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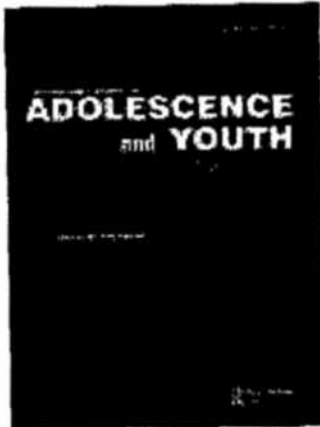
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Self-competence among early and middle adolescents affected by maternal HIV/AIDS

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Adolescent children of mothers with HIV face a host of stressors that place them at increased risk for poor outcomes. Using covariance structure analysis, this study examines adolescent risk outcomes and their relationships to maternal health, as well as the potentially protective factors of family environment and self-competence. The final model indicated that poor maternal health was negatively related to a protective family environment, which in turn was negatively related to adolescent risk outcomes. A protective family environment was also positively related to adolescent self-competence, which was negatively related to adolescent risk outcomes. Implications of the study are discussed, including how these findings can influence interventions aimed at reducing the risk for poor outcomes among adolescent youth with HIV-infected mothers.

Keywords: maternal HIV; adolescent risk outcomes; family environment; self-competence

Introduction

Early and middle adolescence is a transitional, developmental period of rapid physical, psychological, socio-cultural, and cognitive changes. During this period, teenagers are in the process of establishing a sense of who they are in terms of their self-concept, self-identity, and autonomy (DiClemente, Hansen, & Ponton, 1996; Erikson, 1968; Park, 2003). The American Academy of Child and Adolescent Psychology has defined behaviours associated with early (12–14 years) and middle (15–16 years) adolescence, including development of ideals and selection of role-models. This development may be strongly influenced by maternal HIV status.

Early adolescence also is the developmental period when behaviours that may be problematic in adulthood first emerge, and theoretical models would suggest that being affected by AIDS could increase such behaviours. Chronic illness of a mother is a uniquely stressful life event, and early adolescents whose mothers have AIDS are likely to have been experiencing stress for many years (Garnier & Weisner, 1994). Stressful life events are often associated with higher rates of mental health symptoms and negative outcomes (Coyne & Downey, 1991; Dohrenwend & Dohrenwend, 1981). Moreover, early adolescence is a time of initiation of various risk-taking behaviours. Although overall rates of adolescent risk-taking such as alcohol use and having unprotected sex have decreased since the early 1990s,

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many high school students continue to engage in these behaviours, placing them at risk for substantial morbidity and social problems as a result of unintended pregnancies and sexually transmitted diseases, including HIV infection (Eaton et al., 2008). Risk behaviours often cluster (Dryfoos, 1990, 1991; Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995). For example, in some studies, initiation of sexual activity has been found to precede onset of drug-taking for all substances among adolescents (Fisher, Wilson, & Queen, 1995).

A number of factors may be protective for children at risk for poor outcomes due to maternal HIV/AIDS, and to other experiences associated with maternal HIV/AIDS (e.g. racism, classism, neighbourhood violence, and other poor environmental conditions; Brackis-Cott, Mellins, Dolezal, & Spiegel, 2007). One such protective factor is self-competence. Self-competence refers to an image of oneself as a capable or competent person (Schiefelbein, Susman, & Dorn, 2005). Two important components of self-competence are: self-esteem, which is an assessment of one's own worth, or self-valuing; and mastery, the extent to which one has self-efficacy regarding control of one's life (for example, Hobfoll & Walfisch, 1984; Park, 2003). Building a positive sense of self-competence is an important developmental step during early and middle adolescence (Mitchell, Murdock, & Berz, 2004), and children's views of their competencies can affect their motivation levels and how they respond to challenging situations.

