Externalizing Behaviors among Children of HIV Seropositive Former and Current Drug Users: Parent Support Network Factors as Social Ecological Risks

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ABSTRACT *Children affected by their parents' dual drug use and HIV/AIDS face considerable challenges to their psychosocial development, including parent dysfunction and foster care placement. While HIV/AIDS may increase parents' mobilization of social support, their drug use may restrict who is available to help them, with potential implications to the adjustment of their children with whom they remain in contact. This study sought to identify dually affected children's living situations, and parent and parent's support network factors as correlates of children's externalizing problem behaviors. An urban community sample of 462 HIV seropositive, current or former drug-using parents were queried about their children aged 5–15 years old. One hundred ninety-four children were reported by 119 parents. The outcome was children's externalizing behaviors of ever having been suspended or expelled from school, criminal-justice system involvement, or illicit drug or heavy alcohol use. Independent variables included kin and drug users in parent's support network. Generalized estimating equations were used to adjust for the potential correlation of children of the same parent. Among parents, 63% were mothers, 57% current opioid or cocaine users, 85% were African American, 35% had AIDS or CD <200, and 53% had high depressive symptoms (CES-D ≥ 16); median age was 38. Among children, median age was 12; 23% lived with the nominating parent, 65% with other family, and 11% in non-kin foster care. While only 34% of parents reported child custody, 43% reported daily contact with their child, and 90% reported high emotional closeness. Parents reported externalizing behaviors among 32% of the children. Logistic regression indicated that externalizing behavior was positively associated with parent's physical limitations and proportion of illicit drug users in parent's support network. A significant interaction was found indicating that the effect of parent's support network-level drug use was greater for children living with versus not living with the parent. The model adjusted for parent's current drug use and depressive symptoms, which were not significant. Results indicate that while only a minority of these dually affected children lived with the parent, the parents' physical limitations and embeddedness in drug using support networks, particularly if living with their children, was associated with the children's maladjustment. It is plausible that these factors interfere with parenting, expose the children to conflict or adverse social influences, or obligate children to assume caregiving for their parent. While dually affected children's contact with their parents may have*

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important benefits, results suggest it presents ongoing needs for intervention with the children, their parents, and caregivers.

KEYWORDS *Parental illicit drug use, HIV/AIDS affected children, Child psychosocial functioning, Externalizing behaviors, Social support networks, Informal caregiving, Foster care.*

INTRODUCTION

Most HIV seropositive parents in the USA are current or former illicit drug users, racial minorities, and live in poverty in inner cities, all of which may contribute to their children's adjustment problems.¹⁻³ In addition, it is well established that parent factors, such as drug use and depression, adversely affect children's psychosocial development and problem behaviors.^{2,4} Far less is understood about how parents' social environments affect vulnerable children's outcomes.^{5,6} For drug-using parents living with HIV/AIDS, their physical and mental health challenges, inordinate care needs, and stigma of drug use and HIV/AIDS may restrict their availability of social support. This may have additional implications for their children's adjustment.

The majority of prior studies of children of drug users has sampled parents in drug treatment who may differ significantly from community samples.^{7,8} Few studies of HIV seropositive parents have examined their drug use, and many studies exclude fathers, although research suggests they may influence vulnerable children's outcomes.⁹ Furthermore, while considerable attention has been paid to family factors associated with child outcomes, social network factors may be a more appropriate approach to examining social environments of highly vulnerable children with less stable family structures. The present study examined the living situation and parents' social support network factors that are conceptualized as either protective or risk factors for behavior problems among children affected by parental opioid drug use and HIV/AIDS. Findings can offer an important contribution to the scant literature on evidence-based approaches to prevention intervention tailored to the social context of highly vulnerable children.^{10,11}

Affected Youths' Problem Behaviors

Children affected by parental drug use and HIV/AIDS are more likely than the general population to experience poverty, parental mental illness and drug addiction, parental conflict and neglect, disruptions in family structure, and parent loss.³⁻¹² One of the most consistent findings of prior research on children of drug-dependent parents is that compared to children of non-drug-using parents, they are more likely to engage in externalizing behaviors, i.e., defiant, disruptive, and aggressive behaviors.^{2,13} Problem behaviors, in turn, appear to contribute to their later greater levels of academic failure, psychiatric disorders, and criminal involvement.^{10,14,15} In a community sample of injection drug-using parents in Baltimore, 32% of their children were reported to have high levels of externalizing behaviors.¹⁶ In a study assessing children of HIV seropositive injection drug-using parents, 23% were found to have disruptive behavior disorders.³

