Published in final edited form as:

AIDS Behav. 2018 December ; 22(12): 3807–3814. doi:10.1007/s10461-018-2042-4.

Does Maternal HIV Disclosure Self-Efficacy Enhance Parent–Child Relationships and Child Adjustment?

Lisa Armistead¹, Nada Goodrum¹, Marya Schulte², William Marelich³, Rebecca LeCroix¹, and Debra A. Murphy²

¹Department of Psychology, Georgia State University, P.O. Box 3999, Atlanta, GA 30303-3999, USA

²University of California-Los Angeles, Los Angeles, USA

³California State University-Fullerton, Fullerton, CA, USA

Abstract

Nondisclosure of maternal HIV status to young children can negatively impact child functioning; however, many mothers do not disclose due to lack of self-efficacy for the disclosure process. This study examines demographic variations in disclosure self-efficacy, regardless of intention to disclose, and assesses the relationship between self-efficacy and child adjustment via the parent–child relationship among a sample of HIV+ mothers and their healthy children ($N = 181$ pairs). Mothers completed demographic and self-efficacy measures; children completed measures assessing the parent–child relationship and child adjustment (i.e., worry, self-concept, depression). Across demographics, few mothers reported confidence in disclosure. Results from covariance structural modeling showed mothers endorsing higher self-efficacy had children who reported better relationship quality, and, in turn, reported fewer adjustment difficulties; higher levels of disclosure self-efficacy also directly predicted fewer adjustment problems. Findings offer support for interventions aimed at providing mothers with skills to enhance confidence for disclosing their HIV status.

Resumen

Al no revelar el estado de VIH materno a los niños pequeños puede tener un impacto negativo en el funcionamiento del niño; sin embargo, muchas madres no revelan su estado debido a la falta de autoeficacia en el proceso de revelación. Este estudio examina las variaciones demográficas en la autoeficacia de revelación, independientemente de la intención de revelar, y evalúa la relación entre autoeficacia y ajuste infantil a través de la relación entre padres e hijos entre una muestra de madres VIH + y sus hijos sanos ($N = 181$ pares). Las madres completaron medidas demográficas y de autoeficacia; los niños completaron medidas para evaluar la relación entre padres e hijos y el ajuste del niño (por ejemplo, preocupación, autoconcepto, depresión). A través de la demografía,

Lisa Armistead, lparmistead@gsu.edu.

Conflict of interest The authors have no conflicts of interest relevant to this article to disclose.

Ethical Approval The authors declare they have no conflicts of interest. All procedures performed in this study were in accordance with the ethical standards of the universities' institutional review boards and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all adult participants included in the study. Parental consent and child assent were obtained from participants under age 18.

pocas madres reportaron tener confianza en revelar su estado de VIH. Los resultados de la modelación estructural de covarianza mostraron que las madres que respaldan una mayor autoeficacia tenían hijos que reportaron una mejor calidad de relación y, a su vez, informaron menos dificultades de adaptación. Niveles más altos de autoeficacia de revelación también predijeron directamente menos problemas de ajuste. Los hallazgos ofrecen apoyo para las intervenciones dirigidas a proveer madres con las habilidades para aumentar la confianza a la hora de revelar su estado de VIH.

Keywords

HIV disclosure; Parent–child relationship; Disclosure self-efficacy

Introduction

Globally, the number of people living with HIV exceeds 36 million, and 1.8 million were newly infected in 2016 [1]. Though the number of children living with an HIV+ parent worldwide is not routinely tracked [2], 51% of people living with HIV are female and most are of child-bearing age [1]. In the United States, women accounted for 23% of the those living with HIV in 2013 and 19% of new HIV diagnoses in 2015. Women of color are disproportionately impacted; relative to Caucasian women, HIV infects 18 times more African American women and four times more Latinas [3]. Many of these women are mothers and, due to the availability of life-sparing treatments, will live to raise their children. Thus, researchers are increasingly attending to children with HIV+ parents, examining a range of factors that influence family and child functioning [4].

