distress. APQ-INV = Alabama Parenting Questionnaire – Involvement. Due to space limitations, X and Y are used to denote PSI-PD and APQ-INV, respectively, in latent variables. Observed variables are represented by rectangles, with subscripts indicating timepoint. Latent true scores are represented by lx_1 - lx_4 and ly_1 - ly_4 . Latent change scores are represented by Δx_1 - Δx_4 and Δy_1 - Δy_4 . Constant change is represented by *int* and *slp* factors. The true score from each timepoint (e.g., lx_1) and the latent change score (e.g., Δx_2) together comprise the latent true score for the subsequent timepoint (e.g., lx_2). The latent change scores (Δx_1 - Δx_4 and Δy_1 - Δy_4) are determined by the true scores of each variable at baseline (lx_1 and ly_1) and the constant change components (*int* and *slp*). Correlation coefficients among the intercepts and slopes of each variable are not displayed due to space limitations.

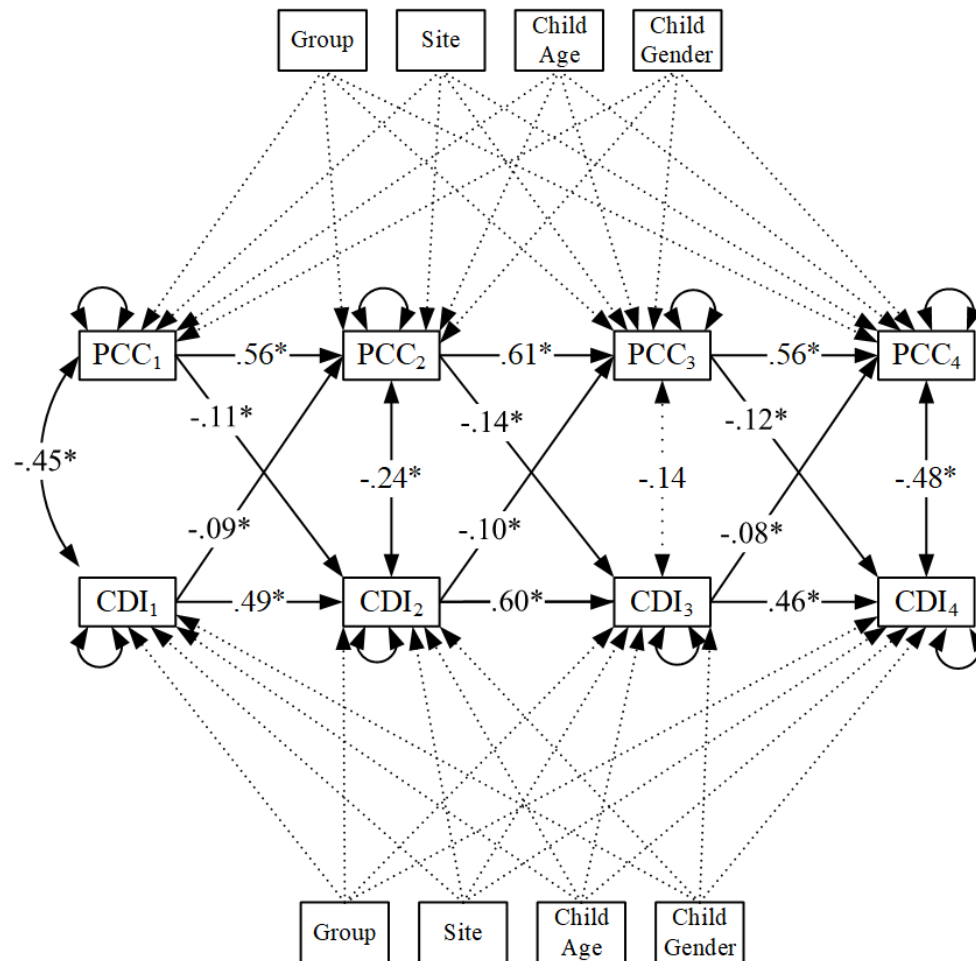


Figure 3.5 Illustrative bivariate cross-lagged panel model displaying bidirectional effects between parent-child communication (PCC) and child depression (CDI).

Note. PCC = Parent-Child Communication Scale (child report). CDI = Children's Depression Inventory (child report).

Model fit indices: $\chi^2 = 73.81$, $df = 44$, $p = .003$; CFI = .93; RMSEA = .06.

Standardized parameter estimates are displayed. Solid lines indicate significant effects, and dotted lines indicate nonsignificant effects. Parameter estimates for covariates are not displayed due to space limitations.

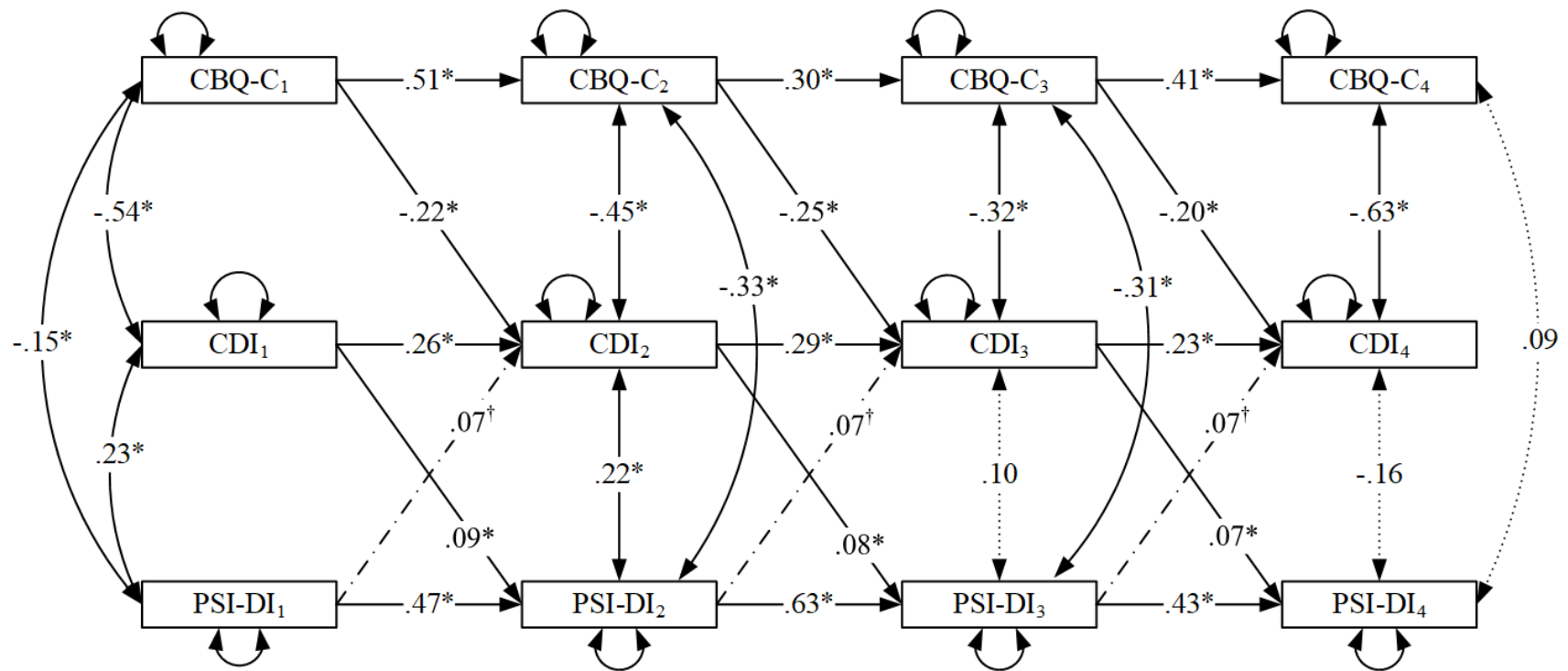


Figure 3.6. Multivariate cross-lagged panel model displaying longitudinal relations among parenting, child depression, and parenting stress.

