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Intergenerational Benefits of Family-Based HIV Interventions

Mary Jane Rotheram-Borus and Patricia Lester
University of California, Los Angeles

Juwon Song
University of California, Los Angeles, and Korea University

Ying-Ying Lin
University of California, Los Angeles

Noelle R. Leonard
National Development and Research Institutes

Leila Beckwith
University of California, Los Angeles

Mary J. Ward
Cornell University

Marian Sigman and Lynwood Lord
University of California, Los Angeles

The longitudinal impact of a family-based intervention on grandchildren of parents with HIV (PWH) is evaluated. Because PWH and their daughters demonstrated gains over 6 years when randomized to a coping skills intervention compared with a control condition, the adjustment of the PWH's grandchildren was also compared across conditions. Grandchildren in the intervention condition reported significantly fewer internalizing and externalizing behavioral symptoms compared with grandchildren in the control condition. There is weak evidence that grandchildren in the intervention condition had higher scores on measures of cognitive development and more positive home environments. These results suggest that there are possibly long-term, intergenerational benefits of an intervention for families coping with HIV.

Keywords: family-based intervention, intervention, prevention, HIV/AIDS

Family therapists have documented that parental illness and death from cancer, suicide, or war may reverberate negatively for generations (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Motta, 1990; Stanton, Collins, & Sworowski, 2001). This study examines whether HIV disease also has a negative intergenerational impact on grandchildren of parents with HIV (PWH), as well as whether an intervention can mitigate this impact.

Mary Jane Rotheram-Borus, Patricia Lester, Ying-Ying Lin, and Lynwood Lord, Center for Community Health, University of California, Los Angeles; Juwon Song, Center for Community Health, University of California, Los Angeles, and Department of Statistics, Korea University, Seoul, Korea; Noelle R. Leonard, Institute for AIDS Research, National Development and Research Institutes; Leila Beckwith, Department of Pediatrics, University of California, Los Angeles; Mary J. Ward, Department of Pediatrics, Cornell University; Marian Sigman, Department of Psychiatry and Biobehavioral Sciences, University of California, Los Angeles.

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Correspondence concerning this article should be addressed to Mary Jane Rotheram-Borus, Center for Community Health, University of California, Los Angeles, 10920 Wilshire Boulevard, Suite 350, Los Angeles, CA 90024. E-mail: rotheram@ucla.edu

Parental stressors related to chronic and terminal diseases other than HIV have consistently been linked to poor adjustment for children (Romer, Barkman, Schulte-Markwort, Thomalla, & Riedesser, 2002). Parental HIV was anticipated to have a similar impact. In particular, families coping with HIV are likely to be African American and Latino (Centers for Disease Control and Prevention, 2001) and are much more likely to simultaneously experience stressors associated with poverty, racism, and teenage parenthood (Rotheram-Borus, Murphy, Miller, & Draimin, 1997). Therefore, a family-based HIV-prevention program was designed in 1993 to help PWH cope with their diagnoses, to parent better while ill, and to enact positive health behaviors (Rotheram-Borus, Lee, Gwadz, & Draimin, 2001). Their adolescent children received intervention sessions concurrently that focused on reducing risk behaviors, saying goodbye to their PWH, and setting new life goals. The family intervention reduced emotional distress and problem behaviors for PWH and their adolescent children over 2 years. In addition, the intervention improved developmental outcomes for adolescent children of PWH over 6 years and adjustment in their PWH over 5 years (Rotheram-Borus, Lee, Lin, & Lester, 2004).

Given the sustained benefits of this family-based intervention for adolescents of PWH as they aged into early adulthood, we hypothesized that the intervention effects would also positively impact the next generation, the grandchildren of the PWH (Frierson, Lippmann, & Johnson, 1987; Zayas & Romano, 1994). The intervention improved emotional adjustment and reduced risk be-

haviors in the PWH and their daughters by targeting emotional regulation, promoting parent–child communication, and enhancing family-based coping skills in the face of serious medical illness. We hypothesized that this would translate into improved family environment and parenting skills across generations and that the grandchildren in the intervention condition would be better adjusted than grandchildren in the control condition. Therefore, we monitored the grandchildren in the intervention and control conditions to examine whether any intervention benefits were maintained across generations.

