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Risk Factors for Distress in the Adolescent Children of HIV-positive and HIV-negative Drug-Abusing Fathers

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Abstract

In contrast to previous research on parental drug abuse, the present study examined comorbid drug addiction and HIV infection in the father as related to his adolescent child's psychological distress. Individual structured interviews were administered to 505 HIV-positive and HIV-negative drug-abusing fathers and one of their children, aged 12–20. Structural equation modeling tested an hypothesized model linking paternal latent variables, ecological factors, and adolescent substance use to adolescent distress. Results demonstrated a direct pathway between paternal and adolescent distress, as well as an indirect pathway; namely, paternal distress was linked with paternal teaching of coping skills to the child, which in turn was related to adolescent substance use and, ultimately, to the adolescent's distress. There was also an association between paternal drug addiction/HIV and adolescent distress, which was mediated by both ecological factors and adolescent substance use. Findings suggest an increased risk for distress in the adolescent children of fathers with comorbid drug addiction and HIV/AIDS, which may be further complicated by paternal distress. Results suggest several opportunities for prevention and treatment programs for the children of drug-abusing fathers.

Keywords

Adolescent distress; Paternal HIV/AIDS; Paternal drug abuse; Paternal distress; Father-child relationship

Introduction

An increasing number of youth have one or more parents who abuse illegal drugs and who have also contracted HIV/AIDS as a result of drug use (NIDA, 2004; UNAIDS, 2004). However, there is a dearth of empirical research on the effects of comorbid parental drug abuse and HIV/AIDS on the child (Woodring et al., 2005), and no studies, to our knowledge, have examined mediational factors. To fill this void, the present study used a mediational model to assess the relationship of the father's drug abuse and HIV/AIDS to distress in his adolescent child in the context of paternal distress, the father's teaching of coping skills, ecological factors, and adolescent substance use.

Investigations that have assessed the independent effects of paternal drug abuse or paternal HIV/AIDS on the adolescent child have shown that family processes, as well as the child's behaviors, may be mediating factors (e.g., Armistead et al., 1997; Ohannessian & Hesselbrock, 2007). To date, however, psychosocial investigations of parental HIV/AIDS have mostly examined mothers (Sherr & Barry, 2004). Studies on drug-abusing fathers whose HIV/AIDS status was not assessed have consistently demonstrated high rates of clinical disorders and subclinical problems in both the pre-adolescent and the adolescent child, e.g., Anxiety and Mood Disorders (Nunes et al., 2000), psychosocial impairment (Fals-Stewart et al., 2002; Nunes et al., 2000). In addition, the literature has established an increased risk for substance use, abuse and dependence in the adolescent children of drug-abusing parents (Biederman et al., 2000; Su et al., 1997).

The present study, therefore, hypothesized that the association between paternal drug addiction and HIV/AIDS and the adolescent's distress would be mediated by both paternal teaching of coping skills and the adolescent's substance use. It was also expected that the father's addiction and HIV status would be linked with ecological factors since drug abusers, including those who are HIV-positive, tend to cluster in low-income urban communities (Hogan, 1998), where children may be exposed to a number of factors (e.g., drug trafficking, social disorganization) which put them at risk for substance use and distress (Lambert et al., 2004).

Research suggests that children of distressed parents have elevated levels of distress (D'Angelo et al., 1995). This association, furthermore, may be mediated by ineffective childrearing practices due to parental distress (Conger et al., 2002; Gutman et al., 2005). Thus, in the present study, we hypothesized that the association between paternal and adolescent distress would be partially mediated by the father's teaching of adaptive coping strategies as well as by adolescent substance use. We also hypothesized a direct effect of paternal distress on distress in the child, based on studies of psychopathological symptoms and disorders, which have found high rates of specificity of parent to child transmission (e.g., Merikangas & Dierker, 1998).

Adolescents residing in underserved, low-income environments, with high levels of drug use, drug trafficking, and gang activity, are at elevated risk for psychological maladjustment and problem behaviors, including substance use (Latkin & Curry, 2003; Li et al., 1999; Thornberry et al., 1993). In addition, the perception of discrimination (e.g., due to poverty, ethnic/racial minority status, and/or familial HIV/AIDS) has been linked to adolescent affective problems, including distress (Fisher et al., 2000; Roth et al., 1994). Economic pressures, furthermore, may undermine skilled parenting practices, and adversely impact adolescent adjustment (Conger et al., 2002). Therefore, in the present study, we hypothesized that both paternal teaching of coping skills to the child as well as the adolescent's substance use would mediate the association between ecological factors and adolescent distress.

