

# UCLA

## UCLA Previously Published Works

### Title

HIV and Mother–Child Conflict: Associations with Mother’s Mental and Physical Health

### Permalink

<https://escholarship.org/uc/item/8xt3z5w1>

### Journal

Child and Adolescent Social Work Journal, 36(6)

### ISSN

0738-0151

### Authors

Armistead, Lisa P  
Marellich, William D  
Schulte, Marya T  
[et al.](#)

### Publication Date

2019-12-01

### DOI

10.1007/s10560-019-00601-2

Peer reviewed



# HHS Public Access

Author manuscript

*Child Adolesc Social Work J.* Author manuscript; available in PMC 2020 December 01.

Published in final edited form as:

*Child Adolesc Social Work J.* 2019 December ; 36(6): 621–629. doi:10.1007/s10560-019-00601-2.

## HIV and Mother–Child Conflict: Associations with Mother’s Mental and Physical Health

**Lisa P. Armistead, Ph.D.,**

100 Auburn Avenue, Suite 308, Georgia State University, 404.413.2091, lparmistead@gsu.edu, Telephone: 404.413.2091

**William D. Marelich, Ph.D.,**

California State University-Fullerton, wmarelic@ucla.edu, Telephone: 626.993.4089

**Marya T. Schulte, Ph.D.,**

Univ. of California-Los Angeles, mtschulte@ucla.edu, Telephone: 310.267.5289

**Marylou Gilbert, J.D.,**

Univ. of California-Los Angeles, marylougilbert@mednet.ucla.edu, Telephone: 310.267.5289

**Debra A. Murphy, Ph.D.**

Univ. of California-Los Angeles, dmurphy@mednet.ucla.edu, Telephone: 619.955.8433

### Abstract

Maternal illness is a stressor that can disrupt family processes and contribute to negative child outcomes, and researchers have considered family variables that mediate or moderate the maternal illness-child outcome relationship. Through reliance on a diverse sample (ethnically and racially, as well as geographically), the current study expands prior literature with a focus on parent-child conflict. Specifically, associations between aspects of HIV positive mothers’ illness and mother-child conflict were explored. One goal of the study was to determine if there were direct or indirect associations with aspects of mothers’ HIV and mother-child conflict. HIV-positive mothers ( $N=136$ ) provided CD4 count and completed measures assessing their perceived level of physical functioning, depressive symptoms, HIV health-related anxiety, and mother-child conflict with their healthy school-age children. Path analysis considered the pattern of relationships across variables. Results showed maternal vitality and depressive symptoms were directly associated with mother-child conflict. CD4 cell count and health-related anxiety operated indirectly through maternal depressive symptoms. Mediation analyses further assessed the influence of maternal CD4 cell count on mother-child conflict behavior; results indicated an indirect effect was mediated by vitality. HIV health-related anxiety and vitality separately showed indirect effects on mother-child conflict, mediated by maternal depressive symptoms. These findings are the first to focus on mother-child conflict among children affected by maternal HIV and highlight the need for screening and intervention to address depressive symptoms among HIV-positive mothers.

## Keywords

HIV/AIDS; parent-child conflict; depressive symptoms

---

Research on maternal illness and child outcomes has grown over the past few decades – first with studies on the effect of parental cancer on children (e.g., Compas et al., 1994), and subsequently for children living with an HIV-positive parent. Behavioral problems in school-aged and young adolescent children are frequently reported in such studies (e.g., Chi & Li, 2013; Murphy & Marelich, 2008). Beyond studies examining whether a mother’s diagnosis of HIV impacts child functioning, researchers have considered the role of maternal illness severity or symptomatology on child functioning. Murphy and Marelich (2008) found that mothers with an AIDS diagnosis or symptomatic HIV had less resilient children than asymptomatic HIV+ mothers. Additionally, DeVane Fair (2006) found that children of mothers with symptomatic HIV, compared to those with asymptomatic mothers, were more likely to exhibit externalizing and internalizing problems. However, while there is consensus maternal HIV affects child outcomes across studies, there are gaps around how and why these outcomes occur.

Various aspects of parenting and family functioning (e.g., parental monitoring of child behavior, parent-child relationship quality) have been considered as researchers seek to understand mechanisms involved in the parental HIV-child functioning relationship (e.g., Murphy, Armistead, Marelich, & Herbeck, 2015). However, one family variable that has received limited attention among HIV-affected families is that of mother-child conflict. Mother-child conflict is important to explore given its relations with child adjustment problems, academic difficulties, and general distress among youth (Schlomer, Ellis, & Garber, 2010). Family stress theory (Figley & McCubbin, 1983) contends that stressors, particularly in the context of limited resources, can lead to conflict in familial relationships. HIV is arguably a particularly stressful illness due in part to persistent HIV stigma and that HIV often affects families who also experience high levels of other stressors, such as poverty and associated residence in poorly resourced communities (Centers for Disease Control and Prevention, 2017). Thus, mothers living with HIV (MLH) who are experiencing greater disease burden, measured in this study through a biological indicator (CD4 cell count) and self-reported physical symptoms are hypothesized to have greater conflict with their children.