Higher perceived academic competence has been found to be associated with less substance use among both female and male middle school students (Lifrak, McKay, Rostain, Alterman, & O'Brien, 1997). Similarly, Griffin, Epstein, Botvin, and Spoth (2004) found that perceived social competence had a direct protective association with substance use, in that rural youth who were more socially confident and had better communication skills reported less smoking and drinking. Other studies have found that adolescents with high perceived popularity are more likely to smoke cigarettes, drink alcohol, and smoke marijuana (for example, Diego, Field, & Sanders, 2003). Finally, the family environment has been singled out as a central source of children's perceived self-competence (for example, Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Whitbeck et al., 1991). For example, attachment to parents has been significantly and positively correlated with measures of self-perceived competence among adolescents (Papini & Roggman, 1992), and attachment to parents was also negatively related to adolescent depression and anxiety.

The current study sought to examine the risk behaviours of adolescents affected by maternal HIV. Specifically, we examined adolescent risk outcomes and their relationship to maternal health and to protective factors.

Methods

Participants

The Parents and Adolescents Coping Together II study (PACT II) is a continuation of a longitudinal assessment study of 135 mothers with HIV/AIDS and their well children aged 6–11 conducted from 1997 to 2002 (Parents and Children Coping Together [PACT]). The PACT II study continued to follow 81 of the original families in the PACT study, plus an additional 37 new families, for a total of 118 families as the children transitioned to early and middle adolescence. Previous attrition analysis conducted on this sample indicated no significant differences in demographic, health and family variables of original study participants who were lost to follow-up during PACT as compared with those who continued in the PACT II study (Murphy, Greenwell, Nouttapa, Brecht, & Schuster, 2006). Inclusion criteria were: confirmation of mother's AIDS diagnosis or HIV-symptomatic status, having a well child aged 10–17 years at baseline, and English or Spanish speaking. Participants

were recruited from clinical primary care sites and AIDS service organisations in Los Angeles County. Although assessments were conducted at multiple time points, only the baseline assessment was used in this analysis. Medical chart abstraction was conducted to verify eligibility, confirm diagnosis, and obtain the CD4 count and viral load. If a mother had more than one eligible well child in the targeted age range, the child with the most recent birthday was selected for participation.

Fifty-two per cent of the adolescents in the study were male, and the mean age at baseline was 13.0 years (standard deviation = 1.8; range = 10–17). The mean age for mothers at baseline was 39.2 years (standard deviation = 5.9; range = 28–57). The mothers' race/ethnicity was: 60% Latina, 28% African American, 5% White (non-Latina), 4% multiracial, 2% Asian American, and 1% American Indian. One-half of the mothers (50%) had not completed high school; 21% had completed high school or received their general education diploma (GED); and 29% had some education beyond high school. About three-quarters (77%) had not worked in the last month; 77% were not currently married. Based on medical chart abstractions, viral load (RNA copies per millilitre) at baseline was: 57% 400 or less; 22% 401–10,000; 12% 10,001–50,000; and 9% over 50,000. Regarding CD4 count, which was also abstracted, 40% had counts of 500 or above; 38% of 499–200; and 22% of below 200. (A lower viral load and higher CD4 count indicate better health.)

Procedures

Study procedures were approved by the University of California, Los Angeles Institutional Review Board. Clinic staff at recruitment sites reviewed patient files, identified eligible families, and obtained verbal consent for University of California, Los Angeles interviewers to contact potential participants. In addition, flyers and brochures for the project were available, and patients could contact study staff directly. Mothers who agreed to participate signed the Institutional Review Board-approved informed consent form and adolescents signed the assent form; adolescents aged 18 and over signed a consent form. Trained bilingual interviewers conducted face-to-face interviews in the family's home. Interviews of mothers and adolescents were conducted simultaneously in separate rooms using a computer-assisted interviewing program (CAPI) on laptop computers. Mothers were paid \$35 for their participation, and adolescents were paid \$25 for their participation. Study participants and procedures are described in further detail in Murphy, Austin, and Greenwell (2006).