Stigma, along with concern about their children’s welfare and a lack of preparedness or self-efficacy for disclosing [5, 6] {defined as confidence in one’s ability to disclose HIV status [7]}, results in most mothers concealing their diagnosis from their children [8, 9]. Despite medical advances, prevention campaigns, and efforts to reduce it, HIV-related stigma remains a powerful concern for those affected by HIV [10]. HIV stigma is pervasive, with children as young as six describing people who get AIDS as, “nasty,” “crazy,” or “people who do bad things [11].” Stigma may impact disclosure self-efficacy if a mother fears negative appraisal from her child or worries about “passing along” stigmatization to her child. Both perceived risks require a nuanced and appropriately responsive approach to disclosure and may compromise a mother’s confidence in the disclosure process. Consistent with Pachankis, we contend that concealment, particularly in the context of low disclosure efficacy, may lead to disruptions in the parent–child relationship, which, in turn, may impact child functioning [12].

Pachankis’s [12] cognitive-affective-behavioral model of the psychological implications of concealing a stigma offers a valuable framework for understanding how non-disclosure of HIV status to one’s child can impact the parent–child relationship and, ultimately, child outcomes. Concealable stigmas hold the potential to disrupt interpersonal relationships, as those hiding their HIV status may engage in increased self-monitoring or hyper-vigilance and even avoidance of those from whom they are concealing their illness. For example,

when a child living with a mother who has not disclosed her HIV status asks an HIV-related question or even a general question about her health, the mother may avoid responding through deflection or negative affect. In fact, the literature supports the existence of relations between non-disclosure and family processes (e.g., parenting), as well as child functioning [9, 13]. Less well understood but also considered in Pachankis's model is whether and how self-efficacy for disclosure, regardless of one's decision to disclose, is associated with parent-child relationship quality or child adjustment. Specifically, if a mother doubts her ability to respond in an efficacious manner to her child's HIV-related queries, she may be more likely to avoid meaningful interactions with the child and, while interacting with her child, her preoccupation with ensuring her diagnosis remains hidden may be perceived as disinterest by the child [12]. Such disrupted parent-child relationships, particularly in the context of HIV, can result in poorer child outcomes, including internalizing problems or poor self-concept [14].

Qualitative data from mothers living with HIV (MLH) indicate that some lack self-efficacy for disclosure [6] and even after disclosure-supporting interventions, many choose not to disclose [7]. Given the relatively low rates of disclosure to children, this study considers the role of a common target of disclosure interventions: disclosure self-efficacy. First, we provide an exploratory analysis of disclosure self-efficacy levels based on descriptive information. To our knowledge, efficacy for disclosure to children has not been considered in the literature in terms of associations with various demographic factors. Specifically, efficacy may vary by education or cultural background, based on the extent to which MLH feel capable of explaining HIV or comfortable discussing the illness within their cultural context. Second, we take a confirmatory approach in considering the relations between maternal HIV disclosure efficacy, parent-child relationship quality, and child adjustment among a diverse sample of MLH and one of their 6- to 14-year old HIV-negative children. Regardless of whether she intends to disclose, a mother who feels unprepared to do so may avoid engaging in a variety of conversations with her children for fear of being asked about her health. Avoidance, coupled with maternal anxiety around disclosure, may negatively impact family and child functioning. Thus, we hypothesize that lower maternal self-efficacy for disclosure will be associated with a poorer parent-child relationship, which in turn will relate to poorer child adjustment (assessed first as an indirect association, then adding a direct association).