Method

Figure 1 summarizes the flow of participants through the study. A family consisted of a PWH and all adolescent children. Families were randomly assigned to the intervention condition (153 PWH, 212 adolescents) or the control condition (154 PWH, 211 adolescents), which required parental and adolescent informed consent. In the current analyses, sons were not included because men were not likely to be aware of children they conceived and very few sons were caretakers of their children. Only daughters were eligible for inclusion in this study (intervention condition, $n = 113$; control condition, $n = 110$).

Parenthood among the daughters was monitored over 6 years. Whereas parenthood was monitored across time, assessment of grandchildren was begun on January 15, 1997. Some grandchildren were born too soon to be included in the study ($n = 79$ grandchildren to 30 daughters). To be eligible for the study, a child had to be born to a daughter of a PWH between January 15, 1997, and June 1, 2001, and the daughter had to be the grandchild's primary caretaker. Depending on the grandchild's age at the time of recruitment, one or more assessments were completed within a 6-month window after the grandchild's birthday at 12 months (52.1%), 24 months (57.5%), and/or 36 months (56.2%). Overall, there were 36 grandchildren (49.3%) of a PWH who had died and 37 grandchildren (50.7%) of a PWH who was living.

PWH: Grandparents With HIV (Generation 1)

PWH were assessed at recruitment for ethnicity, current age, age at first pregnancy, stage of HIV diagnoses (asymptomatic, symptomatic, or AIDS), the occurrence of hard drug use over the lifetime, and emotional distress on the Brief Symptom Inventory (Derogatis & Melisaratos, 1983).

Adolescents: Daughters Who Become Mothers (Generation 2)

Ethnicity, age, and age at time of grandchildren's birth were self-reported. Bereavement was reported if the family reported the PWH's death prior to the first assessment of the grandchildren (confirmed by monitoring state records of death). Daughters were assessed for depression every 3 to 6 months after their children's birth, up to seven times during the first 2 years of their children's lives; mean scores were used in the analyses ($\alpha = .76$).

Grandchildren (Generation 3)

Low birth weight (≤2,500 g) was assessed by maternal report as present or not. Intrauterine drug or alcohol exposure was reported by the mother by using an adapted version of the Revised Addiction Severity Index Drug and Alcohol Use Scale. Use or not of alcohol, hard drugs, marijuana, or tobacco by the child's mother at any time during the child's gestation was recorded.

Behavioral and emotional symptoms were assessed with the Child Behavior Checklist/2–3 (CBCL/2–3) at 24 and/or 36 months (Achenbach, 1992). Three measures from the CBCL were included in the analyses: the composite *t* score, the internalizing *t* score, and the externalizing *t* score. The Mental Development Index (MDI) of the Bayley Scales of Infant Development (Bayley, 1969) was used to assess cognitive development at 12, 24, and 36 months. Skills measured on the MDI included perceptual abilities, memory, verbal communication, and mathematical concept formation.