## The Importance of Understanding Mother-Child Conflict

Family dysfunction is one of the most important predictors of emotional and behavioral problems in children with both ill and healthy parents (Thastum et al., 2009). In a review of the impact of parental cancer on children, Visser, Huizinga, vander Graaf, Hoekstra, and Hoekstra-Webers (2004) reported that studies showed poorer behavioral functioning among school age children, including having increased conflict with parents. Specifically, two studies reported such findings. Christ et al. (1993) studied the impact of parental cancer on latency-age children and found that older children often showed increased conflict with parents and siblings, as well as conflict with peers and adults. In fact, some parents were

very concerned with the amount of anger and disturbance children expressed at home. With respect to HIV-affected families but conceptualized more broadly than mother-child conflict, Forehand et al. (2002) demonstrated that children of African American mothers living with HIV reported poorer mother-child relationship quality, relative to children whose mothers were not HIV-positive. Through reliance on a very diverse sample of mothers, the current study expands upon the prior literature, and through a specific focus on mother-child conflict, deepens the literature examining the impact of parental illness on family processes.

## **Consideration of Factors Operating Between Maternal Illness and Mother-Child Conflict**

It is also possible that maternal illness influences mother-child conflict through intermediary variables. One such intermediate variable may be maternal depression. Some research suggests that depression is higher among women living with HIV than among their HIV-negative counterparts (e.g., Brackis-Cott, Mellins, Dolezal, & Spiegel, 2007). Researchers have also demonstrated the impact of maternal depression on child outcomes in non-HIV affected families (for a review, see Goodman et al., 2011), as well as HIV-affected families (e.g., Chi et al., 2015). Further, within HIV-affected families, research links mothers' depressive symptoms with aspects of family functioning, including family cohesion (Murphy, Marelich, Dello Stritto, Swendeman, & Witkin, 2002) and parental responsiveness (e.g., Chi et al., 2015). The current study expands the literature by considering whether mothers' HIV-related physical functioning is associated with mother-child conflict by operating through mothers' depressive symptoms.

Health-related anxiety may be another intermediate factor in the associations between physical health and mother-child conflict. Among women living with HIV, anxiety related to thoughts of being HIV-positive has been linked to measures of mood and behaviors for mothers, as well as that of their young and adolescent children (Murphy, Marelich, Armistead, Herbeck, & Payne, 2010). In the Parents and Children Coping Together (PACT) project, a longitudinal series of studies examining the outcomes of children living with HIV-positive mothers, greater health-related anxiety was associated with child depression and child aggression (Murphy, Marelich & Herbeck, 2012). Not yet explored but considered in the current study is whether mothers' health-related anxiety serves as a mediator in the maternal illness-mother-child conflict relation.

## **The Developmental Course of Mother-Child Conflict**

A brief note on the developmental course of mother-child conflict is needed, as child age is a variable included in this study. A meta-analysis of changes in parent-child conflict across adolescence found that parent-child conflict rates and total conflict decline across the adolescent years (Laursen, Coy, & Collins, 1998). On the other hand, the affective intensity of conflict increases from early adolescence to mid-adolescence. Declines in conflict rate were hypothesized to reflect the decline in overall interaction, since parents and children are together less as the child ages.

## Purpose of the Present Study

While previous literature indicated that children of mothers living with HIV/AIDS have poorer outcomes than children of non-infected mothers, the purpose of the present study was to specifically focus on the association between multiple physical aspects of mother's illness and how they are associated with mother-child conflict in particular. Family stress theory offers a compelling case for considering the linkage between HIV illness and family conflict, and research supports the negative influence that conflict has on child outcomes. Yet mother-child conflict has not been adequately explored in the HIV literature. The current study also expands the literature by including a broad conceptualization of mothers' physical functioning. Very few studies (e.g., Murphy, Marelich, Herbeck, & Cook, 2016) have considered multiple indicators of mothers' HIV-related physical symptoms with respect to their relations with family outcomes such as conflict. Thus, consistent with Rolland's (1987) typology of illness, both disease course, i.e., CD4 count, and degree of incapacitation (as indicated by self-report of vitality and role limitations), are considered in the current study. Both path analytic and mediation analyses are used to evaluate the associations.

## Method

### Participants

Mothers living with HIV (MLH) and their children were recruited as part of a full-scale, longitudinal, randomized, controlled trial for the Teaching, Raising, and Communicating with Kids (TRACK) project, an intervention designed to help MLH disclose their HIV serostatus to their children. MLH were recruited for the study through various community workshops, social service agencies, and medical service organizations in two geographical areas: Southern California (Los Angeles and San Diego, CA), and Atlanta, GA. Eligibility required that mothers have a confirmed HIV diagnosis, be English or Spanish speaking, and be the primary caregivers of at least one HIV negative child between the ages of 6 and 14 who was unaware of the mother's HIV/AIDS serostatus. If there was more than one child in the targeted age range, the target child was selected randomly. Participants were ineligible if they had a developmental or other mental health disorder that would prevent them from responding to interview questions. The study included a screener to determine eligibility and a baseline assessment and three follow up assessments for mother-child dyads at 3-, 9- and 15-months.