Methods

Participants

MLH and their children were recruited for the TRACK-II (Teaching, Raising, and Communicating with Kids) project, a randomized controlled trial of an intervention designed to assist mothers with disclosing their HIV serostatus to their children. The study includes a baseline assessment and three intervention follow-up assessments, but only baseline data are included in the current study. A total of 181 mother-child pairs (362 participants) across two study sites (Atlanta, GA, and Los Angeles, CA) were enrolled. Eligibility criteria for mothers included a confirmed diagnosis of HIV, being a primary caregiver of a child 6- to 14-years old (not living with HIV) who was unaware of their

mother's HIV status. Child participants' age was limited to this range as a function of the purpose of the parent study and because relationships between older adolescents (> 14) and their parents differ from those between parent and children/early adolescents [15]. Both mother and child had to be proficient in English or Spanish. The primary caregiver of the child could be a biological mother or other female caregiver. Females self-identified as the child's primary caregiver and were screened into the study if they spent at least four nights each week in the same home as the child. Spanish-speaking participants were only enrolled at the Los Angeles site, but no participants were excluded based on language spoken at the Atlanta site. Mother and child participants were excluded if they had a developmental or other mental health disorder that prevented them from being able to answer interview questions.

Procedures

MLH were recruited through a variety of sources, including HIV/AIDS service organizations, health clinics, and various media outlets (e.g., radio commercials, advertisements on public transportation). Study staff or personnel from recruitment sites provided study information to potentially eligible MLH, in both Spanish and English at the Los Angeles study site. Interested potential participants were screened in person or via telephone to determine their eligibility. If mothers had more than one well child in the targeted age range, the target child was chosen using random selection. Of the MLH screened, 71% were eligible to participate.

Once accepted into the study, the participants were guided through consent (mother) and assent (child) procedures in either English or Spanish, based on participant preference. Study activities were conducted at the participant's home, the recruitment site, or another participant-preferred site with ensured privacy. Interviewers were trained in recruitment strategies, informed consent procedures, confidentiality, interviewing techniques (particularly with children), risk assessment and safety procedures, appropriate use of the computer interviewing program, and retention strategies. Interviews were conducted using computer-assisted personal interviewing (CAPI) software, which involves the interviewer verbally asking each question and then entering the participant's data directly into a laptop computer. With participants' permission, interviews were audio recorded for later quality assurance purposes. Mother interviews typically lasted 75 min, whereas child interviews were about 45 min. In most cases, mothers and children were interviewed simultaneously. When that was not possible, mothers were present at the interview site, but not within hearing range, for the child's interview. Mothers were provided with \$60 in cash and children were given a \$30 gift card per assessment. All procedures were approved by the Institutional Review Boards at the University of California, Los Angeles and Georgia State University.

Measures

Disclosure Self-Efficacy—The Disclosure Self-Efficacy scale is a nine-item measure developed for the TRACK pilot study [7] to understand mothers' confidence in their abilities to manage events related to disclosure of their HIV status. The mother rated how confident she was that she could do the following: (a) decide whether the child is developmentally

ready for disclosure, (b) come up with a plan to disclose, (c) come up with an age-appropriate way to explain HIV, (d) set a time and date to disclose, (e) disclose, (f) stay calm during disclosure, (g) deal with the child's response to disclosure, (h) talk to the child about HIV facts, and (i) answer personal questions about HIV. This measure served as the main predictor for our model. Responses were indicated on a visual analogue scale [16] to guide participants in selecting their level of confidence. Higher scores are indicative of higher self-efficacy in managing disclosure-related situations. Scores could range from 0 ("I cannot do this at all") to 900 ("I'm completely confident I can do this"), with a midpoint of, "Somewhat certain I can do this." Cronbach's alpha in our sample was 0.93.

Parent–Child Relationship—The Conflict Behavior Questionnaire (CBQ) [17] is a 20-item measure of parent/child relationship and was completed by children in this sample in consideration of their relationship with their mother. Higher scores indicate better relationship quality, and scores could range from 20 to 40. Cronbach's alpha in our sample was 0.87.