There is a dearth of literature specifically on parental teaching of coping skills to the child, and most studies have focused on medically ill juveniles (e.g., Blount et al., 1991; Reid et al., 2005). Research on these special populations suggests that parental promotion of effective coping skills increases the child's own coping abilities which, in turn, decrease his/her pain or distress (Blount et al., 1991). In the present study, we postulated that the effectiveness of paternal teaching of coping skills would be enhanced by the child's identification with the father, and would decrease the likelihood of adolescent substance use.

There is some evidence that adolescent substance use may affect components of distress (e.g., depressive symptoms), both concurrently and prospectively (Wu & Anthony, 1999; Newcomb & Felix-Ortiz, 1992). Based on this paradigm, we expected the adolescent's substance use to mediate the relationship between both the father's distress and his teaching of coping skills and distress in his adolescent child.

In sum, Figure 1 presents several pathways which were hypothesized to link both paternal distress and paternal drug addiction/HIV with distress in the adolescent child. (See Figure 1.)

Method

Participants

The sample consisted of HIV-positive and HIV-negative drug-abusing fathers and their adolescent children (N=505). The reader is referred to Brook et al. (2006) for a detailed description of recruitment procedures. The demographic characteristics of the adolescent participants and their fathers are presented in Table 1 (see Table 1).

Procedure

Each father and adolescent pair was administered individual structured interviews by trained interviewers, separately and in private. Interviews took approximately 2 hours, and all participants were paid for the interview to compensate their time and effort. In keeping with institutional and federal guidelines for the protection of human subjects, written, informed consent was obtained from all participants. In addition, fathers or legal guardians provided written informed consent for their child's participation if he/she were under 18 years old. Approval of the Institutional Review Board was also obtained, as was a Certificate of Confidentiality from the National Institute on Drug Abuse.

Measures

Five latent variables were hypothesized: (1) Paternal Distress, (2) Paternal Drug Addiction and HIV status, (3) Paternal Teaching of Coping Skills to the Child, (4) Ecological Factors, and 5) the Adolescent's Substance Use. The scales comprising the latent variables, detailed in Table 2, were based on the adolescent's self-report, with the exception of Paternal Distress (see Table 2). These scales have been used extensively in prior research to predict drug use, delinquency, and psychopathology in African American, Puerto Rican and White samples of adolescents and their parents (Brook et al., 1990; Donovan et al., 1991). The dependent latent variable, Adolescent Distress, was a combination of three self-reported measures of symptomatology during the past few years: Depression (Derogatis et al., 1974), Obsessiveness (Uhlenhuth & Covi, 1974), and Interpersonal Difficulty (Uhlenhuth & Covi, 1974). The response range for each of the items of the dependent latent variable was from 1 ("Not at all") to 5 ("Extremely"). Thus, higher scores denoted greater adolescent distress. The standardized loadings of each of the scales on the latent construct of Distress were: Depression (.84), Obsessiveness (.85), and Interpersonal Difficulty (.85). The dependent latent variable was based on prior research (e.g., Poulin et al., 2005), and the scales

comprising this measure have been shown to significantly correlate with respective measures of clinical disorders, e.g., DSM-IV Obsessive Compulsive Disorder (Apter et al., 1996). The Cronbach's alphas for all scales were 0.75 and satisfactory. There were no missing data for the measurement of adolescent distress.

Results

Using LISREL VIII (Jöreskog & Sörbom, 1996), Maximum Likelihood Methods of latent variable structural equation modeling (SEM) was employed to estimate the models. The factor loadings were all significant ($p < 0.01$), which demonstrated that the indicator variables were good measures of the latent constructs. The correlations among the variables derived from the co-variance matrices and the information about the factor loadings from the measurement model are available from the authors upon request.