Parents' Mental Health

Injection drug users have high rates of psychopathology.^{17,18} HIV/AIDS increases drug-using parents' risk for depression. In adults living with HIV/AIDS, prevalence

rates of depressive disorders of up to 48% have been found.¹⁹ Maternal depression has profound effects on parenting practices and children's problem behaviors.⁴ Mothers' depression is associated with inconsistent discipline practices and negative mother-child interactions, which are associated with children's problem behaviors.^{13,20} Studies of children affected by parental HIV/AIDS suggest that maternal psychological well-being mediates the association between a mother's HIV seropositive status and her children's psychosocial adjustment.²¹

Parents' Physical Health Status and HIV Disclosure

Previous studies of children of chronically ill parents indicate that children are often affected more by parents' physical impairment than illness per se and that regular contact with the parent may facilitate adaptation.^{11,23} The effect of parental physical impairment on children's outcomes may be due, in part, to its association with depression. Among injection drug users, physical impairment was found to be predictive of their higher level of depressive symptoms.¹⁷ In a community sample of children of injection drug users, parents' apparent HIV infection, defined as parents' HIV-related symptoms or HIV self-disclosure to their children, but not HIV status per se, was associated with children's greater levels of psychopathology.³

Living Situation and Foster Care Experience

Studies suggest that many children of illicit drug users, particularly opiate and cocaine users, do not remain in parent custody.^{22,23} Some opioid-using parents choose to place their children with kin, and others face mandated placement of their children in kinship care or foster care. In a community sample, injection drug-using parents were more likely to live with their young children if they were HIV-seronegative or asymptomatic.¹⁶ Many children of drug-dependent mothers spend at least some time in foster care.²³ Children's placement in foster care is associated with poor parenting and with adjustment problems, including problem behaviors.^{24,25} Foster care placement may also be an indicator of deficits in parents' social support. In a prior study, child placement in foster care was greater for mothers with lower levels of social support.²³

Parents' Social Support

Research indicates the importance of parents' social support on dually affected children's psychosocial functioning.²⁶ One study suggests that among opiate-dependent mothers, social support plays an etiological role in their parenting, with implications to their children's psychosocial outcomes.⁵

Social support is one of the most consistent predictors of drug users' lower depressive symptoms, cessation of drug use, and positive parenting practices.^{5,17,27} Conversely, parents' inadequacy of social support is associated with their psychological distress and parenting difficulties.²⁸ For drug-using parents, poverty, chaotic lifestyles, conflictive and unstable ties, and potential stigma associated with drug use and HIV/AIDS may impair their ability to mobilize social support or family members' willingness or ability to care for their children.²⁹ A parent's supportive ties may be especially important to his or her children's psychosocial functioning if the child is living with the parent, and thus, has a greater level of contact with the parent, and if the parent's supportive ties are also involved in caring for their children.³⁰ As female kin are traditional caregivers of children, it is plausible that a greater level of female kin support to parents is associated with a greater level of care to their children.

Parents' Social Support Networks

Network methodology is one approach to delineating social environmental factors associated with children's outcomes. Social networks have been used to operationalize the dynamic system of an individual's kin, friends, and community ties.³¹ A network can be defined as an individual and her ties linked by specified behaviors, e.g., forms of social support, or interactions of interest, e.g., sexual activity or drug sharing.³² Network inventories elicit a person's network members and their characteristics, e.g., role relations, demographics, behaviors. A major value of a network approach to examining social support environments is that it delineates ties across a range of role relations and social milieus. Thus, a network analytic approach may be especially appropriate for examining social support among seriously ill drug-using populations who have high support needs and may have less access to traditional (family) support structures.