Finally, home environment was assessed with the Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 1984) at 12, 24, and 36 months. A large literature validates the utility of the measure as an index of quality of social and cognitive stimulation in the home environment among families with diverse ethnic and socioeconomic backgrounds (Linver, Brooks-Gunn, & Kohen, 2002). Administered during a scheduled home visit with the child and primary caretaker, the HOME inventory (Caldwell & Bradley, 1984) was developed to measure the level of environmental stimulation available to children in the home setting. The HOME inventory is composed of 45 dichotomous items divided into six subscales, which are scored in a yes–no fashion. The yes scores are summed to obtain a total score for each subscale, with higher scores indicating a more stimulating home environment. Items are scored by using a combination of caretaker interview regarding the child's routine activities (e.g., "Is the child taken to a grocery store at least once a week?"), assessment of play materials available to the child, and direct observation of mother and child interaction (e.g., "Parent spontaneously vocalizes to child at least twice"). The subscales include (a) availability of learning materials, (b) language stimulation, (c) appropriate physical environment (safety, cleanliness, etc.), (d) caretaker responsivity, (e) academic stimulation, (f) parental behavioral modeling, and (g) variety in activity and environment. HOME total scores show high internal consistency ($\alpha = .89$; Caldwell & Bradley, 1984). Study interviewers were trained through a detailed review of the HOME manual and scoring system, attendance of at least three HOME interviews to observe a reliable interviewer, and administration and scoring of at least three interviews with the reliable interviewer observing and conducting independent scoring. Study interviewers were required to meet a reliability of 100% criterion with a trained interviewer before conducting independent HOME assessments. To complete the HOME, the interviewer spent several hours at each participant's home.

Control Condition

New York City's Division of AIDS Services provided rent subsidies, home care, child care, food banks, mental health services, and medical care to families with a PWH. Each PWH was assigned to a social worker who functioned as a case manager and who had an ongoing relationship with the family, assisting with referrals and emergency care needs for each family.

Intervention Condition

In addition to the services provided to the control condition, a family-based intervention was delivered in three modules. Module 1 consisted of eight sessions for PWH (delivered in 4 half days) and was designed to improve PWH's emotional regulation, particularly related to health issues, to reduce their own problem behaviors, and to make decisions about disclosure of their HIV status. In Module 2, PWH addressed making custody plans and improving parenting skills over 16 sessions (8 half days). If the PWH died, adolescents and their new guardians were invited to Module 3, which focused on establishing positive relationships with the guardian and setting new life goals over 16 sessions (8 half days).

Analysis

An intent-to-treat analysis with mixed effects models (Bryk & Raudenbush, 1992) was chosen to examine the effect of the intervention on the repeatedly measured grandchildren-outcome variables. The model in-