For the current analysis, baseline data were utilized from 136 mother-child dyads. Across both cities, the mean age for mothers was 40.0 years ( $SD = 7.9$ ) at baseline. For children, mean age was 9.7 ( $SD = 2.6$ ), and 52.9% were female. Percent of mothers self-identifying Hispanic/Latina origin was 35.3%, with 55.1% African-American, 4.4% White, and 5.2% mixed or other race/ethnicity. Most mothers reported they had never been married (40.4%), whereas 22.8% were currently married, and 27.2% were separated or divorced. Almost 10% of mothers were widowed. The percent of mothers reporting at least a high school education (including GED) was 56.7%, with 36.8% attending at least some college or vocational school. Approximately 31.6% of mothers were employed in the past 30 days, with an average total monthly income of \$978 ( $SD = \$945$ ). CD4 cell count mean was 626.9 ( $SD = 375.5$ ), with a median of 594.

## Procedures

The Institutional Review Boards of both Universities approved all procedures. After determining eligibility, mothers and their children provided informed consent and assent, respectively, in either English or Spanish for mothers based on their preference, and in English for children. Consent/assent forms were read aloud to participants. Study activities occurred at the participants' home or other location selected by the participant that afforded the required privacy. Research staff included experienced survey interviewers, who received extensive training in conducting various field activities, such as recruitment, administering informed consent, confidentiality, handling of adverse events, strategies to engage child participants and tracking and retention efforts. Mothers were interviewed separately on computer-assisted personal interviewing (CAPI) software. After the conclusion of the baseline assessment, participants were randomized into either the control or intervention group. The TRACK-II intervention consisted of three structured, curriculum-based, manualized, 75-minute sessions between an intervention facilitator and randomly selected mothers. With permission, interviews and intervention sessions were audio-recorded for quality assurance purposes. Mother interviews lasted about 75 minutes, and child interviews lasted about 45 minutes. Incentives were provided for each completed assessment; mothers received \$60 in cash and children received a \$30 gift card.

When available, standard Spanish versions of included measures were used. All remaining measures for Spanish-speaking participants were translated by the World Translation Center in San Diego, CA, and then checked by a team of three translators. Additionally, these measures were then back-translated as suggested by Marin and Marin (1991).

## Measures

### **Maternal biopsychosocial measures.**

**Physical health and functioning.** Self-reported maternal CD4 count (see Kalichman, Ropa, & Cage, 2000) was used as an indicator of mothers' physical health status.

Two subscales, vitality and role limitations due to physical functioning, were utilized from the MOS-36 Item Short Form Health Survey (Ware & Sherbourne, 1992) to assess mothers' perceived level of physical functioning. Higher scores correspond to greater vitality (example item; "Did you feel tired?"), and less role interference due to physical functioning (example item; "Accomplished less than you would like?"). Items were scored on a six-point scale ranging from 1 (all of the time) to 6 (none of the time). Alphas for the measures were .87 and .88 for vitality and role limitations due to physical functioning, respectively.

**Mental health.** The HIV Health-Related Anxiety measure (Murphy, Moscicki, Vermund, & Muenz 2000; Schulte et al., 2018) was used to assess the degree to which mothers experienced anxiety due to thinking about their HIV/AIDS status and health during the past week in four separate areas: sleep, appetite, desire to engage in social activities, and ability to concentrate at school or work (example item; "During the past week: You were thinking about HIV infection/AIDS and your health, and because of that you had no desire to go out and do any social activities with other people"). Items were rated on a 5-point scale ranging

from 1 (not at all) to 5 (always). Higher scores indicate greater HIV health-related anxiety. Current sample Cronbach's alpha was .90.

The CES-D (Radloff, 1977) was used to assess mothers' self-reported depressive symptoms, with higher scores indicating more frequent symptoms. A sample item includes, "I felt that I could not shake off the blues, even with help from family or friends." Cronbach's alpha was .80.

**Mother-child conflict.**—Mothers completed the Conflict Behavior Questionnaire (CBQ; Robin & Foster, 1989), a 20-item measure of conflict behaviors within the mother-child relationship. Higher scores indicate better relationship quality, and scores may range from 20 to 40. Sample items include, "At least three times a week, my child and I get angry at each other", and "In general, we don't get along very well." Current sample alpha was .89.

## Analysis

Prior to model evaluation, descriptive statistics are presented, including variable means, standard deviations, and correlations (see Table 1). A saturated path model (Cohen & Cohen, 1983; Cohen, Cohen, West, & Aiken, 2003) was applied to decompose the predictor variable correlations with parent-child conflict into direct, indirect, and effects due to common causes, accounting for all measured variable associations (i.e., correlations). Path analysis was utilized instead of covariance structural modeling since the goal was a full decomposition of the predictor variable correlations with mother-child conflict, not modeling the outcome nor the development of latent constructs. Although OLS regression procedures are typically applied to evaluate path models, the current study utilized a maximum-likelihood approach within the structural equation modeling framework through EQS (Bentler, 2006) on the covariance matrix, which beyond generating direct effects also provides indirect effects through a Sobel test extension for mediation testing. No fit statistics are generated since the number of model parameters are equal to the number of non-redundant elements in the covariance matrix. Mediation analyses using EQS with methods similar to above (including the Sobel test extension) were then performed to further assess the influence of maternal CD4 cell count and biopsychosocial variables on mother-child conflict behavior.