Note. CBQ-C = Conflict Behavior Questionnaire – Child Report. CDI = Children’s Depression Inventory. PSI-DI = Parenting Stress Index – Parent-Child Dysfunctional Interaction scale.

Model fit indices: $\chi^2 = 110.36$, $df = 76$, $p = 0.01$; CFI = .96; RMSEA = .05.

Standardized parameter estimates are displayed. Subscripts indicate timepoint (1 = Baseline; 2 = 3-month follow-up; 3 = 9-month follow-up; 4 = 15-month follow-up).

— Solid lines indicate significant paths (* $p < 0.05$).

- - - Dashed lines indicate marginally significant paths ($p < 0.10$).

..... Dotted lines indicate nonsignificant paths ($p > 0.10$).

Covariates, including group assignment, study site, child age, and child gender, are not depicted and had no significant associations with primary variables. For each construct, autoregressive paths with a lag of two timepoints (e.g., time 3 regressed on time 1, time 4 regressed on time 2) were estimated in the model but are not displayed due to space limitations.

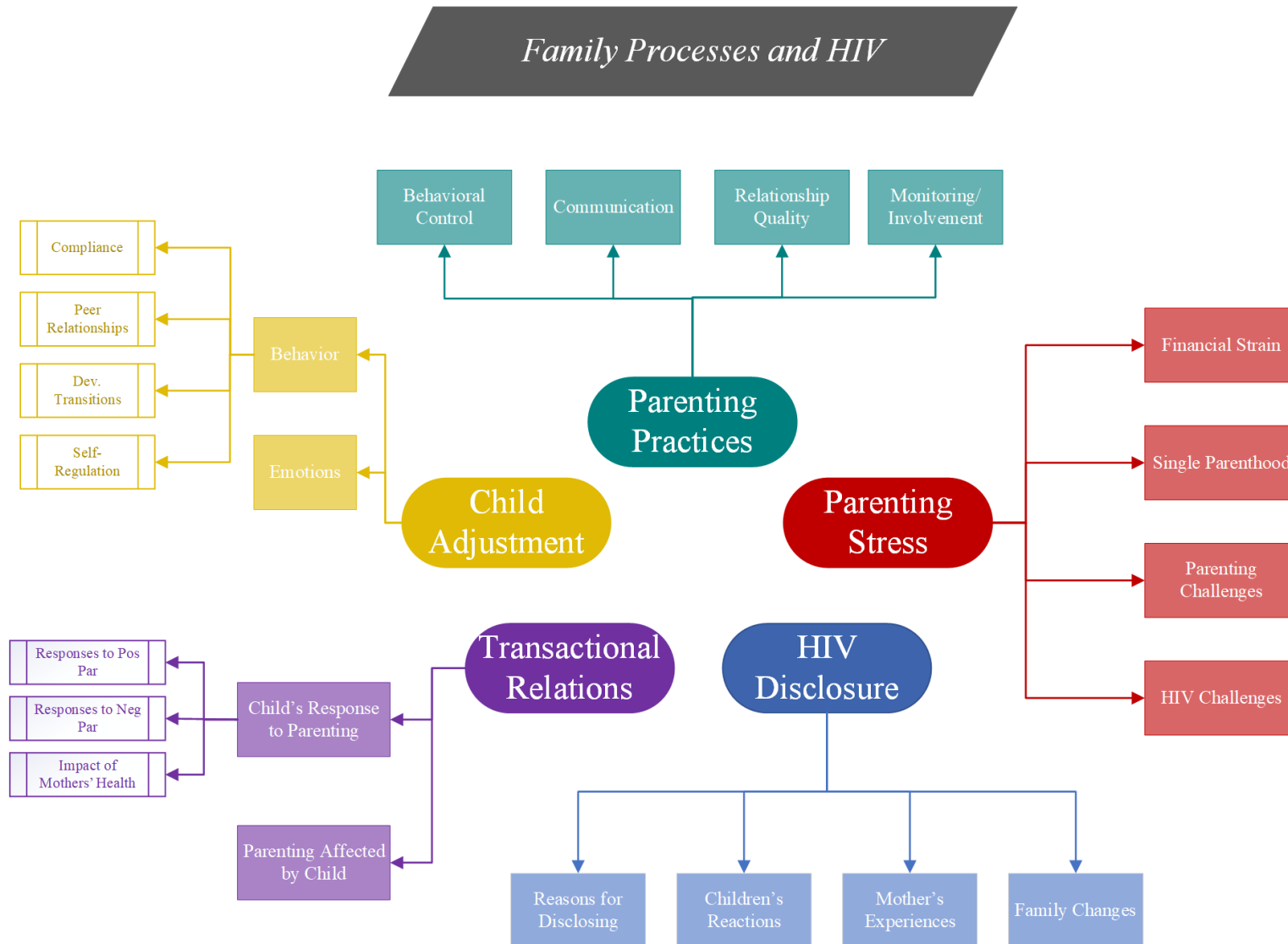


Figure 3.7 Qualitative themes related to HIV disclosure and family processes.

4 DISCUSSION

Mothers living with HIV (MLH) face unique stressors related to managing their illness and simultaneously balancing childrearing responsibilities. Among these stressors is the decision of whether, when, and how to disclose their HIV serostatus to their children. This decision is made in the context of complex and dynamic family processes as children develop. Cross-sectional research has demonstrated potential positive effects of HIV disclosure on family functioning and child outcomes, but no study has investigated the longitudinal, reciprocal interplay among these variables. Using a mixed methods approach and guided by the process model of parenting (Belsky, 1984), the current study sought to understand the complex associations among HIV disclosure, parenting quality, parenting stress, and child adjustment among a sample of 174 MLH and their 6- to 14-year-old children. Quantitative data were drawn from a larger randomized controlled trial evaluating the efficacy of a disclosure to facilitate mothers' disclosure of their HIV status. Half the mothers received the intervention, targeting family processes such as developmentally appropriate expectations, family routines, and parent-child communication. All mothers in the qualitative subsample had received the intervention, either in an individual (intervention condition) or group (waitlist control condition) format. Overall, results demonstrated both consistencies and inconsistencies with study hypotheses. Quantitative results and qualitative themes are summarized in Table 3.11, Figure 3.1a, Figure 3.1b, and Figure 3.7.

4.1 Interpretation of Descriptive Findings

Consistent with findings of the overall TRACK-II study (Schulte, Armistead, Murphy, & Marelich, in preparation), mothers in the intervention condition were significantly more likely to

disclose their HIV status to their children compared with mothers in the control condition. A few site differences were observed with regard to parenting and parenting stress. Specifically, at a few timepoints, mothers at the Atlanta site endorsed higher parenting stress and more engagement in certain positive parenting behaviors compared with those at the Los Angeles site. The finding regarding parenting stress is consistent with qualitative results indicating that mothers overall, and particularly those at the Atlanta site, experienced high levels of stress related to their parenting and other contextual issues. This discrepancy may be related to the higher amount of HIV-related service agencies located in the Los Angeles area, including services for children and families, compared with those available in Atlanta.