Figure 2 presents the final model with the standardized structural coefficients. The following fit indices were obtained: SRMR (Standardized Root Mean Square Residual) = 0.06, GFI (Goodness of Fit Index) = 0.93, and CFI (Comparative Fit Index) = 0.93. These results reflect a satisfactory model fit. (See Figure 2.)

As shown in Table 3, an examination of the total effects showed that each latent variable estimated in the analysis had significant total effects on adolescent distress. (All t -values were significant at $p < 0.001$.) (See Table 3.)

Discussion

The findings of the present study generally supported our hypotheses. Paternal distress had a direct, as well as indirect, effects (mediated by paternal teaching of coping skills, ecological factors, and adolescent substance use), on the adolescent's distress. Paternal drug addiction/HIV was related to adolescent distress through the mediation of ecological factors and adolescent substance use. To our knowledge, the present study of urban, low-income African Americans and Latinos in four U.S. cities is the first to examine the mediation between comorbid paternal drug abuse/HIV and adolescent distress.

Consistent with our results, several studies have shown increased rates of substance use in the children of drug-abusing fathers (Kirisici et al., 2005; Su et al., 1997). Rotheram-Borus et al. (1999) also found an association between parental illicit drug use and adolescent marijuana use in the children of HIV-positive parents. In the present study, the direct effect of paternal drug addiction/HIV on the child's substance use may suggest the adolescent's role modeling of the father's risk behaviors and/or a genetic diathesis for substance use, shared by father and child (Moss et al., 1999; Silverman & Schonberg, 2001). Furthermore, our findings extend the previous research by demonstrating that adolescent substance use was, in turn, related to adolescent distress.

In addition, adolescents who reported that their fathers engaged in greater risk activities were more likely to perceive their neighborhoods as having greater social disorganization, fewer institutional resources, and increased deviant activities, which have been found to be linked with adolescent substance use (Lambert et al., 2004).

The direct effect of paternal distress on adolescent distress in our model implies the child's role modeling of the father (i.e., distress may be, in part, a learned behavior; Bandura, 1977) and/or that the father and child share a genetic predisposition toward symptoms of distress (Vaillant et al., 2005). This result also suggests that the father's distress is a risk factor for distress in his child, independent of paternal drug addiction/HIV and mediating variables. In

a related vein, Nunes et al. (1998) demonstrated higher rates of psychopathology in the sons of fathers with comorbid drug-abuse and depression.

The indirect effects of paternal distress are consistent with prior research that linked paternal distress with less adequate parenting skills, which adversely impact child adjustment (Conger et al., 2002; Papp et al., 2005). Fathers with greater distress may also have less effective coping strategies (Heckman et al., 2004), which undermine the teaching of coping skills to their child.

The concentration of drug addiction, criminal activity, and HIV/AIDS in urban low-income communities (Hogan, 1998; Wallace, 2003) may constitute a stressful environment for the adolescent (Prelow et al., 2004), and increase their likelihood of engaging in substance use (Dubow et al., 1997). Consistent with the theory of social disorganization, ecological factors, such as drug trafficking, gangs and less neighborhood cohesion, may impact adolescents through a lack of community norms against drug use (Pantin et al., 2003) or the absence of informal social controls (Newcomb & Felix-Ortiz, 1992). Furthermore, paternal drug abuse/HIV, as well as membership in a racial/ethnic minority group, may increase the youth's (perceived) discrimination (Roth et al., 1994), which has also been associated with adolescent substance use (Landrine et al., 2006; Vakalahi, 2001).

Our results with respect to paternal teaching of coping skills extend the literature on the protective affect of the parent-child relationship against adolescent substance use (Brook et al., 1990; Cohen et al., 1994; Jordon & Lewis, 2005). Our findings are also partially supported by Fals-Stewart et al. (2004), who showed an association between the parenting behaviors of drug-abusing fathers and the psychological adjustment of their pre-adolescent children. In addition, the scant prior research on parental coping promotion showed it to be related to more favorable child outcomes, such as less distress (Kliewer, 1996). Overall, the father's conveyance of information and coping skills to his child, and the child's identification with his father, appear to have decreased the likelihood of the adolescent's maladaptive coping in the form of substance use.