## Results

Prior to the main analysis, evaluation of correlations across the measures is offered. Based on values in Table 1, depressive symptoms, HIV health-related anxiety, and the two MOS subscales all had significant correlations with mother-child conflict. Mothers who reported greater mother-child conflict also reported higher levels of depressive symptoms ( $r = 0.35$ ), HIV health-related anxiety ( $r = 0.20$ ), and reported their physical health affects daily activities ( $r = -0.15$ ) with less vitality ( $r = -0.30$ ). For depressive symptoms and other maternal psychosocial measures, correlations in the expected direction were noted with greater depressive symptoms associated with more HIV health-related anxiety, less vitality, and more role interference due to physical health. Child age showed a marginally significant correlation with vitality (greater maternal vitality associated with older children;  $r = 0.16$ ). Maternal CD4 cell count was significantly correlated with both MOS measures, such that

higher CD4 cell counts associated with less role interference due to physical health ( $r=0.17$ ) and greater vitality ( $r=0.21$ ).

### Path Analytic Model

Figure 1 contains the saturated path model with correlations and significant direct effects (all direct effects are noted in Table 2). The hierarchical order can be seen in Figure 1, starting with maternal CD4 cell count and child age as exogenous variables, followed by the endogenous sets addressing maternal wellness (the MOS Measures and health-related anxiety), and maternal depression, which in turn predict conflict behavior.

Moving across Figure 1, results indicate CD4 cell count had a direct effect on both MOS measures, with higher CD4 counts associated with lower levels of role interference due to physical health and greater vitality (direct effects of 0.17 and 0.22, respectively). Child age had a direct effect of 0.17 on vitality; having older children was associated with greater vitality. HIV health-related anxiety and both MOS measures evidenced significant effects on maternal depressive symptoms; greater HIV health-related anxiety was associated with more maternal depressive symptoms (direct effect of 0.36), and lower levels of vitality and greater role interference due to physical health were associated with greater maternal depressive symptoms (direct effects of  $-0.28$  and  $-0.15$ , respectively). Overall, child age, CD4 cell count, both MOS measures, and health-related anxiety account for 43% of the total variance (based on  $R^2$ ) in maternal depressive symptoms.

For the main outcome -- mother-child conflict behavior -- both direct and indirect effects are of interest (see Table 2). Vitality and maternal depressive symptoms show significant direct effects on mother-child conflict behavior; lower levels of vitality and more maternal depressive symptoms are associated with increased mother-child conflict behavior (direct effects of  $-0.20$  and  $0.30$ , respectively). Indirect effects reflect both full and partial mediation of the exogenous variables on mother-child conflict behavior. Looking at the indirect effects in Table 2, lower maternal CD4 cell count had an indirect effect on mother-child conflict ( $-0.08$ ), mediated by other variables in the model. Higher health-related anxiety and lower levels of vitality were associated with greater mother-child conflict behavior as mediated by maternal depressive symptoms (indirect effects of  $0.11$  and  $-0.08$ , respectively). Overall, approximately 16% of the total variation (based on  $R^2$ ) in mother-child conflict behaviors could be accounted for by the direct and indirect effects of these measures.

Spurious effects are those attributed to common causes (i.e., predictor variable overlap), and is the remainder of the correlation between a predictor and mother-child conflict behavior not explained by direct and/or indirect effects. For example, as noted in Table 2, the correlation between role interference due to physical health and mother-child conflict behavior ( $r=-0.15$ ) is primarily explained as an overlap with other variables in the model (i.e., common causes), with little direct effect ( $0.07$ ) remaining on mother-child conflict. This is not surprising given the correlation role interference has with other predictors in the model that have a stronger impact on mother-child conflict. In comparison, although half of the correlation between health-related anxiety and mother-child conflict behavior ( $r=0.20$ ) can be explained through common causes (spurious effect of  $0.10$ ), a significant indirect



effect of 0.11 is still evident--suggesting health-related anxiety, mediated by maternal depression, continues to have an influence on mother-child conflict.

In summary, based on direct and indirect effects, mother-child conflict behavior was influenced directly by maternal depressive symptoms and vitality, and indirectly by CD4 cell count, vitality, and health-related anxiety. The strongest predictor of mother-child conflict was maternal depressive symptoms. Overall, 16% of the total variability in mother-child conflict behaviors can be accounted for by the predictors in the model.

### **Relationship between CD4 cell count and Mother-Child Conflict**

As noted above, CD4 cell count indirectly influenced mother-child conflict. However, without further deconstruction of these findings, it is hard to discern through which avenue CD4 cell count influences mother-child conflict. Based on Table 2 findings, two other variables had indirect associations with mother-child conflict, mediated by symptoms of maternal depression. To evaluate whether the effect of CD4 cell count on mother-child conflict was mediated by these biopsychosocial variables, separate mediation analyses were performed. Further, since maternal depressive symptoms had a strong direct influence on mother-child conflict, the CD4 cell count finding was explored after removing depressive symptoms from the set of associations.

Removing maternal depressive symptoms, the broader path model was partitioned into a series of 3-variable models to better assess the effects of CD4 cell count on mother-child conflict, separately using each of the biopsychosocial variables as mediators (i.e., HIV health-related anxiety, vitality, and role interference due to physical health). This assesses (a) the indirect relationship between CD4 cell count and mother-child conflict, mediated by HIV health-related anxiety, and (b) the indirect relationship between CD4 cell count and mother-child conflict, mediated by vitality or role interference. All analyses were performed in EQS on the covariance matrix applying a maximum-likelihood solution.