Child Adjustment—Child adjustment was conceptualized as a latent variable composed of three observed variables: depression, worry, and self-concept. All measures were completed by the children. The Children's Depression Inventory (CDI) [18, 19] is a 27-item measure assessing severity of depressive symptoms in children and adolescents, and higher scores indicate more severe symptoms. Cronbach's alpha was 0.84 in this sample. The Penn State Worry Questionnaire for Children (PSWQ-C) [20] is a 14-item measure of worry in children and adolescents, and higher scores indicate greater tendency to worry. Cronbach's alpha in this sample was 0.80. Lastly, the Piers-Harris 2 Children's Self-Concept Scale [21] is a 60-item overview of an individual's self-perception. This scale is composed of six subscales including Physical Appearance and Attributes, Intellectual and School Status, Happiness and Satisfaction, Freedom from Anxiety, Behavioral Adjustment, and Popularity. We reverse scored items such that higher scores are indicative of more negative self-concept to be consistent with the two other child measures. Cronbach's alpha for this sample was 0.89.

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 back-translated as suggested by Marin and Marin [22].

Data Analytic Plan

First, we provide an exploratory evaluation of self-efficacy levels using sample demographics, maternal disclosure self-efficacy, and child-reported measures of parent–child relationship and child adjustment.

Second, as a confirmatory assessment of our hypothesis, we evaluate the relations between disclosure self-efficacy and study variables using covariance structural modeling with maximum likelihood estimation and robust standard errors (MLR) in Mplus 7.4 [23]. MLR estimation was selected because it is robust to violations of normality [24]. A measurement model and a series of covariance structural models were specified and estimated assessing

first an indirect effects only model followed by a direct effects model (inclusive of both indirect and direct effects) of disclosure self-efficacy on child adjustment. For each model, overall model fit was evaluated by inspecting several fit indices, including the Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SRMR), and Comparative Fit Index (CFI). SRMR values less than or equal to 0.08 indicate good model fit. RMSEA values less than or equal to 0.05 indicate good fit, values between 0.08 and 0.10 indicate adequate fit, and values greater than 0.10 indicate poor fit. For the CFI, values greater than 0.95 indicate good model fit. Cutoffs for all fit indices were based on the guidelines by Hu and Bentler [25].

Results

Descriptive Analyses

On average, mothers were 39.13 years old ($SD = 7.71$), and children were 9.67 ($SD = 2.49$) years old at baseline. The majority of mothers reported race as Black/African American (56.1% of mothers, 57.2% of children), with 34.4% of mothers and 31.1% of children identifying as White, 6.7% of mothers and 9.4% of children as multiracial, and fewer than 2% identifying as any other race. In addition, 33.1% of mothers and 35% of children identified their ethnicity as Hispanic/Latino, with Mexico identified as the most frequent country of origin (78.3% of Latino families). Many mothers also reported being single/never married (43.9%), with others noting their status as currently married (20.6%), separated (14.4%), divorced (13.3%), or widowed (7.8%). Over half (56.1%) of mothers reported completing at least high school or General Educational Development (GED) test, and 33.9% attended some college, vocational school, or completed a graduate and/or undergraduate degree. Under half (30%) of mothers reported being employed in the past 30 days. On average, mothers noted being aware of their status for 12.18 years ($SD = 6.93$). Half (50.3%) of the children identified as female, and the remainder identified as male.

Table 1 presents descriptive information for the study variables, and Table 2 presents variances as well as bivariate covariances and correlations. Child age was significantly correlated with child self-concept ($r = -0.16$, $p < 0.01$) and depression ($r = -0.22$, $p < 0.01$), and thus, child age was included as a covariate in all primary analyses. Child gender was not correlated with any study variable and was not included as a covariate in subsequent analyses. All primary study variables were correlated with one another in the expected direction.