Longitudinal measurement invariance was established for all scales, suggesting that, except for a few items, this set of measurement tools evidences consistent psychometric properties in this sample across time. Adequate fit of CFAs for each construct indicate consistency of these measurement tools in this population compared with the general population. Longitudinal univariate LCS models and CLPA models revealed relatively high stability within constructs across time.

Previous research on HIV disclosure has not provided detailed descriptive data regarding the unfolding of the disclosure process across time, particularly when conceptualizing disclosure as an ordinal—rather than dichotomous—variable. Descriptive analysis of HIV disclosure across time revealed a diverse set of disclosure patterns. Among mothers who ultimately fully disclosed, some first reported a partial disclosure, whereas others transitioned directly from nondisclosure to full disclosure. Importantly, many mothers in this sample chose not to disclose over the course of the 15-month follow-up window. Qualitative interviews with mothers that did disclose revealed several potential reasons prompting this decision, such as the child's

functioning and developmental readiness, sexual risk reduction, the influence of the TRACK-II intervention, and a desire to combat stigma. Future research should examine predictors of disclosure versus nondisclosure to identify salient barriers. This is particularly important given quantitative analyses revealing that relative to nondisclosure, both partial disclosure and full disclosure were beneficial for some aspects of family functioning. This finding highlights the potentially detrimental impact of nondisclosure on families, and suggests that even partial disclosure (e.g., sharing some information about sickness without using the term HIV) provides some benefits over nondisclosure.

4.2 Interpretation of Primary Findings

4.2.1 HIV Disclosure and Its Interplay with Family Processes

Consistent with study hypotheses, HIV disclosure was related to greater improvements in children's perceptions of parenting quality. Specifically, children whose mothers disclosed or partially disclosed their status reported more rapid improvements in parent-child communication and relationship quality, compared with families in which disclosure did not occur. This finding is consistent with previous cross-sectional research and suggests that HIV disclosure may serve to enhance the parent-child relationship across time. Children may feel more connected to their mothers because of being entrusted with personal health information. Qualitative interviews supported this notion. Several families stated that their relationships improved following the disclosure, and some families specifically discussed a bolstered sense of trust after the conversation. Taken together, the quantitative and qualitative findings suggest that HIV disclosure serves to enhance open communication and closer bonds within the relationship. Interestingly and contrary to expectations, HIV disclosure was related to only child, but not mother, report of parenting changes. This finding may reflect the fact that HIV disclosure is new

information for children—but not mothers—and may accordingly be related to greater shifts in children's perceptions of the relationship.

Results also revealed a seemingly contradictory finding: within the CLPA framework, HIV disclosure was marginally related to worse mother-reported relationship quality. This result is inconsistent with hypotheses and may be related to a few outliers in the data. Inspection of bivariate scatterplots revealed that a very small number of mothers who had fully disclosed reported worse parenting quality than the average family. Given the relatively small sample size and the small effect size of the cross-lagged paths (standardized parameter estimates ranging from -0.05 to -0.09), one or two outliers may have a significant impact on the results. Further, there is a restriction of range in relationship quality scores, as most families reported relatively strong relationship quality. This marginal finding was inconsistent with qualitative interviews, which suggested that mothers believed their relationships with their children either remained the same or improved. None of the mothers interviewed in the qualitative subsample endorsed a perception that their relationship quality with their children worsened after the disclosure. This suggests that the marginal finding may reflect Type I error.

In addition to enhancing children's perceptions of parenting quality, results indicated that HIV disclosure is beneficial for parenting stress among MLH. Mothers who fully or partially disclosed had greater decreases (or in some cases, more gradual increases) in parenting stress compared with those who did not disclose. This finding is consistent with hypotheses and likely is underpinned by the fact that nondisclosure may be a difficult burden for mothers and may be a significant source of stress (Murphy, 2008). Consistent with the quantitative data, qualitative interviews revealed that many mothers felt a sense of relief after sharing their HIV status with their children. For most mothers, sharing their health status with their child served to reduce their

stress level. This pattern of quantitative and qualitative findings indicates that HIV disclosure is a beneficial process for mothers' stress levels and, conversely, nondisclosure leads to elevated stress. The benefits of disclosure for parenting stress may operate by relieving mothers' burden of secrecy, allowing them to be more open with their health information and thereby increasing medical adherence.

Although LCS modeling revealed that HIV disclosure predicted *change* in several variables, HIV disclosure was not significantly related to *mean levels* of child adjustment, parenting stress, or most aspects of parenting within a CLPA approach. This was a surprising finding given cross-sectional data indicating some benefits of disclosure (Murphy et al., 2001) but was somewhat consistent with other studies demonstrating null effects of disclosure on child functioning (Palin et al., 2009). Several possible explanations may account for this unexpected finding. Qualitative findings emphasized the overall stability in functioning following disclosure; the most common reaction to the disclosure was that very little changed for children's adjustment or mothers' parenting. It is possible that other aspects of family life, such as economic strain or extended family support, are more impactful for MLH and their children during this developmental period. Further, given the changing face of the HIV epidemic over the years, adolescents now may be less affected by news about their mothers' HIV status, compared to those sampled in previous decades when HIV was associated with a higher mortality rate.

A notable difference between MLH in this sample and those in previous samples demonstrating benefits of disclosure (e.g., Murphy et al., 2001) is that the mothers in this sample were specifically recruited into a randomized controlled trial because they had not shared their HIV status with their child at baseline. There are likely meaningful differences between mothers who choose to disclose and those who choose not to disclose. For example, a qualitative study

among MLH who had been screened out of the TRACK-II intervention study because they had already chosen to disclose their serostatus revealed that, despite being socioeconomically similar to the current sample, these mothers felt they had adequate access to resources and could adeptly navigate government assistance programs (Tarantino, 2015). In contrast, MLH in this sample expressed high levels of financial and economic stress. This and other distinctions may lead to differential effects of disclosure on families; disclosure may be more beneficial for MLH who decided to disclose without the aid of an intervention program.

Empirically, given the large autoregressive parameter estimates for most variables, it is possible that significant covariance between HIV disclosure and family processes across time was not observed because of the high temporal stability within each variable. With limited variability in measures across timepoints, it is difficult to detect significant covariance effects. It is also possible that the time period in this study (15 months) does not capture the longer-term effects of HIV disclosure on families. Given the benefits of disclosure on parent-child relationship quality, it is likely that with a longer follow-up window, more benefits in child adjustment would be observed—perhaps indirectly via changes in parenting. Alternatively, it may be that the spacing of the follow-up assessments (i.e., 3 months or 6 months apart) did not adequately capture fluctuations in child adjustment between each timepoint. Finally, it is possible that patterns of disclosure change, rather than disclosure status at each timepoint, would be more predictive of child adjustment over time. However, patterns of change could not be modeled in this study due to collinearity and lack of sufficient variability in patterns of change across time (see Figure 3.3).