Similar to our finding of a direct association between adolescent substance use and distress, Griffin et al. (2002) showed that substance use predicted psychological distress in a community sample of urban ethnic/racial minority youth. There are several possible mechanisms for this linkage. For instance, marijuana use has been associated with an amotivational syndrome, which can impede the successful accomplishment of normative developmental tasks (e.g., school completion; Bray et al., 2000) and, in turn, engender adolescent distress (Johnson & Kaplan, 1990).

Study Limitations

There are a few limitations to this study. First, genetic contributions to parent and child distress were beyond the scope of this paper, and might be considered in future research. Second, as causality cannot be inferred from the cross-sectional data in our study, substance use and distress both may be interrelated and maladaptive responses to stressful, unsupportive environments in which drug use and distress are pervasive models of behavior. Nonetheless, the present study presents a cogent explanatory model of the inter-relationships of several important factors which are linked to adolescent substance use and distress in the children of HIV-positive and HIV-negative drug-abusing fathers.

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References

- APTER A, FALLON TJ JR, KING RA, RATZONI G, ZOHAR AH, BINDER M, WEIZMAN A, LECKMAN JF, PAULS DL, KRON S, COHEN DJ. Obsessive-compulsive characteristics: from symptoms to syndrome. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1996; 35(7):907–912. [PubMed: 8768350]
- ARMISTEAD L, KLEIN K, FOREHAND R, WIERSON M. Disclosure of parental HIV infection to children in the families of men with hemophilia: Description, outcomes, and the role of family processes. *Journal of Family Psychology*. 1997; 11(1):49–61.
- BANDURA, A. *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall; 1977.
- BIEDERMAN J, FARAONE SV, MONUTEAUX MC, FEIGNER JA. Patterns of alcohol and drug use in adolescents can be predicted by parental substance use disorder. *Pediatrics*. 2000; 106(4): 792–797. [PubMed: 11015524]
- BLOUNT RL, LANDOLF-FRITSCH B, POWERS SW, STURGES JW. Differences between high and low coping children and between parent and staff behaviors during painful medical procedures. *Journal of Pediatric Psychology*. 1991; 16(6):795–809. [PubMed: 1798015]
- BRAY JW, ZARKIN GA, RINGWALT C, QI J. The relationship between marijuana initiation and dropping out of high school. *Health Economics*. 2000; 9(1):9–18. [PubMed: 10694756]
- BROOK DW, BROOK JS, RICHTER L, MASCI JR, ROBERTO J. Needle sharing: A longitudinal study of female injection drug users. *The American Journal of Drug Alcohol Abuse*. 2000; 26(2): 263–281.
- BROOK DW, BROOK JS, RICHTER L, WHITEMAN M, WIN PT, MASCI JR, ROBERTO J. Coping strategies of HIV-positive and HIV-negative female injection drug users: A longitudinal study. *AIDS Education and Prevention*. 1999a; 11(5):373–388. [PubMed: 10555622]
- BROOK DW, BROOK JS, RUBENSTONE E, ZHANG C. Aggressive behaviors in the adolescent children of HIV-positive and HIV-negative drug-abusing fathers. *American Journal of Drug and Alcohol Abuse*. 2006; 32(3):399–413. [PubMed: 16864470]
- BROOK DW, BROOK JS, WHITEMAN M, ROBERTO J, MASCI JR, AMUNDSEN F, DE CATALOGNE J. Coping among HIV-negative and HIV-positive female injection drug users. *AIDS Education and Prevention*. 1999b; 11(3):262–273. [PubMed: 10407459]
- BROOK JS, BROOK DW, GORDON AS, WHITEMAN M, COHEN P. The psychosocial etiology of adolescent drug use: A Family Interactional approach. *Genetic Social and General Psychology Monograph*. 1990; 116:111–267.
- BROOK JS, WHITEMAN M, BALK A EB, WIN PE, GURSEN MD. African-American and Puerto Rican drug use: A longitudinal study. *Journal of the American Academy of Child Adolescent Psychiatry*. 1997; 36(9):1260–1268.
- COHEN DA, RICHARDSON J, LABREE L. Parenting behaviors and the onset of smoking and alcohol use: A longitudinal study. *Pediatrics*. 1994; 94(3):368–375. [PubMed: 8065865]
- CONGER RD, WALLACE LE, SUN Y, MCLOYD VC, BRODAY GH. Economic pressure in African American families: A replication and extension of the family stress model. *Developmental Psychology*. 2002; 38(2):179–193. [PubMed: 11881755]
- D'ANGELO LL, WEINBERGER DA, FELDMAN SS. Like father, like son? Predicting male adolescents' adjustment from parents' distress and self-restraint. *Developmental Psychology*. 1995; 31(6):883–896.
- DENAVAS-WALT, C.; PROCTOR, BD.; LEE, CH. US Census Bureau, Current Population Reports, P60–229. Washington, DC: U.S. Government Printing Office; 2005. Income, Poverty, and Health Insurance Coverage in the United States: 2004.