On average, mothers reported levels of disclosure self-efficacy falling in the middle of the Disclosure Self-Efficacy scale ($M = 455.97$, $SD = 262.59$). This mean score on the associated visual analogue scale is characterized by an anchor of, "I am somewhat certain I can do this." Twenty-five percent of mothers endorsed that they were not at all confident in their ability to decide whether their child is developmentally ready to learn of their HIV status, and 13.8% reported feeling completely confident about this task. Nearly one-third (27.1%) of mothers reported feeling not at all confident in their ability to set a date and time to disclose to their child, whereas 10% of mothers reported feeling completely confident. Similarly, one-fourth (24.9%) of mothers endorsed that they were not at all confident that they could disclose to their child that they have HIV, and 22.7% reported feeling completely

confident that they could disclose. Overall, mothers appeared somewhat more confident about discussing HIV-related facts with their child, with 11% of mothers endorsing that they are not at all confident and 30.9% of mothers endorsing complete confidence. Based on exploratory *t*-tests, disclosure self-efficacy did not significantly differ across study site (GA versus CA), marital status, educational attainment, employment status, race, ethnicity, or children's academic achievement.

Covariance Structural Model

The final covariance structural model, inclusive of direct and indirect effects of disclosure self-efficacy on child adjustment, is illustrated in Fig. 1 (see Table 3 for model results reflecting this model and the indirect effects only model). The model includes one latent factor {scaled by fixing the variance of the latent factor to 1 [26]}—child adjustment—which was comprised of three indicators: depression (CDI), worry (PSWQ), and self-concept (PH). Disclosure self-efficacy, parent–child relationship quality, and child age were each included in the model as manifest indicators (as noted earlier, age was the only demographic added to the model due to its significant correlation with the latent factor measures). Based on the high correlation between disclosure self-efficacy and child worry, we also included a specific path from disclosure self-efficacy to child worry. An indirect effect was specified from disclosure self-efficacy to child adjustment via parent–child relationship quality, and a direct effect was added for the final model from disclosure self-efficacy to child adjustment (this path was not part of the indirect effects only model).

Overall, the final model exhibited good fit, with a Satorra-Bentler scaled χ^2 [5] = 2.84, CFI of 1.0, and RMSEA and SRMR values close to 0. All parameter estimates were significant at 0.05 or better and in the expected direction. A Satorra-Bentler scaled Chi square difference test compared our final model to the indirect effects only model (see Table 3); addition of the direct path significantly improved model fit, χ^2_{M2-M1} [1] = 4.99, $p < 0.05$, and thus was retained as the superior model. Overall, the final covariance structural model included both the direct path from disclosure self-efficacy to child adjustment as well as an indirect effect via parent–child relationship quality. Child age significantly predicted child internalizing symptoms, such that younger children had more adjustment difficulties than older children, $\beta = -0.16$, $SE = 0.07$, $p = 0.02$. Child age also predicted relationship quality; older children reported better relationship quality with their parents, $\beta = 0.15$, $SE = 0.07$, $p = 0.03$. Consistent with hypotheses, parent–child relationship quality was a strong predictor of child functioning, $\beta = -0.55$, $SE = 0.06$, $p < 0.001$. Children who reported better relationship quality reported fewer adjustment difficulties. Disclosure self-efficacy was positively related to relationship quality, such that mothers reporting higher self-efficacy had children who reported better relationship quality, $\beta = 0.16$, $SE = 0.07$, $p = 0.02$. Disclosure self-efficacy was also specifically related to child worry, such that higher self-efficacy predicted less worry, $\beta = -0.21$, $SE = 0.07$, $p = 0.002$. There was a significant indirect effect of disclosure self-efficacy on child adjustment via parent–child relationship quality, $\beta = -0.09$, $SE = 0.04$, $p = 0.02$. Specifically, as hypothesized, higher levels of disclosure self-efficacy predicted fewer child adjustment problems via better parent–child relationship quality.

Discussion

This study extends our understanding of a complex process for families affected by HIV through the exploration of maternal self-efficacy for disclosure. Given the persistence of HIV stigma, including internalized stigma, it is no surprise that this diverse group of mothers reported considerable trepidation about their ability to effectively discuss their HIV status with their 6- to 14-year-old children. Self-efficacy did not vary based on geographic or demographic variables, and very few mothers felt confident in their ability to determine if their children were developmentally ready to learn of their status. Many expressed concern about their ability to set a time to disclose and follow through with that plan. Self-efficacy for discussing facts/answer questions about HIV was highest with almost 31% of MLH reported complete confidence on this item, yet that leaves almost 70% of mothers feeling limited confidence in this aspect of disclosure. These findings suggest current services for MLH do not provide mothers with the skills to bolster confidence for addressing their HIV status with their children, regardless of where they live or personal background. Lack of confidence or efficacy around such an emotionally challenging issue can ripple out to family and child functioning.