4.2.2 Relations among Child Adjustment, Parenting, and Parenting Stress

Across methodological approaches, a pattern emerged revealing linkages between parent-child communication and child depressive symptoms across time. Within the LCS modeling framework, though parent-child communication on average increased across time, children's depressive symptoms hindered the improvement in communication. Similarly, CLPA revealed that mean levels of communication and child depression were significantly reciprocally inversely related over time. This effect is also reflected in the qualitative interviews; several families expressed that children withdraw and decrease their communication when they are struggling emotionally. Some mothers also endorsed not knowing how to talk to their child when they are feeling upset or sad. This finding is consistent with hypotheses and with prior literature suggesting associations between parent-child interactions and children's depressive symptoms (Sander & McCarty, 2005). Although not directly measured in this study, maternal depression also likely plays a role in contributing to both child depression and parent-child communication. It is important to note that in this sample, the reciprocal findings between parent-child communication and child depression both rely on child report, suggesting the possibility that the finding may be due in part to common reporter variance.

The null findings in the majority of bivariate LCS models examining parenting and child adjustment contradicts hypotheses and previous longitudinal studies with other populations (e.g., Barbot et al., 2014). Notably, very few studies have employed LCS modeling to examine determinants of change among parenting and child outcomes, and none have used LCS modeling in this population; the effects are therefore not well-established in the literature using this methodological approach, even among the general population. It is possible that significant coupling effects could not be detected because of the relatively small sample size and limited

statistical power in a computationally intensive model estimating latent change. Alternatively, it is also possible that reciprocal effects between changes in parenting and child adjustment are weaker in this population. Perhaps there are meaningful contextual differences among families affected by maternal HIV, compared with the general population, that result in different interrelations among family processes. For example, given the high stress levels endorsed by mothers in this sample, external stressors (e.g., related to finances, employment, housing, single parenting/sole source of income, and other basic needs) may exert a stronger influence on parenting and child adjustment. Parenting practices may be more influenced by the mother's sense of economic stability than by her child's behavior. Similarly, children are also likely affected by overall stress in the home. This potential explanation is in line with the study findings that parenting stress demonstrated more consistent transactional effects with child adjustment than did parenting quality. It is also consistent with previous literature suggesting that women living with HIV often struggle to meet basic needs, such as food security, transportation, and housing, which in turn leads to a range of negative outcomes (Chop et al., 2017; Caiola, Barroso, & Docherty, 2017). Women of color living with HIV are also affected by a unique set of structural inequities and stigma based on their intersecting identities (Sangaramoorthy, Jamison, & Dyer, 2017), and these stressors may spill over to influence children's adjustment.

Though latent change in parenting stress and child adjustment were not significant predictors of one another, mean levels of the two constructs were interrelated across time. Specific subscales of parenting stress had somewhat unique associations with aspects of child functioning. The Difficult Child (DC) subscale, which taps into parents' perceptions of the child's difficult temperament, was reciprocally related with both anxiety and aggression; this aspect of parenting stress both contributed to and was exacerbated by children's internalizing and

externalizing difficulties. Anxiety and aggression were both reported by mothers; thus, this finding may reflect a general negative perception of the child's functioning and temperament. Further, anxiety and aggression predicted (but were not predicted by) later parenting stress within the Parental Distress (PD) and Dysfunctional Interaction (DI) subscales, suggesting over-time effects of children's emotional and behavioral functioning on parents' perceptions of themselves in the parental role and perceptions of unpleasant interactions with their child. Child depression was transactionally related with only one aspect of parenting stress: the Dysfunctional Interaction (DI) subscale. Children's depressive symptoms and mothers' negative perceptions of their interactions intensified one another across time. Depressive symptoms were reported by children; perhaps the DI subscale was the aspect of parenting stress that was most strongly related to children's perceptions of their own functioning because it taps into dyadic interactions. Overall, consistent with hypotheses and previous literature (e.g., Liu & Wang, 2015; Neece et al., 2012), parenting stress is worsened by caregivers' and children's perceptions that the child is not functioning well. In turn, parenting stress contributes to more symptoms across time. In this sample, parenting stress appears to play a more central role in influencing child functioning than parenting practices. This pattern of findings supports the body of literature highlighting the influential role of parenting stress on family functioning and child adjustment, including among studies using similar methods (e.g., CLPA) within the general population (Neece et al., 2012).

Parenting stress also had significant longitudinal associations with parental involvement and parent-child relationship quality. Within the LCS approach, changes in parenting stress—specifically parents' distress within the parental role—led to inverse changes in parental involvement. As parenting stress increased, parental involvement decreased. This finding is consistent with hypotheses and with the theoretical framework of the family stress model

(Conger et al., 2002). Parenting stress may impede parents' ability to be emotionally and physically available for their child. In the face of high parenting stress, parents may retreat or withdraw from their child. Qualitative interviews also echoed this theme; mothers expressed that their own emotional health and stress level directly predicted their ability to remain actively involved with their children. Consistent with the family stress model (Conger et al., 2002) and qualitative interviews, mothers' parenting stress is also likely exacerbated by economic stress.

In the CLPA approach, mean levels of parenting stress and parent-child relationship quality evidenced significant cross-lagged associations. Mothers' perceptions of positive relationship quality predicted lower subsequent parenting stress in all subscales; and one aspect of parenting stress—the perception that the child has a difficult temperament—reciprocally predicted worse parenting quality. For mother report of the relationship, parenting quality appears to drive the association with parenting stress. In contrast, mothers' parenting stress regarding difficult interactions with the child predicted worse subsequent relationship quality from the child's perceptions. This pattern of findings suggests the possibility of a self-fulfilling prophesy: when mothers perceive their relationship with their child to be weaker, their parenting stress is subsequently higher; and higher parenting stress in turn drives children's perceptions that the parent-child relationship is weaker.

4.3 Limitations and Directions for Future Research

The current study represents the first longitudinal, mixed-methods investigation of HIV disclosure and its transactional interplay with family processes among mothers living with HIV. Findings of this study should be taken in the context of the study's limitations. First, perhaps due to the relative instability of this high-risk population, high rates of attrition were observed. It is possible that data are not missing completely at random (MCAR); families who are more under-

resourced (e.g., those who do not have consistent phone numbers or housing) may have been more difficult to retain for follow-up. Future research replicating these findings among this population is needed to reinforce the validity and generalizability of this study's conclusions. Second, the number of separate quantitative analyses may have inflated the risk of Type I error. Attempts were made to counteract this risk by confirming statistically significant inferences using Bayesian analysis. Third, participants of this study were recruited into a randomized controlled trial targeting HIV disclosure; therefore, at the time of enrollment, all the mothers had chosen not to disclose to their children. Therefore, findings of this study may not generalize to MLH who choose to disclose without the aid of a disclosure-focused intervention. Another potential limitation relates to the operationalization of HIV disclosure in the quantitative analyses. HIV disclosure was analyzed as status at each timepoint (with scores of 0, 1, or 2). Though it may have been beneficial to examine patterns of changes in disclosure status across time, this analytic approach was not possible due to model nonconvergence related to insufficient variability in the patterns in which mothers shifted their disclosure status.