Social networks have been conceptualized as channels of support exchange and as major influences on members' behavior.^{33,34} Among HIV-seropositive drug-using parents with increased support needs, strained relations with kin and unstable partner ties may result in their greater reliance on support from substance users or non-kin whose support may be less consistent or effective or present adverse social influences.³⁵

Prior studies of injection drug users have found that HIV-seropositive individuals were able to mobilize social support and that support network factors were associated with their health outcomes. In a study of African American former and current injection drug users, HIV seropositives compared to HIV seronegatives had larger support networks, including more kin and females.³⁶ Other studies have found that drug users' social network characteristics are predictive of their psychological well-being and drug use cessation.^{37,38} A greater proportion of drug users in injection drug users' networks has been found to be associated with their lower likelihood of ceasing drug use,³⁸ and among those HIV seropositive, their suboptimal medical service use,³⁹ which may have implications for their illness progression and parenting.

The goal of the study was to identify dually affected children's living situation and to examine parent factors and parent's support network factors as correlates of children's externalizing problem behaviors. We hypothesized that children's externalizing behaviors would be positively associated with their parent's depressive symptoms and proportion of drug users in their support network. We also hypothesized that the effect of parents' support network-level drug use would be stronger for those children living with, compared to not living with, their nominating parent. Finally, we expected that children's externalizing behaviors would be negatively associated with their parent's level of support from female kin.

METHODS

Recruitment

Data were from the ARK (Action through Resources and Knowledge) study (2002–2005) which examined the role of social environmental factors on HIV health outcomes among a community sample of Baltimore adults living with HIV/AIDS. ARK study eligibility included HIV seropositive status, over age 18, and Baltimore residency. Participants were recruited by street outreach; advertisement at health and social service agencies, e.g., homeless shelters, drug treatment clinics, needle

exchange; and by referral of control condition participants of the INSPIRE study, upon study completion. The INSPIRE study was a secondary HIV prevention intervention (2000–2005) that used similar community and clinic recruitment strategies.⁴⁰ INSPIRE enrollment criteria included self-reported injection drug use in the year before enrollment, heterosexual activity, and willingness to participate in a small group intervention. Twenty percent of the ARK sample had participated in the INSPIRE study.

Assessment of Parents

At baseline of the ARK study, adult participants were surveyed about their children aged 5–15 years. Surveys were administered face-to-face by trained interviewers using a computer-assisted personal interviewing approach and took approximately 1 h and 15 min. All participants were financially compensated \$20 for their time. Approval was obtained from the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

The outcome measure was parent reports of their children ever exhibiting externalizing behaviors: as part of a network inventory, parents were asked to name all of their biological children aged 5–15 years and were asked the following questions about them: “Which of [your] children ever had problems in school such as truancy or behavior problems that they were suspended or expelled for?”, “Have any of [your] children ever been brought to the police station or been locked up in jail, prison, or a residential juvenile detention center?”, “Which of [your] children ever used any illicit drugs or drank alcohol heavily?” The binary outcome variable was constructed by summing the three measures, and recoded as yes (=1 or more) versus no (=none) for each child, indicating whether the child has ever or never exhibited any such problem behavior. To examine parent characteristics associated with externalizing behaviors, parents were coded as having one or more children with externalizing behaviors versus having no children with externalizing behaviors.

Independent variables included parent factors of degree of physical functioning limitations, assessed as difficulty performing various instrumental activities of daily living (IADLs; possible score range of 0–12)⁴¹ and ever having been AIDS diagnosed or having a CD4 count below 200 cells/mm³; and current drug use, defined as use of cocaine or heroin in the prior 6 months.

Parents’ depressive symptoms were measured by the CES-D,⁴² which has been extensively used in previous studies of HIV seropositives and illicit drug users^{18,43} and has shown adequate reliability and validity as a screening instrument for depression.⁴⁴ The Cronbach’s alpha was 0.92.

Children’s living situation was assessed by parent’s response to questions of where each child is currently living, e.g., with parent respondent, other family, or non-kin foster care and whether the child has ever been placed in Department of Social Services foster care. Parents were also asked whether each child is believed to know that the parent has HIV and whether the parent has custody of the child. Parent–child contact was assessed on a six-point scale of frequency of talking to or seeing their child in person or on the phone and was recoded as daily versus less than daily contact.