Study hypotheses were confirmed in that mothers' confidence in their ability to disclose was associated with the quality of the parent-child relationship and child adjustment. Specifically, higher self-efficacy was related to better quality parent-child relationship and, both directly and indirectly through the parent-child relationship, self-efficacy was associated with children's symptoms of depression and worry, as well as the child's self-concept. Consistent with Pachankis's cognitive-affective-behavioral model of concealing a stigma, participating mothers are likely experiencing ongoing anxiety about how to keep their secret or how to address questions should they arise, and as a result, are engaging in more tense interactions with their children. Children may be reacting to their mother's worry, leading to worry of their own as seen in the high correlation between maternal self-efficacy and child-reported worry. Fortunately, at least one intervention [7] demonstrates the ability to improve disclosure self-efficacy through the provision of information and skills about how to disclose in a developmentally appropriate way, effectively plan logistics for disclosure, and increase mothers' knowledge about issues surrounding HIV infection. Improving efficacy, regardless of whether a mother intends to disclose, can have broadly positive impacts on outcomes for affected families.

Although this study benefits from inclusion of a sample diverse across a variety of characteristics, the relevance of our findings to populations dissimilar from our sample should be carefully considered. This study also benefits from reliance on both mother and child report, however, the disclosure self-efficacy measure, created by the study authors, has not been widely used, and there is limited information regarding its reliability or validity. On the other hand, we note that changes in this measure and actual disclosure rates have been shown to move in tandem in a previous study⁷. Due to the nature of the study aims, none of the participating MLH had disclosed to their children, despite an average time since diagnosis of over 12 years. Thus, this sample may primarily include mothers for whom disclosure presents particular challenges. Relatedly, only women living with HIV were included, and results may not be generalized to fathers with HIV.

For a variety of reasons, many MLH choose to conceal the illness from their children. However, incorporating support and skill building for disclosure into care for HIV+ mothers, regardless of intent to disclose, may benefit children. Affected youth are at increased risk for internalizing problems and poor self-concept, which appears to be exacerbated in families with low maternal self-efficacy for disclosure. Thus, reducing the long-term costs and impacts of the virus on this vulnerable group is particularly important.

Acknowledgements

This study was funded by the National Institute of Mental Health (Grants R01MH094233-Armistead & R01MH09418-Schulte). The authors wish to thank the families who participated in this research, as well as Ivette Avina and Rosa Felix for their contributions to quality assurance and translation of the abstract.