Measures

Maternal health

Physical and mental health status. The Medical Outcome Study Short Form 36 (Ware & Sherbourne, 1992) was administered to the mothers. The four-item vitality subscale used in this analysis assessed respondents' energy level and fatigue (e.g. 'how much of the time in the past four weeks did you feel worn out?'). The five-item mental health subscale was also used in this analysis (e.g. 'how much of the time in the past four weeks have you felt downhearted and blue?'). Alpha coefficients were 0.79 for the vitality subscale, and 0.75 for the mental health subscale; higher scores indicate better health.

Maternal physical health was also assessed using the mothers' report of the number of HIV illness symptoms she was experiencing in the past three months (e.g. unexpected weight loss, skin sores, shortness of breath), and viral load abstracted from medical records. Medical records with viral load information closest to the baseline interview date were selected.

Family environment

Family functioning. Two subscales from the Family Functioning Scale (Bloom & Naar, 1994) were used: Family Cohesion and Democratic Family Style. Each scale consists of five items for which the mothers rate the degree to which specific family characteristics were like her family on a four-point scale, with higher scores indicating a more cohesive or democratic family style. Examples of items on the cohesion and democratic family style scales are 'people in my family really help and support one another,' and 'people in my family make the rules together,' respectively. In this sample, Cronbach's alpha values were 0.73 for Cohesion and 0.64 for Democratic Family Style (see Schmitt [1996] for viability of alpha values under 0.70).

Family routines. A subset of eight questions from The Family Routines Questionnaire was administered to the mothers (e.g. 'In our family, children go to bed at the same time each night'; 'In our family, the whole family eats dinner together'). It has a test-retest reliability of 0.79 (Jensen, James, Boyce, & Hartnett, 1983), and Cronbach's alpha for the sample was 0.81. Higher scores equal more frequent involvement in each family routine.

Parent attachment. The Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987) was administered to adolescents. The Trust subscale (e.g. 'I trust my mother'; 'My mother respects my feelings'), and Communication subscale (e.g. 'I tell my mother about my problems and troubles') were used in this analysis. Cronbach's alpha values in this sample were 0.85 for the Trust subscale, and 0.79 for Communication.

Adolescent self-competence

Adolescent autonomy. Autonomy was measured using the Management subscale from the Autonomous Functioning Checklist (Sigafos, Feinstein, Damond, & Reiss, 1988). It is a parent-completed checklist designed to measure behavioural autonomous functioning in adolescents. The Management scale contains 20 items that measure the extent to which the adolescent independently handles his or her interactions with the environment (e.g. uses postal, banking, library services; meets academic obligations and commitments; maintains adequate grooming and self-care). The Management Autonomy subscale alpha was 0.81.

Perceived efficacy of coping. The General Coping Efficacy scale (Sandler, Tein, & West, 1994) was administered to adolescents to assess the perceived efficacy of the coping strategies they used during the past month. Two individual items were used for the current analysis: how well they felt they handled their problems compared with other kids; and how well they thought they would cope in the future. These items have been shown to be associated with resiliency among children affected by maternal HIV/AIDS, with higher perceived efficacy associated with children classified as resilient (Murphy & Marelich, 2008).

Adolescent self-concept. The Piers-Harris Children's Self-Concept Scale total score was utilised for the current study. The Piers-Harris scale is a widely employed self-concept measure designed for use with adolescents and preadolescents, and addresses self-concept related to intelligence, happiness, popularity and physical appearance (Piers, 1993). The scale consists of items such as 'I am good in my school work,' and 'I am easy to get along with.' Cronbach's alpha for this sample was 0.89 for the total score.