- DEROGATIS LR, LIPMAN RS, RICHEL K, UHLENHUTH EH, COVI L. The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Behavioral Science*. 1974; 19:1–15. [PubMed: 4808738]
- DONOVAN JE, JESSOR R, COSTA FM. Adolescent health behavior and conventionality-unconventionality: an extension of problem behavior theory. *Health Psychology*. 1991; 10:52–61. [PubMed: 2026131]
- DUBOW EF, EDWARDS S, IPPOLITO MF. Life stressors, neighborhood disadvantage, and resources: A focus on inner-city children's adjustment. *Journal of Clinical Child Psychology*. 1997; 25(2):130–144. [PubMed: 9169374]
- FALS-STEWART W, KELLEY ML, COOKE CG, GOLDEN J. Predictors of the psychosocial adjustment of children living in households of parents in which fathers abuse drugs. The effects of postnatal parental exposure. *Addictive Behaviors*. 2002; 27:1–19. [PubMed: 11800216]
- FALS-STEWART W, KELLEY ML, FINCHAM FD, GOLDEN J, LOGSDON T. Emotional and behavioral problems of children living with drug-abusing fathers: comparisons with children living with alcohol-abusing and non-substance-abusing fathers. *Journal of Family Psychology*. 2004; 18(2):319–330. [PubMed: 15222839]
- FISHER CB, WALLACE SA, FENTON RE. Discrimination distress during adolescence. *Journal of Youth and Adolescence*. 2000; 29(6):679–695.
- GRIFFIN KW, BOTVIN GJ, SCHEIER LM, EPSTEIN JA, DOYLE MM. Personal competence skills, distress, and well-being as determinants of substance use in a predominantly minority urban adolescent sample. *Preventive Science*. 2002; 3(1):23–33.
- GUTMAN LM, MCLOYD VC, TOKOYAWA T. Financial strain, neighborhood stress, parenting behaviors, and adolescent adjustment in urban African American families. *Journal of Research on Adolescence*. 2005; 15(4):425–449.
- HECKMAN TG, ANDERSON ES, SIKKEMA KJ, KOCHMAN A, KALICHMAN SC, ANDERSON T. Emotional distress in nonmetropolitan persons living with HIV disease enrolled in a telephone-delivered, coping improvement intervention. *Health Psychology*. 2004; 23(1):94–100. [PubMed: 14756608]
- HOGAN D. Annotation: the psychological development and welfare of children of opiate and cocaine users: review and research needs. *Journal of Child Psychology and Psychiatry and Allied Disciplines*. 1998; 39(5):609–620.
- JOHNSON RJ, KAPLAN HB. Stability of psychological symptoms: Drug use consequences and intervening processes. *Journal of Health and Social Behavior*. 1990; 31(3):277–291. [PubMed: 2133481]
- JOINT UNITED NATIONS PROGRAMME ON HIV/AIDS (UNAIDS). 2004 Rapport sur l'épidémie mondiale de SIDA. Geneva: UNAIDS; 2004.
- JORDON LC, LEWIS ML. Paternal relationship quality as a protective factor: preventing alcohol use among African American adolescents. *Journal of Black Psychology*. 2005; 31(2):152–171.
- JÖRESKOG, KG.; SÖRBOM, D. LISREL 8: User's Reference Guide. Chicago: Scientific Software International; 1996.
- KIRISCI L, VANYUKOV M, TARTER R. Detection of youth at high risk for substance use disorders: a longitudinal study. *Psychology of Addictive Behaviors*. 2005; 19(3):243–252. [PubMed: 16187802]
- KLIEWER W, FEARNOW MD, MILLER PA. Coping socialization in middle childhood: tests of maternal and paternal influences. *Child Development*. 1996; 67:2339–2357. [PubMed: 9022245]
- LAMBERT SF, BROWN TL, PHILLIPS CM, IALONGO NS. The relationship between perceptions of neighborhood characteristics and substance use among urban African American adolescents. *American Journal of Community Psychology*. 2004; 34(3–4):205–218. [PubMed: 15663207]
- LANDRINE H, KLONOFF EA, CORRAL I, FERNANDEZ S, ROESCH S. Conceptualizing and measuring ethnic discrimination in health research. *Journal of Behavioral Medicine*. 2006; 29(1):79–94. [PubMed: 16470345]
- LATKIN CA, CURRY AD. Stressful neighborhoods and depression: a prospective study of the impact of neighborhood disorder. *Journal of Health and Social Behavior*. 2003; 44(1):34–44. [PubMed: 12751309]