Of the three mediation analyses, the only one yielding significant indirect effects of maternal CD4 cell count on mother-child conflict behavior is vitality. Maternal CD4 cell count had an indirect effect on mother-child conflict behaviors, mediated by vitality (standardized indirect effect [SIE] =  $-0.07$ ,  $p < .05$ ); lower CD4 cell count led to lower levels of vitality, which in turn led to greater mother-child conflict.

### **Relationship between Select Biopsychosocial Variables and Mother-Child Conflict**

Beyond CD4 cell count, the indirect effects for two of the biopsychosocial variables (HIV health-related anxiety and vitality) on mother-child conflict, mediated by maternal depressive symptoms were further clarified. Both child's age and CD4 cell count may have influenced the indirect effect findings, given their associations with these variables noted in Table 1. Further, these variables were correlated with each other, which may have also influenced the overall effects. Removing the two exogenous variables (child age and CD4 cell count) and focusing again on simple three-variable mediation models, the indirect

relationship between HIV health-related anxiety and mother-child conflict, mediated by maternal depressive symptoms was assessed, as was the indirect relationship between vitality and mother-child conflict, mediated by maternal depressive symptoms. As in the prior section, all analyses were performed in EQS on the covariance matrix applying a maximum-likelihood solution.

Overall, significant findings at the .05 or better level were noted for both analyses, with HIV health-related anxiety (standardized indirect effect [SIE] = 0.20) and vitality (SIE = -0.13) separately showing indirect effects on mother-child conflict, mediated by maternal depressive symptoms. As health-related anxiety increased, greater maternal depressive symptoms were reported. As mother's vitality declined, maternal depressive symptoms increased. For each of these (greater anxiety, less vitality), greater mother-child conflict was reported.

## Discussion

Like mothers with other illnesses (e.g., cancer), those living with HIV must balance the demands of managing their illness while parenting their children. However, relative to women with other illnesses, there are factors unique to women living with HIV, including stigma, economic instability, and marginalization based on race, ethnicity, or socioeconomic status (Center for Disease Control and Prevention, 2017). These factors can further complicate the balance of managing an illness and parenting. The purpose of the present study was to focus on the associations between aspects of mother's illness (i.e., biological markers such as CD4, and self-report measures of vitality and role interference), her mental health, and how these factors related to mother-child conflict. While many studies have addressed maternal illness and family cohesion or parent-child closeness, very few studies of maternal illness and the child relationship have focused on parent-child conflict, important due to its association with negative child outcomes (Thastum et al., 2009). In addition, though prior research has addressed some of these relations, this study expands our understanding with an examination of direct and indirect associations, among a geographically, ethnically and racially diverse sample.

Preliminary correlations demonstrated relations in the expected directions. Consistent with family stress theory (Figley & McCubbin, 1983), mother-reported physical and psychological functioning were associated with level of conflict in the mother-child relationship, providing evidence that the stress associated with HIV-related physical and emotional functioning spills into family relations. To our best knowledge, previous studies have not found direct or indirect associations with biological markers of mothers' HIV physical functioning and mother-child conflict, so this study adds to the research literature in attempting to understand the paths to mother-child conflict in families affected by HIV/AIDS.

Path analysis sought to illuminate the ways in which mothers' physical and mental health associated with mother-child conflict. Directly impacting this primary outcome variable were maternal vitality and depressive symptoms. Indirectly impacting mother-child conflict were CD4 cell count and health-related anxiety, which operated through maternal depressive

symptoms to contribute variance to this outcome. Combined, maternal variables accounted for 16% of the variance in mother-child conflict, and maternal depressive symptoms appears to be at the hub of these connections. These findings offer support for previous research on the impact of maternal illness on family factors (e.g., Murphy et al., 2015), as well as research associating maternal depression with child functioning more broadly (e.g., Goodman et al., 2011). Of note is the illness level of our sample mothers. Both mean and median CD4 cell counts exceeded 500, suggesting on average that our mothers were relatively healthy. As anti-retroviral therapies have increased in efficacy and accessibility, research on the impact of parental HIV has evolved from a focus on HIV-affected families coping with illness progression and parental death to management of a chronic illness while parenting. The current study is well situated within this evolution but does call into question comparison of these results to results of studies conducted in the 1990s and early 2000s. Regardless, even with a relatively healthy sample of HIV positive mothers, CD4 directly and indirectly influenced both psychosocial and mother-child conflict outcomes.

In the absence of published studies focused specifically on parent-child conflict in HIV-affected families, this study points to the importance of better understanding relations between this aspect of family functioning and an HIV+ mother's physical and mental health. The broader literature (e.g., Schlomer et al., 2010; Thastum et al., 2009) makes clear that parent-child conflict plays an important role in the lives of children. This study contributes to the extant literature, both mothers' physical and emotional health leading to mother-child conflict and, given the cross-sectional nature of these data, the possibility that greater mother-child conflict negatively impacts maternal health.