Adolescent risk outcomes

School connectedness. Three measures of school connectedness from Jessor's Health Behavior Questionnaire (Jessor, Donovan, & Costa, 1991) were administered to the adolescents. First, adolescents were asked about the kind of grades they usually get in school, with response options ranging from mostly 'As' to mostly 'Ds' and 'Fs' (single item). Second, the nine-item Positive Orientation to School scale assessed attitudes towards school and importance of academic achievement (e.g. 'How important is it to you to get at least a B average this year?'). Items also explored how the adolescent feels about going to school, about her/his teachers, and about what she/he got out of school. Cronbach's alpha for this sample was 0.76. Lastly, the Expectations for Success scale was administered, which includes 10 items assessing expectations for academic achievement and perceived life chances (e.g. the youth's perceptions of the chances she/he will graduate from high school, go to college, and have a job she/he enjoys). Cronbach's alpha for this sample was 0.90.

Adolescent conduct disorder. Twenty-four conduct disorder items from the National Institute of Child Health and Human Development (NICHD) Adolescent Trials Network survey of high-risk youth were administered to adolescents to determine involvement in delinquent acts; items are based on the Diagnostic and Statistical Manual of Mental Disorders (DSM) conduct disorder classification. Items included 'Have you ever shoplifted?' and 'Have you ever run away from home overnight?' The alpha coefficient for this sample was 0.87.

Adolescent substance use. Items used in the NICHD Adolescent Trial Network's survey of high-risk youth were used to assess alcohol and drug use among adolescents. For the current study, frequency of heavy drinking (five or more drinks per day) and marijuana use in the past three months were examined (both were dichotomised 'No/Yes' for the current analysis).

Adolescent sexual behaviour. Respondents were asked whether they ever had sexual intercourse – this dichotomised response was used in the current analysis.

Analysis

Structural equation modelling (also known as covariance structural analysis or structural regression modelling) was used to assess the associations across variables using the EQS program (Bentler, 2006) and applying full information maximum likelihood. The design was cross-sectional, with variables taken at baseline assessment. Indirect associations were also investigated focusing on the indirect effects of the exogenous latent constructs on the endogenous outcomes using a Sobel-test extension through EQS (see Bentler, 2006). The model correlation matrix, observed means and standard deviations for indicator variables are presented in Table 1.

Results

Assumptions regarding covariance structural analysis were assessed. Multicollinearity was not evident based on bivariate correlations of variables, multicollinearity diagnostics, or tolerance defaults in the EQS program. Multivariate kurtosis was violated (assessed using the Yuan, Lambert, and Fouladi coefficient; Bentler, 2006), and thus robust test statistics and standard errors were utilised.

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Table 1. Model correlation matrix among measured variables, observed means and standard deviations.