- LI X, STANTON B, FEIGELMAN S. Exposure to drug trafficking among urban, low-income African American Children and adolescents. *Archives of Pediatrics and Adolescent Medicine*. 1999; 153:161–168. [PubMed: 9988246]
- MCCORD J. Some child-rearing antecedents of criminal behavior in adult men. *Journal of Personality and Social Psychology*. 1979; 9:1477–1486. [PubMed: 501519]
- MERIKANGAS KR, DIERKER LC. Psychopathology among offspring of parents with substance abuse and/or anxiety disorders: A high-risk study. *Journal of Child Psychology and Psychiatry and Allied Disciplines*. 1998; 39(5):711–720.
- MOSS HB, VANYUKOV M, YAO JK, KIRILLOVA GP. Salivary cortisol responses in prepubertal boys: the effects of parental substance abuse and association with drug use behavior during adolescence. *Biological Psychiatry*. 1999; 45(10):1293–1299. [PubMed: 10349035]
- NATIONAL INSTITUTE ON DRUG ABUSE. NIDA InfoFacts. Nov. 2004 Retrieved November 21, 2005 from <http://www.nida.nih.gov/PDF/Infofacts/DrugsAIDS04.pdf>
- NEWCOMB MD, FELIX-ORTIZ M. Multiple protective and risk factors for drug use and abuse: Cross-sectional and prospective findings. *Journal of Personality and Social Psychology*. 1992; 63(2):280–296. [PubMed: 1403617]
- NUNES EV, WEISSMANN MM, GOLDSTEIN R, MCAVAY G, BECKFORD C, SERACINI A, VERDELI H, WICKRAMARATNE P. Psychiatric Disorders and impairment in the children of opiate addicts: prevalences and distribution by ethnicity. *The American Journal on Addictions*. 2000; 9:232–241. [PubMed: 11000919]
- NUNES EV, WEISSMAN MM, GOLDSTEIN RB, MCAVAY G, SERACINI AM, VERDELI H, WICKRAMARATNE PJ. Psychopathology in children of parents with opiate dependence and/or major depression. *Journal of the American Academy of Child and Adolescent Psychiatry*. 1998; 37(11):1142–1151. [PubMed: 9808925]
- OHANNESSIAN CM, HESSELBROCK VM. Do personality and risk taking mediate the relationship between paternal substance dependence and adolescent substance use? *Addictive Behaviors*. (In press).
- PANTIN H, SCHWARTZ SJ, SULLIVAN S, COATSWORTH JD, SZAPOCZNIK J. Preventing substance abuse in Hispanic immigrant adolescents: An ecodevelopmental, parent-centered approach. *Hispanic Journal of Behavioral Science*. 2003; 25:469–500.
- PAPP LM, CUMMINGS EM, GOEKE-MOREY MC. Parental psychological distress, parent-child relationship qualities, and child adjustment: direct, mediating, and reciprocal pathways. *Parenting: Science and Practice*. 2005; 5(3):259–283.
- POULIN C, LEMOINE O, POIRIER LR, LAMBERT J. Validation study of a nonspecific psychological distress scale. *Social Psychiatry and Psychiatric Epidemiology*. 2005; 40(12):1019–1024. [PubMed: 16215656]
- PRELOW HM, DANOFF-BURG S, SWENSON RR, PULGIANO D. The impact of ecological risk and perceived discrimination on the psychological adjustment of African American and European American youth. *Journal of Community Psychology*. 2004; 32(4):375–389.
- REID GJ, MCGRATH PJ, LANG BA. Parent-child interactions among children with juvenile fibromyalgia, arthritis, and healthy controls. *Pain*. 2005; 113(1–2):2101–2110.
- ROTH J, SIEGEL R, BLACK S. Identifying the mental health needs of children living in families with AIDS or HIV infection. *Community Mental Health Journal*. 1994; 30(6):581–593. [PubMed: 7835043]
- ROTHERAM-BORUS MJ, STEIN JA. Problem behaviors of adolescents whose parents are living with AIDS. *American Journal of Orthopsychiatry*. 1999; 69(2):228–239. [PubMed: 10234388]
- SHERR L, BARRY N. Fatherhood and HIV-positive heterosexual men. *HIV Medicine*. 2004; 5:258–263. [PubMed: 15236614]
- SILVERMAN K, SCHONBERG SK. Adolescent children of drug-abusing parents. *Adolescent Medicine*. 2001; 12(3):485–491. [PubMed: 11602448]
- SU SS, HOFFMANN JP, GERSTEIN DR, JOHNSON RA. The effect of home environment on adolescent substance use and depressive symptoms. *Journal of Drug Issues*. 1997; 27:851–877.
- THORNBERRY TP, KROHN MD, LIZOTTE AJ, CHARD-WIERSCHEM D. The role of juvenile gangs in facilitating delinquent behavior. *Journal of Crime and Delinquency*. 1993; 30:55–87.