### Implications

These findings further point to the need for screening and intervening around maternal depression in the context of HIV-infection, and also of anxiety (in particular, health-related anxiety). This point may be particularly salient given that women in this sample were reporting symptoms of depression and had not necessarily been diagnosed with major depressive disorder. That is, even sub-clinical levels of depression appear to impact individual and family processes and, as demonstrated elsewhere (Gonzalez, Batchelder, Psaros, & Safren, 2011), depressive symptoms can also impact medication adherence, and thus overall health, further compromising individual and family functioning. Early intervention around depressive symptomatology is important. Unfortunately, based on the demographic characteristics of many women living with HIV and the persistent stigma hovering around this illness (Centers for Disease Control and Prevention, 2017), health disparities restrict access to evidence-based treatment for depression. To maximize access to treatment, screening and intervention services may best be offered in conjunction with or proximal to HIV medical treatment. Beyond benefits to the mother living with HIV, comprehensive treatment may provide benefits to children affected by maternal illness as well.

The key finding of the current study, that maternal health significantly influences mother-child conflict, is particularly important for social workers given the field's focus on family and child welfare. Social workers engaged with HIV affected families should be aware that

maternal physical and mental health status may be impacting the children in previously unexpected ways. Social workers should check-in with children about their perceptions regarding parent-child interactions and discuss the children's concerns with mother and child present in order to facilitate understanding and provide healthier methods of communication. Furthermore, social workers should have an understanding of what the mothers are receiving in terms of other services. Mothers in many areas are likely not receiving integrative care for their general health and HIV, and even more may not be receiving any services for mental health. As such, social workers should be educated about their clients' access to services, the quality of those services, and how often mothers are using the services that are available to them. Given how limited good, reliable care may be in some geographical regions, providing information about transportation in addition to referrals may be necessary. In terms of policy change, advocacy for additional funds that support greater community outreach and home visits would be helpful in meeting people where they are, especially in the contest of physical or psychological impairment associated with HIV, as ability and desire to leave the home are negatively impacted by all conditions.

### Limitations

While providing a nuanced understanding of the role of maternal health in mother-child conflict, this study does have limitations. Consistent with most previous research focusing on the impact of parental HIV on child functioning, our sample did not include fathers living with HIV. With the exception of fathers infected with HIV via blood products used to treat their hemophilia, studies with HIV-affected families have focused on mothers. Future research should consider the role that fathers' illness may play in child functioning if possible. Additionally, all measures relied upon maternal self-report, which can contribute common reporter method variance. Finally, the study is cross-sectional in nature, and thus neither causality nor the directionality of the effects can be guaranteed. Future studies would benefit from a longitudinal design and inclusion of child report of relationship quality, or perhaps even observational assessments of parent-child interactions.

### Conclusions

In summary, this article is one of the first to conduct an in-depth investigation of mothers affected by HIV/AIDS and parent-child conflict, and more importantly one of the first to find direct and indirect associations with biological markers of MLH physical functioning and mother-child conflict. Mother-child conflict can set up a pattern of behavior that influences families and child outcomes for years: outcomes that may include costs economically in terms of child mental health services, costs related to dealing with potential negative long-term outcomes of the children, and costs related to mothers' mental and physical health—especially among a population of mothers with already compromised immune systems. Increasing awareness of the need for screening for depression and anxiety among MLH, even in cases where symptoms do not rise to the level of diagnosis, and referral for family counseling may be an early preventative measure. The goal would be for MLH and their early adolescent or later adolescent children to be aware of the possibility of increased conflict associated with MLH fatigue/vitality in order to prevent initiation of conflict or prevent a cycle of mother-child conflict that escalates over time. Strategies for family negotiation and parenting skills may assist those MLH who are dealing with lower

vitality, depression, and health-related anxiety to prevent adverse levels of mother-child conflict.

## Acknowledgments

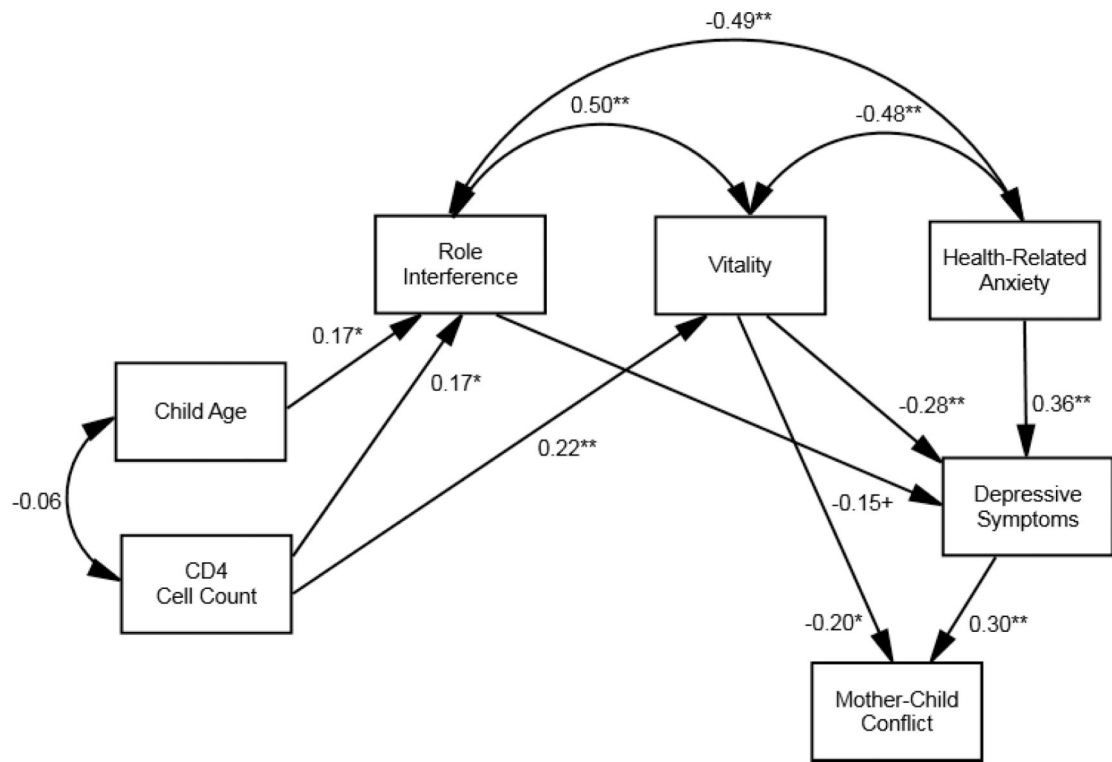
Research reported in this manuscript was supported by the National Institute of Mental Health of the National Institutes of Health by Grant Numbers 5R01MH094233 (PI: Lisa P. Armistead) and 5R01MH094148 (PI: Marya T. Schulte). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Special thanks to Erika Becker, University of California, Los Angeles, for her assistance on the path figure.