Network characteristics were assessed using a network inventory that elicited names of perceived support network members, that is, those on whom the parent could rely for various forms of basic support in the prior 6 months. The questions elicited names of people the parent could rely on for emotional support, financial or material support, informational support (i.e., health advice), instrumental assistance

(e.g., help with household tasks or errands), and socializing (i.e., hang out or have fun with).^{45,46} Prior studies suggest predictive and concurrent validity of the name generating questions of the support network inventory among drug using samples.⁴⁷ The Cronbach's alpha of the five items was 0.85. Because such support network inventories tend to elicit names of relatively few individuals who are important to the respondent in multiple ways, it has been proposed that the network represents main supportive ties or core network members.⁴⁸

Characteristics of individuals nominated in the support network were then elicited, including gender, ever having used heroin or cocaine, role relation, and closeness. For network measures, kin was defined as immediate or extended family and excluded spouses or partners. Closeness of each network tie to the parent was rated on a ten-point scale, with 10 being closest. Average closeness of support network members to the parent was calculated.

Support network size was calculated as total number of individuals nominated as supportive in any of the five support modes inquired, i.e., emotional, financial, etc. Relational composition of support networks was separately calculated as the proportions of the support network that were female, kin, and had ever used heroin or cocaine. Due to its non-normal distribution, the proportion of drug users in the support network was recoded into quintiles. Network closeness was calculated as the average reported closeness of the parent to his or her support network members.

Analysis Plan

Chi-square tests and independent *t* tests were used to calculate unadjusted associations between the outcome and independent variables categorized as parent, child, parent-child, and parent support network factors. Variables chosen for inclusion in the simultaneous entry logistic regression analysis were those significant at $p < 0.10$ in the bivariate analysis and parent background factors of current drug use, depressive symptoms, and education. Parent characteristics are reported as the average per child, with parents counted for each of their reported eligible children. Generalized estimating equations were used to adjust for the potential correlation of children of the same parent. Results of the final model are reported in adjusted odds ratios (AORs) and 95% confidence intervals.

In testing for the interaction effect of proportion of drug users in the parent's support network by parent-child cohabitation, we included the interaction term in the model as well as the two component variables. This interactive effect was further examined by calculating the exponentiated simple effect of network drug use alone, for children who did not live with the nominating parent, and the exponentiated sum of the simple and interactive effects, for those who did live with the nominating parent.⁴⁹

RESULTS

Description of the Parents and Children Samples (Univariate Analysis)

Parent Factors Among the 462 adult participants enrolled at baseline, 119 were parents who reported having a total of 191 biological children 5–15 years. Table 1 reports the data on the average parent characteristics per child ($n=191$) in the sample. While drug use was not an eligibility criterion, parents all had a history of

TABLE 1 Parent and parent network factors: comparison between HIV-seropositive lifetime opioid-using parents with versus without a child (5–15 years old) with externalizing behaviors (parent reports; Baltimore, Maryland)

	Parents of children 5–15 (full sample: <i>n</i> = 191) %	Has no child with externalizing behavior (<i>n</i> = 129) %	Has a child with externalizing behavior (<i>n</i> = 62) %
Sociodemographic characteristics			
Age, median years (range)	38 (25–60)	38.5	40.3*
Gender: female	63	63	63
Race: black	85	86	83
Education, <high school	59	50	62
Income <\$500/month	42	40	44
Incarcerated, ever	83	81	87
Health factors			
Physical limitations: median (range) ^a	5 (0–12)	4.5	6.0***
AIDS defined ^b	35	37	34
Time since HIV+ test (years)	8.5	8.7	9.3
Depressive symptoms, high (CES-D ≥ 16)	53	53	57
Cocaine or heroin use, current	57	59	50
Support network characteristics, parent's			
Support network members, total number: mean	5.7	5.3	6.4**
Drug users in support network, %: mean	0.30	0.27	0.36**
Non-kin in support network, %: mean	0.27	0.24	0.34**
Female kin in network, %: mean	0.36	0.37	0.32+
Kin in support network, %: mean	0.44	0.45	0.41
Closeness to network members: mean (range)	8.9 (1–10)	8.9	8.8

p* < 0.1 by Fisher's exact test.*p* < 0.05 by Fisher's exact test.****p* < 0.01 by Fisher's exact test.^aDefined as difficulty performing various instrumental activities of daily living (IADLs).^bDefined as self-reported AIDS diagnosis or CD4 count < 200.