- UHLENHUTH EH, COVI L. The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Behavioral Science*. 1974; 19:1–15. [PubMed: 4808738]
- VAILLANT GE, BATALDEN M, ORAV J, ROSTON D, BARRETT JE. Evidence for a possibly X-linked trait related to affective illness. *Australian and New Zealand Journal of Psychiatry*. 2005; 39(8):730–735. [PubMed: 16050928]
- VAKALAHU HF. Adolescent substance use and family-based risk and protective factors: A literature review. *Journal of Drug Education*. 2001; 31(1):29–46. [PubMed: 11338964]
- WALLACE RG. AIDS in the HAART era: New York's heterogeneous geography. *Social Science and Medicine*. 2003; 56(6):1155–1171. [PubMed: 12600355]
- WOODRING LA, CANCELLI AA, PONTEROTTO JG, KEITEL MA. A qualitative investigation of adolescents' experiences with parental HIV/AIDS. *American Journal of Orthopsychiatry*. 2005; 75(4):658–675. [PubMed: 16262522]
- WU LT, ANTHONY JC. Tobacco smoking and depressed mood in late childhood and early adolescence. *American Journal of Public Health*. 1999; 89(12):1837–1840. [PubMed: 10589312]

Figure 1.
Hypothesized structural equation model of the latent constructs of paternal distress, paternal drug addiction and HIV/AIDS, paternal teaching of coping skills, ecological factors, adolescent substance use, and adolescent distress (N=505).
Ellipses represent latent constructs and rectangles are observed variables within latent constructs.

Figure 2. Obtained structural equation model of the latent constructs of paternal distress, paternal drug addiction and HIV/AIDS, paternal teaching of coping skills, ecological factors, adolescent substance use, and adolescent distress (N=505).
 Note: SRMR = 0.06; GFI = 0.93; CFI = 0.93
 β = Standardized structural coefficients.
 Structural coefficients were significant ($p < .05$).

Table 1

Sample Demographics (N=505)

	Fathers (Self-Report):
X Age	41.9 years (SD = 6.4)
Median educational level	Completed high school or GED (equivalency degree)
Median household income	US\$11,000 [/]
Employment status (at Time 1):	
Employed	34%
Full-time	21%
Part-time	13%
Unemployed (looking for work, retired, in treatment full-time)	66%
Marital status:	
Married	30%
Co-habiting	24%
Separated, divorced or widowed	25%
Single	21%
Resides with participant child	56.8%
Drug Use:	
Lifetime injection drug use	76.4%
Lifetime non-injection drug use (e.g., smoking crack)	23.6%
Lifetime heroin use	73.3%
Lifetime cocaine use	85.5%
HIV Status:	
HIV-positive:	42%
HIV-negative:	56%
Unknown:	2%
	Adolescents (Self-Report):
X Age	16.6 years (SD = 2.7)
Gender:	
Female:	46%
Male:	54%
Median educational level	10 th grade
Ethnicity:	
African-American	50.0%
Latino	37.0%
Non-Hispanic Caucasian	10.0%
Other	3.0%
HIV Status:	
HIV-positive:	N=2
HIV-negative:	N=503