In the qualitative interviews, contextual stressors emerged as an important external influence on family processes, but these variables were not measured quantitatively. Future quantitative research should incorporate measures of contextual stress, such financial hardship, (lack of) social support and coparent involvement, and access to services, as potential predictors of parenting, parenting stress, and child adjustment. Additionally, this study contributed to the literature on families affected by HIV by considering the role of partial disclosure within a 3-point ordinal scale, as well as through qualitative interviews. Although this conceptualization is a step forward from prior research dichotomizing disclosure, it is still somewhat inconsistent with current theories considering disclosure a process, rather than a discrete event (Derlega et al.,

2004; Qiao, Li, & Stanton, 2013b). Future research should consider disclosure as a continuous variable and assess disclosure quantitatively from children's perspectives. Finally, when interpreting qualitative findings from this study, it is important to note that all mothers in the qualitative subsample had received the TRACK-II intervention, either in an individual format (intervention condition) or a group format (waitlist control condition). Thus, qualitative themes are likely influenced by the content of the intervention, which includes parenting strategies such as communication and relationship quality, as well as cognitive and behavioral content related to the disclosure process.

4.4 Implications for Clinical Practice and Policy

Despite its limitations, this study represents an important step in illuminating family processes, including HIV disclosure, among families affected by maternal HIV. Findings have implications for clinical practice and public policy. Clinically, findings support the use of evidence-based behavioral parenting interventions among families affected by HIV to improve children's emotional and behavioral functioning. For example, stronger communication skills—as perceived by children—may reduce depressive symptoms. Further, in light of qualitative themes related to children's adaptive and maladaptive coping skills (e.g., being able to talk about feelings versus shutting down when upset), clinical interventions with this population should target emotion regulation skills in children. This skillset may facilitate additional conversations about disclosure and promote children's adjustment to their mother's illness. Additionally, equipping mothers with skills to promote a warm and supportive parent-child relationship may prevent elevated parenting stress, which in turn can be protective for children's perceptions of the relationship and their emotional and behavioral functioning.

Beyond promoting positive parenting practices among MLH, study findings point to the central importance of targeting parenting stress in prevention and intervention efforts with these families. Parenting behaviors may be less effective in the context of high maternal stress (Kashdan et al., 2004), particularly for this vulnerable population. Given the direct linkages between parenting stress and child functioning in this sample, it is imperative for clinicians to routinely assess and target parenting stress to support MLH and, in turn, their children. Evidence-based interventions aimed at reducing parenting stress are needed for this population.

Study findings also highlight the beneficial role of HIV disclosure, particularly in spurring reductions in parenting stress and improvements in children's perceptions of the parent-child relationship. Quantitative and qualitative findings of this study point to disclosure as a positive process overall for families. In addition to the benefits for maternal stress and the parent-child relationship, findings from this study and others with this population (e.g., Tarantino, Guthrie, & Armistead, under review) point to the potential of utilizing HIV disclosure as a springboard for sexual health education and HIV prevention. This is a promising area for future research and intervention, as mothers' experiences living with HIV can be leveraged as a strength to promote adolescent sexual health.

In light of these findings, MLH should be supported in their decision to talk about their health with their young children and adolescents. The parent study (Schulte et al., in preparation) describes the demonstrated efficacy of the TRACK-II intervention, which focuses on developmental considerations, positive parenting and family practices to enhance the child's sense of stability (e.g., routines, parent-child communication skills), perceived barriers to disclosure, and specific behavioral strategies for the disclosure process (e.g., answering difficult questions about HIV). By targeting mothers' decision to disclose to their children in the context

of a warm, supportive, and open parent-child relationship, the TRACK-II intervention builds upon families' bonds and strengths to further enhance child and maternal functioning. Findings from this study lend additional support to the overall benefits of promoting maternal HIV disclosure in the context of an intervention such as TRACK-II. In light of these findings, the TRACK-II intervention may be even further strengthened by incorporating more content related to disclosure as an ongoing process and providing the child with a list of safe people to whom they can speak about the mothers' HIV. Although the intervention includes content in both of these areas, the current study revealed that among families who disclose, children may need additional ongoing support to facilitate their adjustment to the disclosure. For example, qualitative themes related to children's fears of death reveal that more ongoing reassurance may be needed.

Beyond family-level clinical practice, findings of this study also have implications for broader public policy. Given the bidirectional connections between stress and physical health for people living with HIV (e.g., Stewart, Cianfrini, & Walker, 2005), increasing access to healthcare is essential for MLH. Access to healthcare should include medical care as well as behavioral healthcare to comprehensively address the needs of families of MLH. Overall, families in this sample were under-resourced and identified socioeconomic factors as significant sources of stress on their families. Qualitative findings pointed to families' reliance on and need for HIV-related community-based organizations, particularly those that support children of MLH. Though some families, primarily those in the Los Angeles area, indicated high availability and utilization of HIV-related resources, many expressed that there are not enough services available for families affected by HIV. Increasing access to HIV-related services across geographical locations would benefit families by reducing mothers' parenting stress, providing

tangible assistance, offering social support for mothers and children, providing psychoeducation about HIV for children of MLH, and connecting families affected by HIV with needed resources. By working to alleviate mothers' external stressors, which contribute to parenting stress and in turn child adjustment, investing in the accessibility of these resources would reduce the public health burden of HIV.

4.5 Conclusions

The current study provided a mixed methods, longitudinal investigation of maternal HIV disclosure and family processes, including parenting quality, parenting stress, and child adjustment. This study was the first to examine longitudinal transactional relations of HIV disclosure with these family processes. A range of rigorous methodological approaches, including longitudinal structural equation modeling and grounded theory qualitative analysis, were employed to disentangle the nuanced over-time relations among these processes. Overall, findings highlight 1) the long-term benefits of HIV disclosure, particularly for children's perceptions of parenting and mothers' parenting stress; 2) stability in child adjustment and family relationships following disclosure; 3) reciprocal relations between children's perceptions of parenting and child depressive symptoms; and 4) parenting stress as a central contributor to and consequence of child adjustment and parenting quality. The longitudinal interplay among disclosure, parenting practices, parenting stress, and child functioning is complex and multifaceted, with both child factors and parent factors driving change. MLH should be encouraged to disclose their HIV status to their children and should be supported through this process to minimize parenting stress, bolster parenting skills, and promote positive outcomes for youth as they adjust to this family transition.

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APPENDICES

Appendix A: Parenting Stress Index

(Abidin, 1990)

| | | | | |
|-------------------|----------|----------|-------|----------------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Not Sure | Agree | Strongly Agree |

Parental Distress Subscale:

1. I often have the feeling that I cannot handle things very well.
2. I find myself giving up more of my life to meet my children's needs than I ever expected.
3. I feel trapped by my responsibilities as a parent.
4. Since having this child, I have been unable to do new and different things.
5. Since having a child, I feel that I am almost never able to do things that I like to do.
6. I am unhappy with the last purchase of clothing I made for myself.
7. There are quite a few things that bother me about my life.
8. Having a child has caused more problems than I expected in my relationship with my spouse (or male/female friend).
9. I feel alone and without friends.
10. When I go to a party, I usually expect not to enjoy myself.
11. I am not as interested in people as I used to be.
12. I don't enjoy things as I used to.

Parent-Child Dysfunctional Interaction subscale:

13. My child rarely does things for me that make me feel good.
14. Sometimes I feel my child doesn't like me and doesn't want to be close to me.
15. My child smiles at me much less than I expected.
16. When I do things for my child, I get the feeling that my efforts are not appreciated very much.
17. When playing or laughing, my child doesn't often giggle or laugh.
18. My child doesn't seem to learn as quickly as most children.
19. My child is not able to do as much as I expected.
20. It takes a long time and it is very hard for my child to get used to new things.
21. It takes a long time and it is very hard for my child to get used to new things.
22. I feel that I am
 - a. Not very good at being a parent. (5)
 - b. A person who has some trouble being a parent. (4)
 - c. An average parent. (3)
 - d. A better than average parent. (2)
 - e. A very good parent. (1)
23. I expected to have closer and warmer feelings for my child than I do and this bothers me.