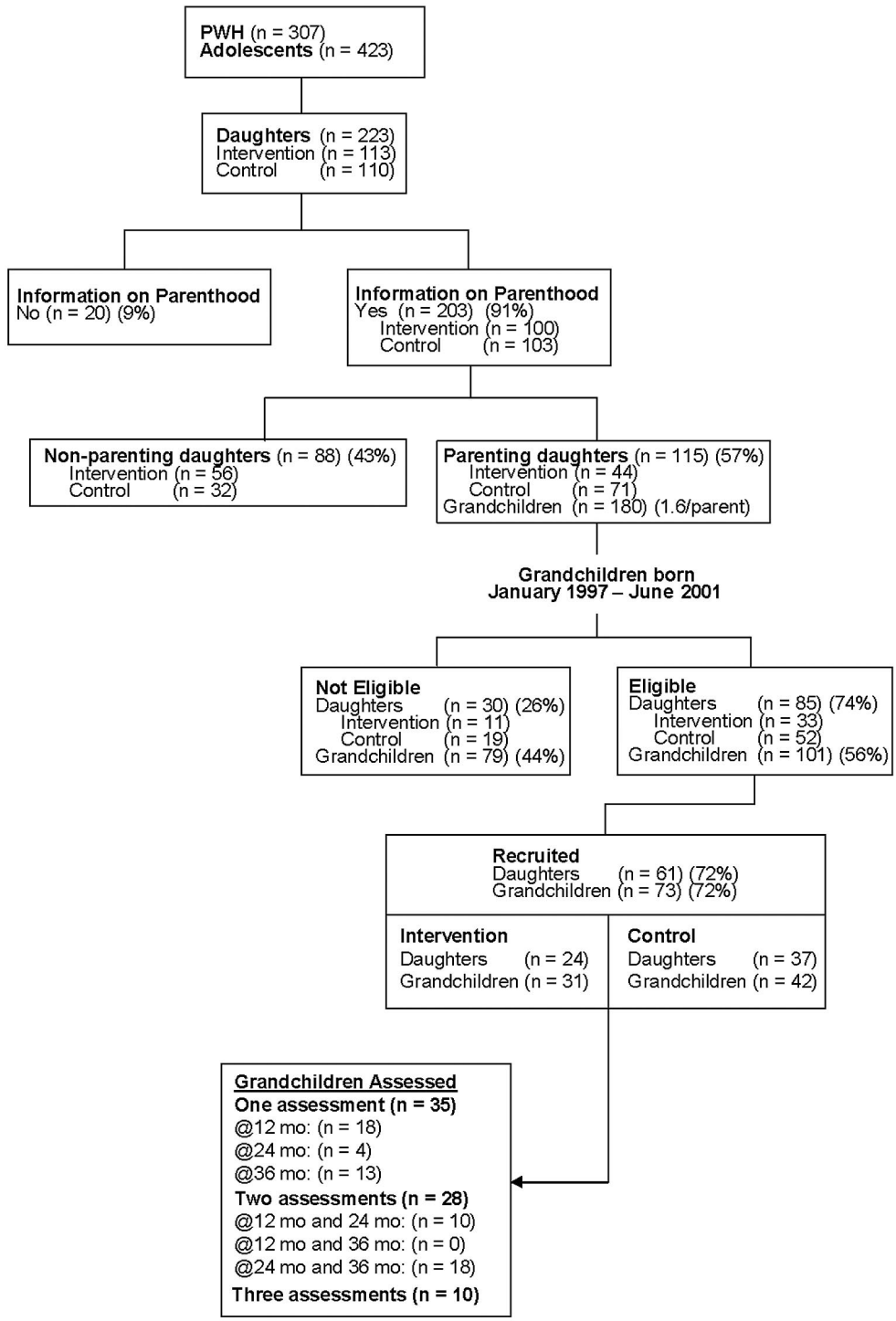

Figure 1. Outline of recruitment of parents with HIV (PWH), their daughters, and grandchildren.

cluded the intervention status, grandchildren's age, and young mothers' depression as fixed effects. The interaction between maternal depression and intervention status was also included only when it was significant to keep the model parsimony. Grandchildren's age (the time effect) was included as a categorical variable in the model. The analysis was conducted with family as a random effect (intercept), and the model considered correlations among measurements taken at 12, 24, and 36 months. The study design actually had four levels (repeated measurements nested within grandchildren, grandchildren nested within daughters, daughters nested within PWH). However, in this analysis, there were only three sibling PWH–daughter pairs (58 PWH and 61 daughters) and 12 sibling grandchildren (61 daughters and 73 grandchildren), indicating that most of these

two levels had only one observation. The small number of observations in these two levels made it difficult to obtain a stable estimate of the effect of these levels, which were not included in the final model. However, we considered the family as a random effect, allowing the estimation of correlation within the family. We used autoregressive correlation structure (indicating decreasing correlations over time) to explain the correlation among repeated measurements in grandchildren. The mixed effects model can be expressed as $Y_{ijk} = \mu + C_l + T_k + TC_{kl} + D_j + U_i + \varepsilon_{ijkl}$, where μ is the grand mean; C_l is the effect of the lth condition; T_k is the effect of the kth time; TC_{kl} is the joint effect (interaction) of the kth time and lth condition; D_j is the effect of daughter's depression for the jth grandchild; U_i is the random effect for ith family; and ε_{ijkl} is the residual term for the jth grandchild of ith family at kth time, nested within lth condition. Each outcome measure was analyzed separately.