[/] Below national poverty level for households of 2 or more persons (DeNavas-Walt et al., 2005).

Table 2

Scales, Number of Items, Alphas, Samples Items, and Authors

Variable ^a	# of Items	Alpha	Sample item	Author(s)
Paternal Distresses				
Depression	5	.82	Over the last few years, how much were you bothered by feeling hopeless about the future?	Derogatis et al., 1974
Obsessiveness	4	.80	Over the last few years, how much were you bothered by worrying or stewing about things?	Uhlenhuth & Covi, 1974
Interpersonal Difficulty	5	.78	Over the last few years, how much were you bothered by difficulty feeling close to other people?	Derogatis et al., 1974
Paternal Drug Addiction and HIV Status				
Paternal HIV status	1	N/A	Has your father contracted the AIDS virus?	Original
Addicted to Drugs (Ever)?	1	N/A	Has your father ever been addicted to drugs?	Original
Shared Needles (Ever)?	1	N/A	Has your father ever shared needles?	Brook et al., 2000
Paternal Teaching of Coping Skills				
General Coping	3	.81	Your father tells you that you are able to do things better than other people.	Brook et al., 1999a; Brook et al., 1999b
Self-help Techniques	4	.84	Your father tells you to try to fix the problem by thinking of things that might be helpful.	Brook et al., 1999a; Brook et al., 1999b
Teaching about AIDS	6	.83	Your father gives you information about AIDS.	Brook et al., 1999a; Brook et al., 1999b
Youth's Identification with the Father	10	.91	How much do you want to be like your father in your role as a parent?	Brook et al., 1990
Ecological Factors				
Neighborhood Resources (Services and Community Cohesion)	7	.80	How do you rate fire and police protection in your neighborhood?	McCord, 1979
Neighborhood Gang Activity	4	.83	Do the gangs in your neighborhood sell drugs?	McCord, 1979
Neighborhood Drug Trafficking	1	N/A	Would you rate the level of drug trafficking in your neighborhood as light, moderate, or heavy?	Original
Discrimination experience	6	.81	How often have you experienced discrimination with regard to your family getting housing?	Brook et al., 1997
Adolescent Substance Use				
Lifetime daily cigarette smoking	1	N/A	On average, how many cigarettes have you ever smoked?	Brook et al., 1990
Lifetime frequency of beer or wine and hard liquor consumption	2	N/A	How often have you ever drunk beer or wine?	Brook et al., 1990
Lifetime frequency of marijuana and other illicit drug use	2	N/A	During the past year, how often did you use marijuana or hashish?	Brook et al., 1990

Variable [/]	# of Items	Alpha	Sample Item	Author(s)
Adolescent Distress (Dependent Variable)				
Depression	5	.75	How often were bothered by feeling blue?	Derogatis et al., 1974
Obsessiveness	4	.77	How often were you bothered by difficulty making decisions?	Uhlenhuth & Covi, 1974
Interpersonal Difficulty	6	.78	How often were you bothered by feeling misunderstood?	Derogatis et al., 1974

[/] All scales based on adolescent report except Paternal Distress.

Table 3

Standardized total effects of the latent constructs of paternal distress, paternal drug addiction and HIV/AIDS, paternal teaching of coping skills, ecological factors, and adolescent substance use on adolescent distress (N=505).

Latent Variables	Total Effects
Paternal Distress	0.22 (2.88) ***
Paternal Drug Addiction and HIV/AIDS	0.26 (4.02) ***
Paternal Teaching of Coping Skills	-0.13 (-3.72) ***
Ecological Factors	0.30 (4.64) ***
Adolescent Substance Use	0.66 (5.92) ***

p<0.001