Difficult Child subscale:

24. Sometimes my child does things that bother me just to be mean.
25. My child seems to cry or fuss more often than most children.
26. My child generally wakes up in a bad mood.

27. I feel that my child is very moody and easily upset.
28. My child does a few things which bother me a great deal.
29. My child reacts very strongly when something happens that my child doesn't like.
30. My child gets upset easily over the smallest thing.
31. My child's sleeping or eating schedule was much harder to establish than I expected.
32. I have found that getting my child to do something or stop doing something is

- a. Much harder than I expected. (5)
- b. Somewhat harder than I expected. (4)
- c. About as hard as I expected. (3)
- d. Somewhat easier than I expected. (2)
- e. Much easier than I expected. (1)

33. Think carefully and count the number of things which your child does that bother you.

For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc.

- a. 10+ (5)
- b. 8-9 (4)
- c. 6-7 (3)
- d. 4-5 (2)
- e. 1-3 (1)

34. There are some things my child does that really bother me a lot.
35. My child turned out to be more of a problem than I had expected.
36. My child makes more demands on me than most children.

Appendix B: Parent-Child Communication Scale

(Loeber, Farrington, Stouthamer-Loeber, & van Kammen, 1998)

| | | | | |
|--------------|-----------------|-----------|-------|---------------|
| 1 | 2 | 3 | 4 | 5 |
| Almost Never | Once in a While | Sometimes | Often | Almost Always |

1. Is your mother a good listener?
2. Can your mother tell how you are feeling without asking you?
3. Does your mother try to understand what you think?
4. Are there things that you do not discuss with your mother?
5. Do you discuss problems with your mother?
6. Does your mother insult you when she is angry with you?
7. Do you think that you can tell your mother how you really feel about things?
8. Can you let your mother know what is bothering you?
9. Are there certain things that your mother does not allow you to discuss with her?
10. Can you have your say even if your mother disagrees with you?

Appendix C: Conflict Behavior Questionnaire (Child Report)

(Robin & Foster, 1989)

| 1 | 2 |
|------|-------|
| True | False |

1. My mom doesn't understand me.
2. My mom and I sometimes end our arguments calmly.
3. My mom understands me.
4. We almost never seem to agree.
5. I enjoy the talks we have.
6. When I say what I think, she gets upset.
7. At least three times a week, we get angry at each other.
8. My mother listens when I need someone to talk to.
9. My mom is a good friend to me.
10. She says I don't care about what she thinks.
11. At least once a day we get angry at each other.
12. My mother is bossy when we talk.
13. The talks we have are frustrating.
14. My mom understands my point of view, even when she doesn't agree with me.
15. My mom seems to be always complaining about me.
16. In general, I don't think we get along very well.
17. My mom screams a lot.
18. My mom puts me down.
19. If I run into problems, my mom helps me out.
20. I enjoy spending time with my mother.

Appendix D: Conflict Behavior Questionnaire (Parent Report)

(Robin & Foster, 1989)

| 1 | 2 |
|------|-------|
| True | False |

1. [Child] is easy to get along with.
2. [Child] listens when you correct [him/her].
3. [Child] is well behaved in our discussions.
4. For the most part, [child] likes to talk to you.
5. We almost never seem to agree.
6. [Child] usually listens to what you tell him/her.
7. At least three times a week, we get angry at each other.
8. [Child] says you don't care about [his/her] feelings.
9. [Child] and you compromise during arguments.
10. [Child] often doesn't do what you ask.
11. The talks we have are frustrating.
12. [Child] often seems angry at you.
13. [Child] acts impatient when you talk.
14. In general, you don't get along very well.
15. [Child] almost never understands my side of an argument.
16. [Child] and you have big arguments about little things.
17. [Child] is defensive when I talk to him/her.
18. [Child] thinks my opinions don't count.
19. We argue a lot about rules.
20. [Child] tells me [he/she] thinks I am unfair.

Appendix E: Alabama Parenting Questionnaire

(Frick, 1991)

| | | | | |
|-------|--------------|-----------|-------|--------|
| 1 | 2 | 3 | 4 | 5 |
| Never | Almost Never | Sometimes | Often | Always |

Involvement Subscale

1. You have a friendly talk with [Child].
2. You volunteer to help with special activities that [Child] is involved in (such as sports, church, youth groups).
3. You play games or do other fun things with [Child].
4. You ask [Child] about his/her day in school.
5. You help [Child] with his/her homework.
6. You ask [Child] what his/her plans are for the coming day.
7. You take [Child] to a special activity.
8. You talk to [Child] about his/her friends.
9. [Child] helps plan family activities.
10. You attend PTA meetings, parent/teacher conferences, or other meetings at [Child's] school.

Positive Parenting Subscale

11. You let [Child] know when he/she is doing a good job with something.
12. You reward or give something extra to [Child] for obeying you or behaving well.
13. You compliment [Child] when he/she does something well.
14. You praise [Child] if he/she behaves well.
15. You hug or kiss [Child] when he/she has done something well.
16. You tell [Child] that you like it when he/she helps out around the house.

Appendix F: HIV Disclosure

1. Have you or anyone else disclosed to [Child] that you are HIV-positive?

- | | | |
|--------------------------|---|---|
| Yes, just me | <i>(skip to item 4)</i> | 1 |
| Yes, someone else | <i>(skip to item 3)</i> | 2 |
| Yes, me and someone else | <i>(skip to item 3)</i> | 3 |
| No, no one | <i>(go to item 2)</i> | 4 |
| Maybe | <i>(probe for exact wording, then go to item 2)</i> | 5 |

2. You did not disclose that you were HIV-positive to [Child]. Did you disclose anything about your illness to [Child]? For example, that you have an illness, even if you didn't tell him/her the name of the disease?

- | | |
|-----|---|
| Yes | 1 |
| No | 2 |

3. Who else was involved in disclosing to [child]?

a. Did you ask them to be involved in disclosing to [child]?