## References

- Bentler PM (2006). EQS 6 structural equations program manual. Encino, CA: Multivariate Software, Inc.
- Brackis-Cott E, Mellins CA, Dolezal C, & Spiegel D (2007). The mental health risk of mothers and children: The role of maternal HIV infection. *The Journal of Early Adolescence*, 27(1), 67–89. doi: 10.1177/0272431606294824
- Centers for Disease Control and Prevention (2017). HIV/AIDS: Risk by racial/ethnic groups. Retrieved from <https://www.cdc.gov/hiv/group/raciaethnic/index.html>
- Chi P & Li X (2013). Impact of parental HIV/AIDS on children's psychological well being: A systematic review of global literature. *AIDS and Behavior*, 17, 2554–2574. [PubMed: 22972606]
- Chi P, Li X, Tam CC, Du H, Zhao G & Zhao J (2015). Parenting mediates the impact of caregivers' distress on children's well-being in families affected by HIV/AIDS. *AIDS and Behavior*, 19, 2130–2139. [PubMed: 26078116]
- Christ GH, Siegel K, Freund B, Langosch D, Hendersen S, Sperber D, & Weinstein L (1993). Impact of parental terminal cancer on latency-age children. *American Journal of Orthopsychiatry*, 63(3), 417–425. [PubMed: 8372908]
- Cohen J, & Cohen P (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, New Jersey: Erlbaum.
- Cohen J, Cohen P, West SG, & Aiken LS (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, New Jersey: Erlbaum.
- Compas BE, Worsham NL, Epping JE, Grant KE, Mireault G, Howell DC, & Malcarne VL (1994). When mom or dad has cancer: Markers of psychological distress in cancer patients, spouses, and children. *Health Psychology*, 13, 507–515. [PubMed: 7889905]
- DeVane Fair C (2006). The emotional and educational functioning of children living with maternal HIV/AIDS and substance use. *Child and Adolescent Social Work Journal*, 23(3), 356–374. doi: 10.1007/s10560-006-0056-7
- Figley CR, & McCubbin M (1983). *Stress and the family*. New York, Brunner/Mazel.
- Forehand R, Jones DJ, Kotchick BA, Armistead L, Morse E, Morse PS, & Stock M (2002). Noninfected children of HIV-infected mothers: A 4-year longitudinal study of child psychosocial adjustment and parenting. *Behavior Therapy*, 33(4), 579–600. doi:10.1016/S0005-7894(02)80018-1
- Gonzalez JS, Batchelder AW, Psaros C, & Safren SA (2011). Depression and HIV/AIDS treatment nonadherence: a review and meta-analysis. *Journal of Acquired Immuno Deficiency Syndrome*, 58(2), 181–187. doi:10.1097/QAI.0b013e31822d490a
- Goodman SH, Rouse MH, Connell AM, Broth MR, Hall CM, & Heyward D (2011). Maternal depression and child psychopathology: a meta-analytic review. *Clinical Child and Family Psychology Review*, 14(1), 1–27. doi:10.1007/s10567-010-0080-1 [PubMed: 21052833]
- Kalichman SC, Rompa D, & Cage M (2000). Reliability and validity of self-reported CD4 lymphocyte count and viral load test results in people living with HIV/AIDS. *International Journal of HIV & AIDS*, 11, 579–585.