Measured variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	
(1) Viral Load	-																				
(2) Illness Status	0.15	-																			
(3) Vitality	0.19	0.38	-																		
(4) Mental Health	0.22	0.45	0.56	-																	
(5) Cohesion	-0.03	-0.07	-0.09	-0.10	-																
(6) Democratic Family Style	-0.03	-0.07	-0.08	-0.10	0.10	-															
(7) Family Routines	-0.04	-0.09	-0.11	-0.13	0.14	0.13	-														
(8) Attachment (Trust)	-0.09	-0.19	-0.24	-0.28	0.30	0.28	0.37	-													
(9) Attachment (Comm.)	-0.09	-0.18	-0.23	-0.27	0.29	0.27	0.36	0.79	-												
(10) Autonomy (Mgt.)	-0.01	-0.05	-0.04	-0.04	0.04	0.03	0.05	0.10	0.10	-											
(11) Coping Compared to Others	-0.03	-0.05	-0.07	-0.08	0.07	0.06	0.08	0.18	0.18	0.21	-										
(12) Future Coping	-0.03	-0.06	-0.08	-0.09	0.08	0.07	0.10	0.21	0.20	0.24	0.43	-									
(13) Self-Concept	-0.03	-0.06	-0.07	-0.09	0.07	0.07	0.09	0.20	0.20	0.23	0.42	0.47	-								
(14) Grades	0.04	0.09	0.11	0.13	-0.11	-0.10	-0.13	-0.29	-0.28	-0.10	-0.18	-0.20	-0.19	-							
(15) Orientation Toward School	0.06	0.13	0.17	0.20	-0.17	-0.15	-0.21	-0.45	-0.44	-0.15	-0.27	-0.30	-0.29	0.32	-						
(16) Expectations for School Success	0.06	0.13	0.16	0.18	-0.15	-0.14	-0.19	-0.42	-0.41	-0.14	-0.25	-0.28	-0.27	0.30	0.46	-					
(17) Conduct Disorders	0.05	0.10	0.13	0.15	-0.13	-0.12	-0.16	-0.34	-0.34	-0.11	-0.21	-0.23	-0.23	0.24	0.37	0.35	-				
(18) Marijuana Use (Past 3 Months)	0.04	0.08	0.11	0.12	-0.10	-0.10	-0.13	-0.28	-0.28	-0.10	-0.17	-0.19	-0.19	0.20	0.31	0.29	0.24	-			
(19) 5 + Alcohol Drinks (Past 3 Months)	0.03	0.06	0.08	0.09	-0.07	-0.07	-0.09	-0.20	-0.20	-0.07	-0.12	-0.14	-0.13	0.14	0.22	0.21	0.17	0.14	-		
(20) Sexual Intercourse Mean (observed)	0.02	0.04	0.05	0.06	-0.05	-0.05	-0.06	-0.13	-0.13	-0.04	-0.08	-0.09	-0.09	0.09	0.15	0.14	0.11	0.09	0.07	-	
Standard deviation	3.83	2.78	43.52	30.24	16.04	14.31	23.78	41.59	34.11	31.97	3.15	3.35	41.90	4.72	6.19	8.92	2.94	0.08	0.06	0.08	
N	1.15	2.34	23.36	19.41	2.74	2.88	5.55	7.18	7.31	11.79	0.80	0.68	8.52	2.63	8.52	3.38	3.80	0.27	0.23	0.28	
	111	118	118	118	118	118	118	116	116	118	118	118	118	118	117	118	118	118	118	118	

Figure 1 contains the proposed model. Start values for path parameters were set at the default 1.0, while error variances were set at five and allowed to vary. One indicator path was set to 1.0 for identification purposes for each latent construct (see Figure 1 for paths). No error terms were allowed to correlate. Disturbance terms for the endogenous latent constructs were allowed to vary and provided start values of five. Robust model fit indices were requested, including the Yuan–Bentler Scaled χ^2 , two incremental fit indices (CFI [comparative fit index], IFI [incremental fit index]), and an absolute fit index (RMSEA [root mean square error of approximation]).

A test of the initial model showed a Yuan–Bentler Scaled χ^2 of 316.87 (degrees of freedom = 164) with poor fit (CFI = 0.71; IFI = 0.72; NNFI [non-normed fit index] = 0.66; RMSEA = 0.088 [90% confidence interval = 0.072–0.102]). To improve fit a number of model modifications were implemented. First, non-significant latent paths were removed. Second, to capture variance unaccounted for in a measured variable by its construct, three specific variance paths were added (Bentler, 1990). One path added was from the error variance of family routines to marijuana use. Two paths to expectations for school success were added from the error terms of future coping and Piers–Harris self-concept. In addition, to strengthen the latent construct Maternal Health, a path was added from this construct to the measured variable family routines. In addition, three cross-construct error covariances were added (self-concept with grades, and autonomy with cohesion and with democratic family style). A final set of changes allowed for four within-construct error covariances (see Byrne & Baron, 1993; also see Tanaka & Huba [1984] for justification).

This final model (see Figure 2) showed an improved Yuan–Bentler Scaled χ^2 of 207.62 (degrees of freedom = 154) with enhanced fit (CFI = 0.90; IFI = 0.91; RMSEA = 0.052 [90% confidence interval = 0.030–0.070]). All latent constructs were significant at the 0.05 or better level as were paths from latent constructs to their indicator variables except sexual intercourse on the adolescent risk latent construct ($p < 0.10$).