illicit drug, primarily heroin or cocaine, use. Parents were predominantly non-Hispanic black (85%), mothers (63%), of low income (42%), who had less than a high school education (59%), and reported current heroin or cocaine use (57%; Table 1). Over a third (35%) of parents reported ever having been diagnosed with AIDS or a CD4 count < 200. Parents reported a median of 8.5 years since their HIV diagnosis and a median of 5 (within a range of 0–12) limitations in performing instrumental activities of daily living. The vast majority of parents reported having

ever been incarcerated (83%). Over half (53%) reported high depressive symptoms (CES-D $\geq$ 16).

Child Factors Parents reported externalizing behaviors among 32% of the children. In particular, they reported that 30% of their children had ever been suspended or expelled from school, 8% had ever been in police or juvenile justice custody, and that 1% had ever used illicit drugs or heavily used alcohol. The items were highly intercorrelated.

Among children, the median age was 12, and 53% were boys (Table 2). Approximately a third (34%) of parents reported having custody of their child, 42% reported daily contact, and an additional 20% reported contact a few times per week. The vast majority of parents (90%) reported high closeness (9–10 on a ten-point scale) to their child. Parents reported that 23% of the children currently lived with them, 65% lived with other kin, and 11% lived in non-kinship foster care. Almost three fifths (59%) of the children had been in foster care at some point in their lives.

Parent Support Network Factors All of the parents reported having a support network. Average support network size was 5.7 members (SD=2.9; Table 2). On average, 61% of support network members were female (3.5, SD=2.2), 44%

TABLE 2 Child and parent–child factors: comparison between dually affected children with versus without externalizing behaviors

	Children, full sample (<i>n</i> =191) %	No externalizing behavior (<i>n</i> =129) %	Any externalizing behavior (<i>n</i> =62) %
Independent variables			
Demographics			
Age, years: median (range)	12 (5–15)	10.7	12.0 **
Sex: male	53	48	66 *
Relationship with parent			
Parent has custody of the child	34	33	37
Daily contact with parent	42	46	35
Knows nominating parent ever used drugs	26	24	29
Knows nominating parent is HIV+	40	40	40
Very close to parent	90	91	90
Living arrangements			
Lives with nominating parent	23	17	34*
Lives with family	65	68	58
Lives in non-kin foster care	11	13	8
Ever in DSS foster or kin care ^a	59	62	53

Reports from HIV-seropositive lifetime opioid-using parents, Baltimore, Maryland.
**p*<0.05 by Fisher's exact test.
***p*<0.01 by Fisher's exact test.
^aDSS refers to Department of Social Services.

(SD=1.7) were kin, and 30% (SD=0.76) had ever used heroin or cocaine. Parents' average closeness to network members was high: 8.9 out of a possible score of 10.

Bivariate Analyses In unadjusted analysis, children's older age, male sex, and parent-child cohabitation were positively associated with children's externalizing behavior (Table 2).

Parents' physical limitation was positively associated with children's externalizing behaviors; parents' older age was marginally significant (Table 1). Parents' depressive symptoms and current drug use were not significant.

Total size of parents' support network and greater proportions of drug users and of non-kin were positively associated with children's externalizing behaviors (Table 1). A lower proportion of female kin in the parent's network was marginally significantly associated with the outcome.

Multivariate Analyses The final model indicates that children's externalizing behavior was positively associated with their older age (adjusted odds ratio=1.26), male sex (AOR=4.33), and their parent's physical limitations (AOR=1.23) (Table 3). Every additional physical limitation among parents increased the odds of a child exhibiting externalizing behavior by 23%. Children who were in their parent's custody were significantly less likely to have externalizing behaviors (AOR=0.21).

Overall, the proportion of drug users in a parent's support network had an effect on children's externalizing behavior. However, the interactive effect of cohabitation and drug use in the parent's support network indicated that the effect of parent's support network drug use was greater for those children who lived with the parent as compared to those who did not live with the parent ($p<0.05$). For those children not living with the parent, each quintile increase in proportion of drug users in the support network was associated with a 39% increase in the odds of externalizing behavior (AOR=1.39, $p<0.05$). Among children co-residing with the parent, every additional quintile increase in the proportion of drug users in the parent's support network resulted in a corresponding 3.42-fold higher odds of externalizing behaviors.