- | | |
|-----|---|
| Yes | 1 |
| No | 2 |

4. What exactly did you *(and/or the other person)* tell [Child]?

5. Did you use the word HIV or AIDS?

- | | |
|-----|---|
| Yes | 1 |
| No | 2 |

6. Did you use the word virus?

- | | |
|-----|---|
| Yes | 1 |
| No | 2 |

7. Did you say you are sick, or have some kind of “bug,” or a problem with your blood?

Yes 1

No 2

8. Did you say you had some other illness instead, like diabetes or cancer, which you don’t have?

Yes 1

No 2

Coding Criteria:

0 No disclosure

- No mention of sickness or illness
- Child knows that mother takes medication but not for illness
- Mother has told child that she has an illness that she does not have (such as cancer, diabetes, etc., when she does not have those illnesses)

1 Partial disclosure

- Mother has told child that she is sick or ill, and/or that she has to take medication for an illness, with no explicit mention of HIV or AIDS

2 Full disclosure

- Mother has told child about her illness using the word HIV or AIDS

Appendix G: Children's Depression Inventory

(Kovacs & Beck, 1977; Kovacs, 1985)

Instructions: *These questions are about how you have been feeling for the past two weeks. For each question there are three choices. Please pick the one that describes you best for the past two weeks. There are no right or wrong answers.*

- | | |
|--|---|
| 1. I am sad once in a while. | 1 |
| I am sad many times. | 2 |
| I am sad all the time. | 3 |
| 2. Nothing will ever work out for me. | 1 |
| I am not sure if things will work out for me. | 2 |
| Things will work out for me O.K. | 3 |
| 3. I do most things O.K. | 1 |
| I do many things wrong. | 2 |
| I do everything wrong. | 3 |
| 4. I have fun in many things. | 1 |
| I have fun in some things. | 2 |
| Nothing is fun at all. | 3 |
| 5. I am bad all the time. | 1 |
| I am bad many times. | 2 |
| I am bad once in a while. | 3 |
| 6. I think about bad things happening to me once in a while. | 1 |
| I worry that bad things will happen to me. | 2 |
| I am sure that terrible things will happen to me. | 3 |
| 7. I hate myself. | 1 |
| I do not like myself. | 2 |
| I like myself. | 3 |
| 8. All bad things are my fault. | 1 |
| Many bad things are my fault. | 2 |
| Bad things are not usually my fault. | 3 |
| 9. I do not think about killing myself. | 1 |
| I think about killing myself but I would not do it. | 2 |
| I want to kill myself. | 3 |
| 10. I feel like crying every day. | 1 |
| I feel like crying many days. | 2 |

| | |
|---|---|
| I feel like crying once in a while. | 3 |
| 11. Things bother me all the time. | 1 |
| Things bother me many times. | 2 |
| Things bother me once in a while. | 3 |
| 12. I like being with people. | 1 |
| I do not like being with people many times. | 2 |
| I do not want to be with people at all. | 3 |
| 13. I cannot make up my mind about things. | 1 |
| It is hard to make up my mind about things. | 2 |
| I make up my mind about things easily. | 3 |
| 14. I look O.K. | 1 |
| There are some bad things about my looks. | 2 |
| I look ugly. | 3 |
| 15. I have to push myself all the time to do my schoolwork. | 1 |
| I have to push myself many times to do my schoolwork. | 2 |
| Doing schoolwork is not a big problem. | 3 |
| 16. I have trouble sleeping every night. | 1 |
| I have trouble sleeping every night. | 2 |
| I sleep pretty well. | 3 |
| 17. I am tired once in a while. | 1 |
| I am tired many days. | 2 |
| I am tired all the time. | 3 |
| 18. Most days I do not feel like eating. | 1 |
| Many days I do not feel like eating. | 2 |
| I eat pretty well. | 3 |
| 19. I do not worry about aches and pains. | 1 |
| I worry about aches and pains many times. | 2 |
| I worry about aches and pains all the time. | 3 |
| 20. I do not feel alone. | 1 |
| I feel alone many times. | 2 |
| I feel alone all the time. | 3 |
| 21. I never have fun at school. | 1 |
| I have fun at school only once in a while. | 2 |
| I have fun at school many times. | 3 |
| 22. I have plenty of friends. | 1 |

| | |
|---|---|
| I have some friends but I wish I had more. | 2 |
| I do not have any friends. | 3 |
| 23. My schoolwork is all right. | 1 |
| My schoolwork is not as good as before. | 2 |
| I do very badly in subjects I used to be good in. | 3 |
| 24. I can never be as good as other kids. | 1 |
| I can be as good as other kids if I want to. | 2 |
| I am just as good as other kids. | 3 |
| 25. Nobody really loves me. | 1 |
| I am not sure if anybody loves me. | 2 |
| I am sure that somebody loves me. | 3 |
| 26. I usually do what I am told. | 1 |
| I do not do what I am told most times. | 2 |
| I never do what I am told. | 3 |
| 27. I get along with people. | 1 |
| I get into fights many times. | 2 |
| I get into fights all the time. | 3 |

Appendix H: Child Behavior Checklist

(Achenbach, 1978; 1991; Achenbach & Edelbrock, 1979)

***Directions:** I'm going to read a list of items that describe children and youth. For each item that describes [Child] now or within the past 3 months, please tell me if it is very true or often true, if it is somewhat or sometimes true, or if it is not true of your child. Please answer all items as well as you can, even if some do not seem to apply to [Child].*

| 1 | 2 | 3 |
|----------|----------------------------|-------------------------|
| Not True | Somewhat or Sometimes True | Very True or Often True |

Aggression Subscale

1. Argues a lot
2. Cruelty, bullying, or meanness to others
3. Demands a lot of attention
4. Destroys his/her own things
5. Destroys things belonging to her/her family or others
6. Disobedient at home
7. Disobedient at school
8. Gets in many fights
9. Physically attacks people
10. Screams a lot
11. Stubborn, sullen, or irritable
12. Sudden changes in mood or feelings

13. Suspicious
14. Teases a lot
15. Temper tantrums or hot temper
16. Threatens people
17. Unusually loud

Anxious/Depressed Subscale

1. Cries a lot
2. Fears he/she might think or do something bad
3. Feels he/she has to be perfect
4. Feels or complains that no one loves him/her
5. Feels worthless or inferior
6. Nervous, high-strung, or tense
7. Too fearful or anxious
8. Feels too guilty
9. Self-conscious or easily embarrassed
10. Worries

Appendix J: Mother Qualitative Interview Protocol

I. Introduction and Consent

[Interviewer introduces herself and asks participant to give her first name and the name and age of her child who participated in the TRACK-II study. Interviewer thanks participant for agreeing to participate in qualitative interview.]

[Interviewer reads consent form aloud to participant, allowing participant opportunities to ask questions.]

II. Reminder of Confidentiality and Interview Agenda (5 minutes)

Thank you for agreeing to participate in this important study about mothers and children. Today's interview should last about an hour and fifteen minutes.

I want to remind you that your answers are confidential – your name is not attached to any of this information. It is important that you answer as honestly as possible because your answers will be used to help us understand how we can meet some of the unique needs of moms with HIV.

Do you have any questions?

III. Icebreaker (5 minutes)

A. Interviewer asks participant to share a little bit about herself and her child.

Probes:

1. In one or two sentences, tell me a little bit about your child, [Child's name]—if you use a nickname for them, their age, and something positive about them—some characteristic that helps them in life.
2. Tell me a little bit about yourself—tell me about the challenges you face living with HIV, and one thing you hope to gain from these sessions.

IV. Child's Behavioral and Emotional Adjustment (15 minutes)

A. Tell me about [Child]'s behavior over the past month.

Probes:

1. How is [Child]'s behavior at home?
2. How is [Child]'s behavior at school?
3. How long does it usually take [Child] to follow instructions?

B. Tell me about how [Child] has been doing emotionally over the past month.

Probes:

1. What is [Child]'s mood on a typical day?
2. How often do you sense that [Child] is depressed, anxious, or angry?

3. Describe what [Child] is like when s/he is sad, worried, or angry.

V. Parenting (15 minutes)

- A. Tell me about your parenting style.

Probes:

1. How would you describe yourself as a parent?
2. Tell me about your day-to-day interactions with [Child].
3. What do you think are the most important things about being a good parent?

- B. Tell me about your biggest strengths in parenting.