Results

Participant Flow and Follow-Up

Previous research demonstrated that daughters in the intervention condition had significantly fewer children than did daughters in the control condition (Rotheram-Borus et al., 2004). Among the daughters with eligible children ($n = 85$; 74% of the daughters), there were 101 grandchildren (see Figure 1). Of these eligible daughters who had become mothers, we recruited 72% of the daughters with 73 children. The daughters who had children during the eligibility period were similar to the daughters who were not recruited in terms of ethnicity, emotional distress, and drug use in both the intervention and the control conditions. However, within the control condition, there tended to be a recruitment bias on two factors: the age at study enrollment, $t(69) = 1.96$, $p = .054$; and daughters' use of alcohol, $\chi^2(1, N = 71) = 3.60$, $p = .058$. Younger daughters and alcohol abstainers in the control condition tended to be recruited more often than older daughters in the control condition who had used alcohol.

Across both the intervention and control conditions, the age of the daughters at baseline and their age at the birth of the first grandchild were similar. Fewer than 10% of the sample (8.3%) reported clinical levels of emotional distress or depression, similar across conditions (Derogatis & Melisaratos, 1983). Table 1 describes the sample grouped by the intervention condition (daughters, $n = 24$; grandchildren, $n = 31$) and the control condition (daughters, $n = 37$; grandchildren, $n = 42$). The samples of the PWH, their daughters, and grandchildren appear comparable and without large selection effects.

Grandchildren's Adjustment

Few grandchildren had low birth weights or parental alcohol or drug use during pregnancy, and this was similar across the intervention condition. Table 2 summarizes the results of the mixed effects model examining the impact of the intervention condition on grandchildren's adjustment, controlling for the child's age and maternal depression.

Behavioral adjustment. Overall, the grandchildren reported relatively normative behavior: The mean number of behaviors reflecting internalizing symptoms (e.g., feeling depressed, nervous, anxious) on the CBCL was 51.62; the mean number of externalizing symptoms (e.g., fighting, hitting) was 51.63, with an overall mean of 51.87 symptoms. These rates are similar to same-age peers of similar socioeconomic status (Achenbach & Rescorla, 2001). Compared with those grandchildren in the control condition, those in the intervention condition were found to have significantly fewer symptoms overall across time, $t(25) = -3.13$, $\beta = -7.3449$, $p = .004$; fewer internalizing symptoms across time, $t(25) = -2.72$, $\beta = -5.8095$, $p = .012$; and fewer externalizing symptoms at 3 years, $t(24) = -4.05$, $\beta = 10.0798$, $p = .001$.

Cognitive development. Overall, the mean Bayley MDI over the 12-, 24-, and 36-month time periods for the entire grandchildren cohort was low: 86.29. Furthermore, significantly lower MDI scores were observed at 24 compared with 12 months for grandchildren in both the intervention and control conditions ($\beta = 13.01$, $df = 52$, $p < .001$). Although average MDI scores increased from 24 to 36 months, the 36-month MDI scores remained significantly lower than the 12-month MDI scores ($\beta = 7.12$, $df = 52$, $p = .01$). Furthermore, grandchildren in the intervention condition tended to have better MDI scores at each assessment window (12, 24, and 36 months) than the grandchildren in the control condition, $t(52) = 1.77$, $\beta = 4.3712$, $p = .083$.

Home environment. At each of the three assessment periods, the mean HOME scores were in the normative range. The mean HOME score at 12 months was 32.22; at 24 months, it was 32.45; and at 36 months, it was 32.30. Grandchildren in the control condition tended to have lower mean HOME scores compared with the intervention condition across time, $t(53) = -1.95$, $\beta = 2.7761$, $p = .056$. At 3 years of age, grandchildren in both conditions had scores lower than reported norms (Forsyth, Avni-Singer, Damour, & Chiccetti, 1997), but their scores were consistent with other multiple-risk, low-socioeconomic groups (Watson, Kirby, Kelleher, & Bradley, 1996).