References

1. Joint United Nations Programme on HIV/AIDS. UNAIDS Data 2017. 2017 http://www.unaids.org/en/resources/documents/2017/2017_data_book. Retrieved 7 2017.
2. UNICEF. Towards an AIDS-free generation: children and AIDS: Sixth stocktaking report, 2013. 2013 http://www.unicef.org/publications/files/children_and_AIDS_Sixth_Stocktaking_Report_EN.pdf.
3. Centers for Disease Control and Prevention (CDC). HIV Surveillance Report, 2015. vol. 27 2015 <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Retrieved 11 2016.
4. Thurman TR, Kidman R, Taylor TM. Bridging the gap: the impact of home visiting programs for orphans and vulnerable children on social grant uptake in South Africa. *Child Youth Serv Rev*. 2015;48:111–6.
5. Armistead L, Tannenbaum L, Forehand R, Morse E, Morse P. Disclosing HIV status: are mothers telling their children? *J Pediatr Psychol*. 2001;26:11–20. [PubMed: 11145728]
6. Murphy DA, Roberts KJ, Hoffman D. Regrets and advice from mothers who have disclosed their HIV+ serostatus to their young children. *J Child Fam Stud*. 2003;12:307–19.
7. Murphy DA, Armistead L, Marelich WD, Payne DL, Herbeck DM. Pilot trial of a disclosure intervention for HIV+ mothers: the TRACK Program. *J Consult Clin Psychol*. 2011;79:203–14. [PubMed: 21355637]
8. Corona R, Beckett MK, Cowgill BO, et al. Do children know their parent's HIV status? Parental reports of child awareness in a nationally representative sample. *Ambul Pediatr*. 2006;6:138–44. [PubMed: 16713931]
9. Qiao S, Li X, Stanton B. Disclosure of parental HIV infection to children: a systematic review of global literature. *AIDS Behav*. 2013;17:369–89. 10.1007/s10461-011-0069-x. [PubMed: 22016331]
10. Chaudoir SR, Fisher JD, Simoni JM. Understanding HIV disclosure: a review and application of the disclosure process model. *Soc Sci Med*. 2011;72:1618–29. [PubMed: 21514708]
11. Armistead L, Summers P, Forehand R, Morse PS, Morse E, Clark L. Understanding of HIV/AIDS among children of HIV-infected mothers: implications for prevention, disclosure, and bereavement. *Child Healthc*. 1999;28:277–95.
12. Pachankis JE. The psychological implications of concealing a stigma: a cognitive-affective-behavioral model. *Psychol Bull*. 2007;133:328–45. [PubMed: 17338603]
13. Murphy DA, Steers WN, Dello Stritto ME. Maternal disclosure of mothers' HIV serostatus to their young children. *J Fam Psychol*. 2001;15:441–50. 10.1037//0893-3200.15.3.441. [PubMed: 11584794]
14. Forehand R, Jones D, Kotchick B, et al. Non-infected children of HIV-infected mothers: a four year longitudinal study of child psychosocial adjustment and parenting. *Behav Ther*. 2002;33:579–600.
15. Forehand R, Wierson M. The role of developmental factors in planning behavioral interventions for children: disruptive behavior as an example. *Behav Ther*. 1993;24:117–41.
16. Bandura A Self efficacy: the exercise of control. New York: Freeman; 1997.

17. Robin AL, Foster SL. Negotiating parent-adolescent conflict: a behavioral-family systems approach. New York: Guilford Press; 1989.
18. Kovacs M, Beck AT. An empirical-clinical approach toward a definition of clinical depression In: Schultebrandt JG, Raskin A, editors. Depression in childhood: Diagnosis, treatment, and conceptual models. New York: Raven Press; 1977 p. 1–25.
19. Kovacs M The Children's Depression Inventory (CDI). Psychopharm Bull. 1985;21:995–8.
20. Chorpita BF, Tracey SA, Brown TA, Collica TJ, Barlow DH. Assessment of worry in children and adolescents: an adaptation of the Penn State Worry Questionnaire. Behav Res Ther. 1997;35:569–81. [PubMed: 9159982]
21. Piers EV, Herzberg DS. Piers-Harris children's self concept scale-second edition manual. Los Angeles: Western Psychological Services; 2002.
22. Marin G, Marin B. Research with Hispanic populations. Newbury Park: Sage; 1991.
23. Muthén LK, Muthén BO. Mplus user's guide. 7th ed. Los Angeles: Muthén & Muthén; 1998–2012.
24. Chou CP, Bentler PM, Satorra A. Scaled test statistics and robust standard errors for non-normal data in covariance structure analysis: a Monte Carlo study. Br J Math Stat Psychol. 1991;44:347–57. [PubMed: 1772802]
25. Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. Struct Equ Model Multidiscip J. 1999;6:1–55. 10.1080/10705519909540118.
26. Little TD, Slegers DW, Card NA. A non-arbitrary method of identifying and scaling latent variables in SEM and MACS models. Struct Equ Model. 2006;13:59–72.

Fig. 1.