Children's having been in foster care, and parents' current drug use, depressive symptoms, HIV disclosure to the child, and level of kin support were not significantly associated with children's externalizing behavior in adjusted analysis.

DISCUSSION

The study results support prior studies indicating the vulnerability of inner city children dually affected by parental drug use and HIV/AIDS. The study found that almost a third of children aged 5–15 years had externalizing behaviors. The majority of children were reported to be living with other kin and to have had foster care experience. Although only a minority of the children was living with the nominating parent, most parents reported frequent contact with the children and a high level of closeness.

The findings support the study hypotheses that children's externalizing behaviors are positively associated with characteristics of their parents' support networks and that the association is stronger for those children living with the parent. Only one characteristic of parent's support network, i.e. the proportion of drug users, was associated with children's externalizing behaviors in adjusted analysis. The impact of this network characteristic was greater for children living

with the nominating parent. Among children co-residing with the parent, for every additional quintile increase in the proportion of drug users in the parents’ support network, there was a corresponding 3.4-fold higher odds of externalizing behaviors. For those children not living with the parent, each quintile increase in proportion of drug users in parents’ support networks was associated with a 39% increase in the odds of externalizing behavior. Analyses were adjusted for parents’ current drug use.

Drug Use in Parents’ Support Networks

The finding of the role of parents’ support network-level drug use on child adaptation may be explained in several ways. Parents with a greater proportion of drug users in their support networks may live more chaotic lives, for example, if they or those they rely on are involved in the drug trade or are less stable financially, psychologically, or in terms of housing. As support network members are often considered core network members, it is also plausible that their children have less access to positive role models. Additionally, parents’ support networks may overlap with their children’s, including their children’s kin caregivers. Unstable or inconsistent support network members may mitigate the protective effect of social support on children’s externalizing behaviors.⁵⁰ Among vulnerable inner city youths, support from adults other than their drug-using parent has been found to be protective of their psychosocial outcomes.⁸ But parents’ reliance on support from drug users may impede children’s access to adults who may be more stable or higher functioning.

The study failed to find evidence to support the hypotheses that children’s externalizing behaviors would be associated with parents’ depressive symptoms or level of support from female kin. The lack of a finding regarding effects of current depressive symptoms may be due to the retrospective nature of the outcome variable and to the observation that depression levels increase with severe HIV illness.⁴³ The role of female kin in children’s outcomes may be overshadowed by the complexity of social, economic, and structural influences on this highly disadvantaged popula-

TABLE 3 Adjusted odds of parent, child, and parent network factors associated with externalizing behaviors among children (aged 5–15 years) of HIV-positive lifetime opioid-using parents (Baltimore, Maryland; N=191)^a

Independent variables	Adjusted odds ratios	95% Confidence intervals
Child factors		
Age (years)	1.26**	1.08, 1.47
Sex: male	4.33***	1.93, 9.71
Parent factors		
Cohabitation	1.78	0.26, 12.04
Physical limitations (IADLs)	1.23**	1.08, 1.40
Custody of child	0.21*	0.07, 0.68
Parent support network factors		
Drug users in parent’s support network, proportion	1.39*	1.00, 1.93
Cohabitation × proportion of drug users in support network	2.46*	1.16, 5.40

**p*<0.05.

***p*<0.01.

****p*<0.001.

^aAdjusted for parents’ current drug use, depression (CES-D≥16) and education.

tion's adjustment. It is also possible that qualities of supportive family relationships, rather than mere existence of supportive family ties, are important to children's outcomes. Indeed, parents' drug use and parenting problems may be symptomatic of larger family system dysfunction.³⁰

Parent's Physical Limitations and Child Outcomes

Parents' physical limitations were also associated with children's externalizing behaviors. Parents' degree of physical limitations likely reflects their illness severity. In this sample, more than a third (35%) of parents reported having AIDS or a CD4 count <200. In a previous study of a similar sample, parental HIV symptoms were associated with children's externalizing behaviors.³ It is plausible that parents' physical limitations adversely affect their parenting practices, increases children's perceived stigma of their parents' HIV/AIDS or drug use, or serves to remind children of the possible imminent loss of their parent.