Impact of daughter's depression. As evidenced in the regression coefficient for the daughters' depression in the mixed model, grandchildren whose mothers reported more symptoms of depression had a significantly higher total CBCL score, $t(25) = 2.37$, $\beta = 6.2380$, $p = .026$; internalizing t score, $t(25) = 2.31$, $\beta = 5.2976$, $p = .029$; and externalizing t score, $t(24) = 2.23$, $\beta = 5.3588$, $p = .036$. Furthermore, lower levels of maternal depression tended to predict better cognitive development in the grandchildren, $t(52) = -1.70$, $\beta = 4.4445$, $p = .095$.

Discussion

This first study of the grandchildren of PWH begins to suggest whether and how parental HIV may have an intergenerational impact. The grandchildren of PWH demonstrated significantly lower levels of cognitive development compared with normative samples of low-income children. Furthermore, the home environments and the cognitive developmental levels of grandchildren were significantly lower as the grandchildren aged, compared with peers of the same socioeconomic level (DeNavas-Walt, Proctor, & Lee, 2005). Other data indicated that the grandchildren were at high risk for disorganized attachment relationships (Ward, Lester, Ilardi, & Finklestein, 2003). However, concurrently, the percentage of grandchildren with low birth weights, the use of alcohol and substance abuse, the quality of home environments, and behavioral symptoms of maladjustment were in the normative range, similar to rates reported in national samples of low-income children in the United States. Thus, there are some areas with deficits, potentially related to the PWH's disease.

Table 1
Characteristics of Daughters and Grandchildren of PWH

Variable	Intervention (grandchildren, $n = 31$; children, $n = 24$)	Control (grandchildren, $n = 42$; children, $n = 37$)	Total (grandchildren, $N = 73$; children, $N = 61$)
	Grandchildren		
% offspring assessed 12 months	58.1%	47.6%	52.1%
% offspring assessed 24 months	54.8%	59.5%	57.5%
% offspring assessed 36 months	54.8%	57.1%	56.2%
Gender (male)	41.9%	61.9%	53.4%
Mean birth weight (g)	3,233.70 (533.22)	3,283.70 (583.45)	3,258.64 (559.64)
No. offspring with low birth weight (≤2,500 g)	1	3	4
Intrauterine exposure			
Alcohol use	0.0%	2.6%	1.5%
Marijuana use	13.8%	5.1%	8.8%
Hard drug use	0.0%	0.0%	0.0%
Tobacco use	20.7%	25.6%	23.5%
Behavioral and emotional symptoms			
CBCL total overall			
Age = 24 months	49.6 (6.74)	55.7 (8.58)	53.3 (8.39)
Age = 36 months	46.2 (7.59)	54.9 (10.41)	51.4 (10.21)
CBCL Internalizing			
Age = 24 months	48.5 (6.49)	55.0 (7.41)	52.5 (7.67)
Age = 36 months	48.1 (8.66)	53.3 (10.53)	51.2 (10.02)
CBCL Externalizing			
Age = 24 months	51.5 (7.77)	54.5 (7.71)	53.3 (7.76)
Age = 36 months	44.5 (6.88)	54.7 (9.48)	50.6 (9.82)
Cognitive development: Bayley MDI			
Age = 12 months	94.9 (11.80)	89.4 (10.67)	91.9 (11.40)
Age = 24 months	80.8 (13.27)	76.3 (10.49)	78.3 (11.85)
Age = 36 months	86.9 (9.20)	82.8 (14.23)	84.6 (12.33)
Home environment: HOME			
Age = 12 months	34.8 (3.72)	29.9 (6.27)	32.2 (5.70)
Age = 24 months	34.1 (5.73)	31.2 (6.01)	32.4 (5.99)
Age = 36 months	33.4 (5.40)	31.4 (5.83)	32.3 (5.66)
	Daughters		
Age at baseline	15.5 (2.4)	14.6 (1.7)	14.9 (2.0)
Age at birth of the first target child	19.7 (2.4)	18.9 (2.3)	19.2 (2.3)
Ethnicity			
African American	33.3%	29.7%	31.2%
Latino	50.0%	59.5%	55.7%
Whites and others	16.7%	10.8%	13.1%
Bereaved (PWH died)	54.2%	46.0%	49.2%
Baseline Brief Symptom Inventory			
Overall	0.82 (0.53)	0.76 (0.67)	0.79 (0.61)
Depression	0.84 (0.72)	0.71 (0.85)	0.76 (0.80)
Anxiety	0.49 (0.52)	0.72 (0.87)	0.63 (0.75)

Note. Values given are means (with standard deviations in parentheses). PWH = parents with HIV; CBCL = Child Behavior Checklist; MDI = Mental Development Index; HOME = Home Observation for Measurement of the Environment.