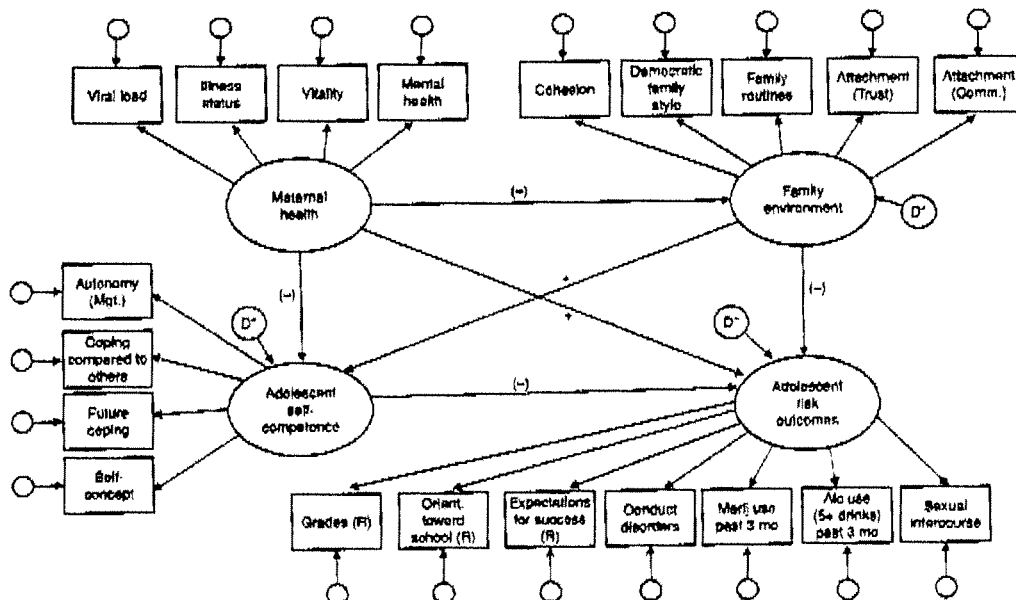


Figure 1. Proposed covariance structural model: Maternal Health, Family Environment, and Adolescent Self-Competence as predictors of adolescent risk outcomes. Note: '(R)' indicates items were reverse coded.

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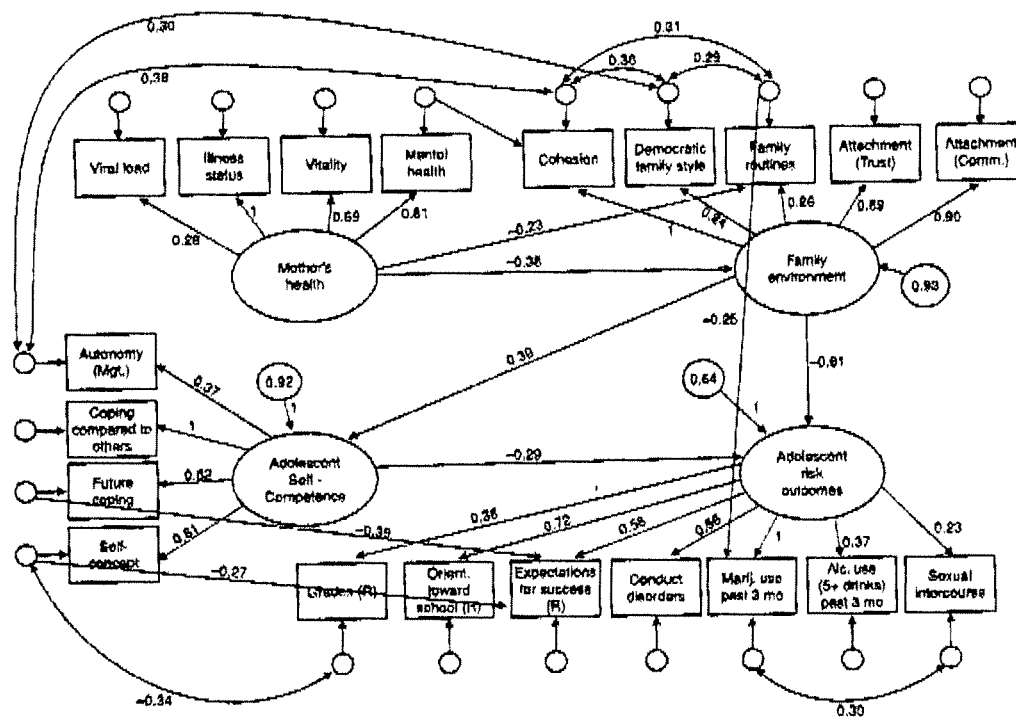