Parent's HIV illness progression likely leads to processes of social support mobilization and informal caregiving negotiation, which are often highly stressful processes for individuals in need of care and their supportive relationships.^{51,52} Parents' negotiating support and care may also be stressful for their children as well. Parents' drug-using supportive ties may exacerbate conflict in their kin networks, as may ambiguities between parents and kin caregivers regarding child custody, legal rights, and financial disbursement.^{24,30} It is also possible that physical limitation and a dearth of adult support compels parents' reliance on their children for support and care or necessitates their children's self-reliance.⁵³ Research suggests that early assumption of adult roles, including caregiving, is common among low-income inner city African American youths^{54,55} and is associated with externalizing behaviors.^{53,56}

Further research is needed to examine the extent to which parents' support network characteristics impact their children's support to their parent, their adult role transitions, and its impact on their psychosocial outcomes. Research is also needed to identify potential resiliency factors, such as the possible protective role of other caregivers, kin, teachers, service providers, or other adults in the children's lives.

Study Limitations and Strengths

The reliance on parent reports of externalizing behaviors present potential threats to the validity of study findings. While there is no consensus in the literature, some evidence suggests that parent reports of externalizing, as compared to internalizing, behaviors show higher agreement with child reports, and therefore, has been suggested to be an important source of information on children's externalizing behaviors.^{57,58} Although we assessed a limited number of externalizing behaviors, the behaviors surveyed are those included in the Diagnostic and Statistical Manual of Mental Disorders, volume IV (DSM-IV) conduct disorder criteria.⁵⁹ Our study finding of 32% of 5- to 15-year-olds having externalizing behaviors compares to a 36% lifetime prevalence of conduct disorder found among 19-year-olds in a Baltimore inner city community sample⁶⁰ and a 10% lifetime prevalence found in a national sample.¹²

A significant proportion of the children did not live with their parents, which may affect their awareness of their children's problem behaviors. Also, some behaviors, e.g., substance use, may be hidden from parents, thus, affecting the validity of parent reports of these behaviors. Additionally, it is possible that this sample of substance-using parents under-reported their children's substance use due to concerns that such disclosure may potentially threaten their ability to retain their children.³⁰

As the sample of parents is out-of-treatment, they may be more representative of the population of HIV seropositive drug users as compared to clinic or treatment samples, the focus of the vast majority of published studies of children of opiate or cocaine users. Research suggests that drug treatment samples differ in important ways from community samples, such as in severity of parent comorbidities.⁷

It is not known how the present study findings generalize to dually affected children living elsewhere. Baltimore has one of the highest rates of opiate and cocaine use in the country, and the vast majority of AIDS cases occur among African Americans (90%) and injection drug users or their partners (75%).⁶¹ Also, Baltimore ranks among the worst five US cities in indicators of child well-being.⁶²

CONCLUSIONS

The study demonstrates the value of social network analysis in examining social environmental influences on children's problem behavior. Moreover, the study contributes to theoretical understandings of social ecological pathways to problem behaviors among children in multi-problem families and identifies potential avenues for preventive intervention.

While children's contact with their HIV-seropositive drug-using parents may have important benefits, the study results suggest that it presents ongoing needs for intervention with the parents, their school-age children, and caregivers. Intervention approaches, consistent with the present study findings, may include social support intervention to promote HIV-seropositive parents' mobilization of social support from non-drug-abusing individuals; improving access to drug abuse treatment, or drug abuse relapse prevention, not only for HIV seropositive parents but also their main supportive ties; and specialized support services, including supportive housing, designed for HIV-seropositive parents of school-age children. The study findings suggest that such programs are particularly needed for addressing the problem behaviors of boys living with physically impaired HIV-seropositive parents who are highly reliant on support from drug-using individuals. Further research is needed to assess the social networks of dually affected children, including their support and risk networks, and the possible overlap with their parents' networks. Such research may help elucidate pathways through which children's and parents' network factors are linked to children's potential resiliencies as well as maladaptation.

ACKNOWLEDGMENTS

This study was supported by the National Institute of Drug Abuse grant R01 DA13142-01A1.

Conflicts of Interest None

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