The grandchildren of PWH were not targeted by the intervention; their inclusion was possible only because many daughters became parents over the course of the study. There was a tendency for the recruited daughters in the control condition to be younger and to use less alcohol than the overall sample, potentially indicating a selection bias. However, because grandchildren were recruited only during a specific time period, older daughters who became mothers at an earlier time in the study would not have been eligible to participate.

Several years after daughters and their PWH received a family-based, skill-focused intervention, the grandchildren demonstrated significantly fewer behavioral symptoms and tended to have better cognitive outcomes and more enriched home environments than did grandchildren in families coping with HIV who did not receive an intervention. Although current HIV policies focus primarily on antiretroviral therapies for persons living with HIV, the importance of providing preventive psychosocial interventions for families coping with HIV is highlighted by these findings. The specific mechanisms leading to better grandchild adjustment are not illuminated by this study. Even if it is generic to suggest better adjusted daughters parent better adjusted infants, the findings suggest long-term benefits for preventive interventions with families coping with HIV. Rather than HIV creating a negative spiral for families' adjustment, interventions can serve to mobilize families to improve the quality of their lives.

Table 2
Results of Multiple Linear Regressions of the Intervention and Daughter Depression on Behavioral and Emotional Symptoms, Cognitive Development, and Home Environment at 12, 24, and 36 Months

Offspring outcomes	Intervention	BSI Dep	Age = 24 months	Age = 36 months	Interaction between age and intervention	Standardized intervention effect size
Behavioral and emotional symptoms						
CBCL total	−7.34 (2.34)**	6.24 (2.63)*	—	−2.09 (1.36)	*ns*	−.876
CBCL Internalizing	−5.81 (2.14)*	5.30 (2.29)*	—	−1.47 (1.78)	*ns*	−.757
CBCL Externalizing	−3.12 (2.53)	5.36 (2.41)*	—	0.47 (1.63)	−6.96 (2.65)*	−.856
Cognitive development: Bayley MDI	4.37 (2.47)†	−4.44 (2.61)†	−13.01 (2.48)**	−7.12 (2.66)**	*ns*	.383
Home environment: HOME	2.78 (1.42)†	−0.34 (1.40)	−0.25 (0.85)	0.45 (0.91)	*ns*	.487

Note. Values given are parameter estimates (with standard errors in parentheses). Reference age = 12 months (except for the behavioral and emotional symptom measures). Dashes indicate that behavioral and emotional symptoms were not measured at Age = 12 months; Age = 24 months was used as the reference age. Those interactions that were nonsignificant were excluded from the final model. Intervention effect size was calculated by the intervention effect divided by the standard deviation at Age = 12 months. BSI Dep = Brief Symptom Inventory Depression Scale; CBCL = Child Behavior Checklist; MDI = Mental Development Index; HOME = Home Observation for Measurement of the Environment.
† $p < .10$. * $p < .05$. ** $p < .01$.

This study is limited in several ways. The PWH and their daughters were repeatedly monitored and offered referral services over 6 years, including families in the control condition. These are substantial services likely to result in the grandchildren being better adjusted than families coping with HIV who were not involved in research. The timing of the study's assessments resulted in missing assessments of some grandchildren at each time point, although we used random effects regression analysis to address this potential problem. The retrospective, self-reported frequency of low birth weight in the grandchildren or prenatal drug or alcohol in the daughters was too low to allow us to explore the hypotheses about the impact of the family-based intervention on these outcomes. Future studies would be strengthened by prospective assessment as well as assessments informed by multiple observers and diverse monitoring strategies.