Probes:

1. What do you feel good about in your parenting?
2. What do you notice about how [Child] reacts when you do [strength mentioned by mother]?

- C. What is something in your parenting you want to improve?

Probes:

1. What do you think needs the most improvement in your parenting?
2. What do you notice about how [Child] reacts when you do [difficulty mentioned by mother]?

- D. How do you notice that your parenting is affected by [Child]'s behavior or emotions?

Probes:

1. What behaviors of [Child]'s make it easier or harder to be a good parent?

VI. Parenting Stress (10 minutes)

- A. Tell me about what is hardest about being a parent.
B. Tell me about what is hardest about being a parent living with HIV.

VII. HIV Disclosure (20 minutes)

- A. You stated that you have disclosed your HIV status to [Child]. Tell me about the conversation.

Probes:

1. When did you tell [Child] about your HIV status?
2. At what point did you use the word HIV or AIDS in your conversations with [Child]? For example, did you first tell him/her that you were sick, and then use the word HIV or AIDS later?

- B. How did you decide to disclose your HIV status to [Child]? What led you to this decision?

- C. How did [Child] react to the news of your HIV status?

Probes:

1. What did [Child] say when you told her/him about your HIV status?
2. What questions, if any, did [Child] ask you during the disclosure?
3. What do you think [Child] was feeling during and immediately after the disclosure?

D. How did you feel about how you handled the disclosure?

Probes:

1. What went well during the disclosure?
2. What could have gone better?

E. Have you talked about your HIV with [Child] at all since the first conversation?

Probes:

1. [If yes:] What kinds of conversations have you had about your HIV since then?
2. What kinds of questions has [Child] asked about your HIV since then?
3. [If no:] Has [Child] expressed any interest in discussing your HIV since then, such as asking questions?
4. Do you think that [Child] feels he/she is allowed to ask you more questions or express feelings about your HIV? Why or why not?
5. During your first conversation, what did you tell [Child] about having future conversations about HIV?

F. When you first told [Child] about your HIV status, did you give him/her a list of “safe people” that he/she could talk to about your HIV?

Probes:

1. [If yes:] Who was on that list?
2. Has [Child] talked to any of those people?
3. What made you decide to give that list of “safe people”?
4. [If no:] Was this something you had considered before? If so, what made you decide not to give a list of “safe people”?

G. How has your stress level changed, if at all, since you told [Child] about your HIV status? Since telling [Child] about your HIV status, how have things changed for your family?

Probes:

1. How has [Child]’s behavior changed, if at all, since you told him/her about your HIV status?
2. How has [Child]’s mood changed, if at all, since you told him/her about your HIV status?
3. How has your relationship with [Child] changed, if at all, since you told him/her about your HIV status?

4. How has your parenting changed, if at all, since you told [Child] about your HIV status?
5. How has your stress level changed, if at all, since you told [Child] about your HIV status?

VIII. Wrap-up (5 minutes)

- A. Imagine you have a friend who was recently diagnosed with HIV and has a child [Child]'s age. What advice would you give her?

Probes:

1. Are there any resources, services, or organizations you would point her to?
- B. What are your family's strengths that helped you through the process of disclosing your HIV status to [Child]?
- C. What are your family's strengths that have helped you through difficult times?

Thank you for taking the time to talk with me today. You have been very helpful.

Before we end, do you have any other things you think would be important for us to know to understand your family's experience?

Do you have any questions for me?

How are you feeling now that we're done with the interview?

[Interviewer addresses any participant distress, thanks participant for her time, and pays participant.]

Appendix K: Child Qualitative Interview Protocol

I. Introduction and Assent

[Interviewer introduces herself and asks participant to give his/her first name and age. Interviewer thanks participant for agreeing to participate in qualitative interview.]

[Interviewer reads assent form aloud to participant, allowing participant opportunities to ask questions.]

II. Reminder of Confidentiality and Interview Agenda (5 minutes)

Today I'm going to ask you some questions about you and your family. If you have a question or are not sure about something, I want you to tell me and I'll try to explain it better. There are no right or wrong answers to the questions I'm going to ask you. I just want to know what you really think or feel. All your answers will be kept private. That means your mother will not know what you tell me.

Do you have any questions?

III. Icebreaker (5 minutes)

D. Interviewer asks participant to share a little bit about himself/herself.

Probes:

1. In one or two sentences, tell me a little bit about yourself—how old you are, if you have a nickname you like to use, and your favorite thing about yourself.

IV. Child's Behavioral and Emotional Adjustment (15 minutes)

a. Tell me about how you behave at home and school.

Probes:

4. How often do you get in trouble at home?
5. How often do you get in trouble at school?
6. What kinds of things do you usually get in trouble for?

b. People can have lots of different feelings. They can be happy, sad, worried, scared, angry, excited, or bored. Tell me about how you have been feeling lately.

Probes:

4. What is your mood like on a typical day?
5. How much of the time do you feel irritated, sad, angry, or scared? Tell me about those feelings.
6. What kinds of things make you feel upset?

V. Parenting (15 minutes)

a. Tell me about how your mother [grandmother] is as a parent.

Probes:

4. What are the things you like best about your mother?
5. What do you wish your mother did differently?

b. How does your mother usually make you feel?Probes:

1. How do you feel when your mother does [child's favorite thing about parent from A.1]?
2. How do you act when your mother does [child's favorite thing about parent]?
3. How do you feel when your mother does [child's difficulty from A2]?
4. How do you act when your mother does [child's difficulty from A2]?
5. If your mother punishes you for something and you push back, does she let you get away with it?

VI. HIV Disclosure (15 minutes)**a.** Your mother has told you that she is HIV positive. Tell me about that conversation.Probes:

1. When did she first tell you about her HIV status?

b. Did you know or suspect that your mother was HIV positive or sick before she told you?Probes:

1. What made you suspect that your mother was HIV positive?
2. How did you feel before she told you her HIV status?

c. How did you feel when your mother told you she is HIV positive?Probes:

1. What questions did you have for your mother when she told you her HIV status?
2. What was the hardest part of finding out your mother's HIV status?
3. Was there anything good about finding out the news?

d. When your mother told you about her HIV status, did she give you a list of "safe people" that you could talk to about her illness?Probes:

1. [If yes:] Who was on that list?
2. Have you spoken with any of the people on that list?
3. [If no:] How do you think things might be different if she had given you a list of "safe people" to talk to?

4. Do you feel like you have people, other than your mother, that you can speak with about your mother's HIV? If you have a question about your mother's HIV, who do you ask?
- e. Have you and your mother discussed HIV at all since the first time she told you?

Probes:

1. What kinds of follow-up conversations have you had since the first time she told you?
2. Do you feel like you can ask your mother more questions since she first told you?
- f. How have things changed for you and your family since your mother told you that she is HIV positive?

Probes:

1. How have you been feeling since your mother told you about her HIV status?
2. How has your relationship with your mother changed since she told you?

VII. Wrap-up (5 minutes)

- a. Imagine you have a friend your age whose mother recently found out she is HIV positive. What advice would you give your friend?
- b. What are your family's strengths that have helped you through difficult times?

Thank you for taking the time to talk with me today. You have been very helpful.

Before we end, do you have any other things you think would be important for us to know to understand your family's experience?

Do you have any questions for me?

How are you feeling now that we're done with the interview?

[Interviewer addresses any participant distress, thanks participant for his/her time, and pays participant with gift card.]