Final covariance structural model predicting child adjustment from maternal disclosure self-efficacy and parent-child relationship ($N = 177$). Standardized coefficients displayed.

Dashed lines indicate nonsignificant paths. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. ^PParent report; ^CChild report. Model fit indices: $\chi^2 = 2.84$, $df = 5$, $n.s.$; RMSEA = 0.000 [90% CI 0.000, 0.076]; CFI = 1.00; SRMR = 0.016. Indirect effect: $\beta = -0.09$, $p < 0.05$

Table 1

Descriptive statistics for all study variables ($N = 181$)

	Percentage	Mean	Standard Deviation	Range		α
				Min	Max	
Child age		9.67	2.49	6	14	
Child gender						
Female	50.3					
Male	49.7					
Parent age		39.13	7.71	24	58	
Parent race/ethnicity						
Hispanic/latino	33.1					
Non-hispanic/latino	66.9					
Black or African American	56.1					
White	34.4					
More than one race	6.7					
American Indian or Alaska native	1.7					
Asian	0.6					
Native Hawaiian or Pacific islander	0.6					
Other ethnicity	2.0					
Parent marital status						
Single/never married	43.9					
Currently married	20.6					
Separated	14.4					
Divorced	13.3					
Widowed	7.8					
Parent education level						
Eleventh grade or less	43.9					
Twelfth grade	19.3					
GED	2.8					
Vocational/technical	6.1					
Some college	23.8					

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

	Percentage	Mean	Standard Deviation	Range		α
				Min	Max	
College degree (undergraduate)	3.3					
College degree (graduate)	0.6					
Parent employment status						
Employed	30					
Unemployed	70					
Disclosure self-efficacy ^P		455.97	262.59	0	900	0.93
Conflict behavior questionnaire ^C		36.52	3.92	21	40	0.87
Piers-Harris 2 children's self-concept scale ^C		74.95	8.83	61	106	0.89
Child depression inventory ^C		35.80	6.87	27	58	0.84
Penn state worry questionnaire ^C		16.94	8.20	0	41	0.80

^PParent report

^CChild report

Table 2

Bivariate correlations and covariances among all study variables ($N = 181$)

Variable	1	2	3	4	5	6	7
1. Child age	6.22	-0.35	-14.64	1.48	-3.50	-3.70	-2.39
2. Child gender	-0.02	0.25	-0.84	-0.07	0.12	-0.06	-0.08
3. Disclosure self-efficacy ^P	-0.02	-0.01	68.950.93	161.60	-582.25	-334.67	-669.48
4. Conflict behavior questionnaire ^C	-0.01	-0.04	0.16 [*]	15.40	-17.91	-14.22	-7.21
5. Piers-Harris self-concept scale ^C	-0.16 [*]	0.03	-0.25 ^{**}	-0.51 ^{**}	77.96	45.08	28.12
6. Child depression inventory ^C	-0.22 ^{**}	-0.02	-0.19 [*]	-0.53 ^{***}	0.75 ^{***}	47.24	25.03
7. Penn state worry questionnaire ^C	-0.12	-0.02	-0.31 ^{***}	-0.22 ^{**}	0.39 ^{***}	0.45 ^{***}	67.16

Male = 1, Female = 2. Correlations are displayed below the diagonal. Covariances are displayed above the diagonal. Variances are in bold italics on the diagonal

^PParent report^CChild report^{*} $p < 0.05$;^{**} $p < 0.01$;^{***} $p < 0.001$

Table 3

Model fit indices for proposed and final covariance structural models predicting child adjustment from maternal disclosure self-efficacy and parent-child relationship ($N= 177$)

Model	χ^2	df	p	CFI	RMSEA	SRMR	Note/comparison
1. Model 1: indirect effects only	7.51	6	0.28	0.99	0.04	0.04	
2. Model 2: direct and indirect effects	2.84	5	0.68	1.00	0.00	0.02	$\chi^2_{M2-M1} [1] = 4.99, p < 0.05$