References

Achenbach, T. M. (1992). *Manual for Child Behavior Checklist/2–3 and 1992 profile*. Burlington, VT: University of Vermont, Department of Psychiatry.

Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms and profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

Bayley, N. (1969). *Manual for the Bayley Scales of Infant Development*. New York: Psychological Corporation.

Bryk, A., & Raudenbush, S. (1992). *Hierarchical linear models*. Newbury Park, CA: Sage.

Caldwell, B. M., & Bradley, R. H. (1984). *Home Observation for Measurement of the Environment*. Little Rock: University of Arkansas.

Centers for Disease Control and Prevention. (2001). *HIV/AIDS surveillance report* (Vol. 13, No. 1). Atlanta, GA: Author.

Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin, 127,* 87–127.

DeNavas-Walt, C., Proctor, B., & Lee, C. H. (2005). *Income, poverty, and health insurance coverage in the United States*. Washington, DC: U.S. Department of Commerce.

Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory report. *Psychological Medicine, 13,* 595–605.

Forsyth, B. W. C., Avni-Singer, A. J., Damour, L. S., & Chiccetti, D. V. (1997). Development of a supplement to the HOME Scale for children living in impoverished urban environments. *Journal of Developmental and Behavioral Pediatrics, 18,* 322–328.

Frierson, R. L., Lippmann, S. B., & Johnson, J. (1987). HIV/AIDS: Psychological stresses on the family. Recommendations for counseling relatives of the AIDS patient. *Psychosomatics, 28,* 65–68.

Linver, M. R., Brooks-Gunn, J., & Kohen, D. E. (2002). Family processes as pathways from income to young children's development. *Developmental Psychology, 38,* 719–734.

Motta, R. W. (1990). Personal and intrafamilial effects of the Vietnam war experience. *The Behavior Therapist, 13,* 155–157.

Romer, G., Barkman, C., Schulte-Markwort, M., Thomalla, G., & Riedesser, P. (2002). Children of somatically ill parents: A methodological review. *Clinical Child Psychology and Psychiatry, 7,* 17–38.

Rotheram-Borus, M. J., Lee, M. B., Gwadz, M., & Draimin, B. (2001). An intervention for parents with AIDS and their adolescent children. *American Journal of Public Health, 91,* 1294–1302.

Rotheram-Borus, M. J., Lee, M. B., Lin, Y. Y., & Lester, P. (2004). Six-year intervention outcomes for adolescent children of parents with HIV. *Archives of Pediatrics & Adolescent Medicine, 158,* 742–748.

Rotheram-Borus, M. J., Murphy, D. A., Miller, S., & Draimin, B. H. (1997). An intervention for adolescents whose parents are living with AIDS. *Clinical Child Psychology and Psychiatry, 2,* 201–219.

Stanton, A. L., Collins, C. A., & Sworowski, L. A. (2001). Adjustment to chronic illness: Theory and research. In A. Baum, T. A. Revenson, & J. E. Singer (Eds.), *Handbook of health psychology* (pp. 387–403). New York: Erlbaum.

Ward, M. J., Lester, P., Ilardi, M. B., & Finklestein, M. (2003, April). *Relationships and parenting in the face of HIV*. Paper presented at the biennial meetings of the Society for Research in Child Development, Tampa, FL.

Watson, J. E., Kirby, R. S., Kelleher, K. J., & Bradley, R. H. (1996). Effects of poverty on home environment: An analysis of three-year outcome data for low birth weight premature infants. *Journal of Pediatric Psychology, 21,* 419–431.

Zayas, L. H., & Romano, K. (1994). Adolescents and parental death from AIDS. In B. O. Dane & C. Levine (Eds.), *The new orphans: AIDS and the family* (pp. 59–76). Westport, CT: Auburn House.

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