- Laursen B, Coy KC, & Collins WA (1998). Reconsidering changes in parent-child conflict across adolescence: a meta-analysis. *Child Development*, 69(3), 817–832. [PubMed: 9680687]
- Marín G, & Marín BV (1991). *Research with Hispanic populations*. Thousand Oaks, CA: Sage Publications.
- Murphy DA, Armistead L, Marelich WD, \* Herbeck DM (2015). Parenting deficits of mothers living with HIV/AIDS who have young children. *Vulnerable Children and Youth Studies: An International Interdisciplinary Journal for Research, Policy, and Care*, 10, 41–54.
- Murphy DA, & Marelich WD (2008). Resiliency in young children whose mothers are living with HIV/AIDS. *AIDS Care*, 20(3), 284–291. doi:10.1080/09540120701660312 [PubMed: 18351474]
- Murphy DA, Marelich WD, Armistead L, Herbeck DM, & Payne DL (2010). Anxiety/stress among mothers living with HIV: effects on parenting skills and child outcomes. *AIDS Care*, 22(12), 1449–1458. doi:10.1080/09540121.2010.487085 [PubMed: 20824552]
- Murphy DA, Marelich WD, & Herbeck DM (2012). Impact of maternal HIV health: a 12-year study of children in the Parents And Children Coping Together project. *Journal of Adolescent Health*, 51(4), 313–318. doi:10.1016/j.jadohealth.2011.12.025 [PubMed: 22999830]
- Murphy DA, Marelich WD, Dello Stritto ME, Swendeman D, & Witkin A (2002). Mothers living with HIV/AIDS: Mental, physical, and family functioning. *AIDS Care*, 14, 633–644. [PubMed: 12419113]
- Murphy DA, Marelich WD, Herbeck DM, & Cook M (2016). Career readiness and externalizing behaviors of children affected by maternal HIV/AIDS: 15-year outcomes of the PACT study. *Vulnerable Child Youth Studies*, 11(3), 223–237. doi:10.1080/17450128.2016.1217113
- Murphy DA, Moscicki AB, Vermund SH, & Muenz LR (2000). Psychological distress among HIV+ adolescents in the REACH study: Effects of life stress, social support and coping. *Journal of Adolescent Health*, 27(6), 391–398. doi:10.1016/S1054-139X(00)00158-0 [PubMed: 11090741]
- Radloff LS (1977). The CES-D Scale. *Applied Psychological Measurement*, 1(3), 385–401. doi: 10.1177/014662167700100306
- Robin AL, & Foster SL (1989). *Negotiating parent-adolescent conflict: A behavioral-family systems approach*. New York: Guilford Press.
- Rolland J (1987). Chronic illness and the life cycle: A conceptual framework. *Family Process*, 26, 203–221. [PubMed: 3595826]
- Schlomer GL, Ellis B, J., & Garber J (2010). Mother-child conflict and sibling relatedness: A test of hypotheses from parent-offspring conflict theory. *Journal of Research on Adolescence*, 20, 287–306.
- Schulte MT, Marelich WD, Payne DL, Tarantino N, Armistead LP, & Murphy DA (2018). Validation of a brief measure of HIV health-related anxiety among women living with HIV. *Research in Nursing and Health*, doi:10.1002/nur.21876.
- Thastum M, Watson M, Kienbacher C, Piha J, Steck B, Zachariae R, ... Romer G (2009). Prevalence and predictors of emotional and behavioural functioning of children where a parent has cancer: a multinational study. *Cancer*, 115(17), 4030–4039. doi:10.1002/cncr.24449 [PubMed: 19517480]
- Visser A, Huizinga GA, van der Graaf WT, Hoekstra HJ, & Hoekstra-Weebers JE (2004). The impact of parental cancer on children and the family: a review of the literature. *Cancer Treatment Review*, 30(8), 683–694. doi:10.1016/j.ctrv.2004.06.001
- Ware JE Jr., & Sherbourne CD (1992). The MOS 36-item short-form health survey (SF-36): Conceptual framework and item selection. *Medical Care*, 30(6), 473–483. [PubMed: 1593914]



**Figure 1:** Saturated path model with correlations and significant direct effects (standardized) predicting mother-child conflict behavior from child age and maternal biopsychosocial measures (N = 136).

**Table 1.**

Correlations, means, and standard deviations of mother-child conflict, child age and maternal biopsychosocial measures (N = 136).

	Y1	X1	X2	X3	X4	X5	X6
Y1 Mother-Child Conflict	1						
X1 Child Age	-0.08	1					
X2 CD4 Cell Count	0.04	-0.06	1				
X3 Health-Related Anxiety	0.20*	0.10	-0.14	1			
X4 Vitality	-0.30**	0.16 <sup>+</sup>	0.21*	-0.48**	1		
X5 Role Interference	-0.15 <sup>+</sup>	-0.03	0.17*	-0.49**	0.50**	1	
X6 Depressive Symptoms	0.35**	0.03	-0.17*	0.57**	-0.52**	-0.47**	1
Mean (SD)	5.05 (4.83)	9.70 (2.61)	626.9 (375.8)	7.3 (4.14)	13.9 (5.12)	6.3 (1.70)	39.3 (12.91)

<sup>+</sup> p < .10

\* p < / = .05

\*\* p < .01



**Table 2 -**

Summary of direct, indirect, and spurious effects on mother-child conflict from child age and maternal biopsychosocial measures.

Predictor	Correlation	Direct	Indirect	Spurious <sup>I</sup>
Child Age	-0.08	-0.05	-0.03	-
CD4 Count	0.04	0.11	-0.08*	-
Health-Related Anxiety	0.20*	-0.01	0.11*	0.10
Vitality	-0.30**	-0.20*	-0.08*	-0.02
Role Interference	-0.15 <sup>+</sup>	0.07	-0.04	-0.18
Depressive Symptoms	0.35**	0.30**	-	0.05

<sup>+</sup>  
p < .10

\*

p </.05

\*\*

p < .01

<sup>I</sup>  
Note: Spurious or common cause effects are not assessed for significance