Figure 2. Final covariance structural model with standardised parameter estimates: maternal health, family environment, and adolescent self-competence as predictors of adolescent risk outcomes. Note: '(R)' indicates items were reverse coded. Parameter estimates of "1" reflect fixed values set for identification purposes. All paths are at the .05 or better significance level, except adolescent risk outcomes to sexual intercourse ($p < 0.10$).

Findings for this final model suggest maternal health is associated with family environment, with increases in maternal health leading to more positive family environments. In turn, a positive family environment is associated directly with both enhanced adolescent's self-competence, and lower adolescent risk outcomes. Positive family environments are associated with greater adolescent self-competence, and with decreased risk outcomes for adolescents. Adolescent self-competence was found to be directly associated with risk outcomes; increased self-competence was associated with less risk for adolescents.

Indirect associations of the latent constructs on the endogenous outcomes were also assessed using a Sobel-test extension (Bentler, 2006). The latent construct of maternal health had an indirect marginal association with adolescent self-competence (standardised indirect effect [SIE] = -0.15 , $p < 0.07$), and with adolescent risk outcomes (SIE = 0.27 , $p < 0.08$). This suggests that as maternal health declines, adolescent self-competence also declines, and adolescent risk outcomes increase. Positive family environments also had a significant ($p < 0.05$) indirect association with adolescent risk outcomes (SIE = -0.11), suggesting that as family environments become more positive, adolescent risk outcomes decrease.

Discussion

The present study shows that risk outcomes in young adolescents of HIV-positive mothers are affected by maternal health, family environment, and self-competence. Given the numerous environmental, social, and psychological risk factors in this population, these youths are at particularly high risk for poor outcomes, including alcohol and substance use,

conduct disorder problems, academic problems, and risky sexual behaviour. However, family environment and self-competence may serve as protective factors against such poor outcomes. Specifically, the relationships among these four latent variables suggest that maternal health is negatively related to family environment, but is not directly related to adolescent self-competence or adolescent risk outcomes. Family environment, however, may be related to risk outcomes, as well as having an influence on risk outcomes through its relationship with self-competence. Both family environment and self-competence are also related to risk outcomes.

This study indicates that mothers' health may have a direct impact on family environment, at least among families affected by maternal HIV. There is very little empirical research examining the relationship between parental illness and parenting skills or family environment. Research does show family environment differences in families with ill mothers versus non-ill mothers. Maternal depression has been shown to negatively affect family environment and parenting, including warmth and cohesion, communication, and parenting practices such as family routines (see Riley et al. [2008] for a review). Kotchick et al. (1997) found that the mother-child relationship and parental monitoring were lower in HIV-positive mothers compared with non-HIV-positive mothers. However, there are very few studies examining the impact of illness severity on family environment. Kotchick et al. (1997) had counter-intuitive findings that HIV illness severity was not related to relationship quality, parental monitoring, or family routines. In contrast, the current study, as well as related longitudinal research using this sample (that is, Murphy, Marelich, Herbeck, & Payne, 2009), found illness severity to be negatively related to family environment and positive parenting practices such as family routines and monitoring, and that these family and parenting factors fluctuate with the mothers' physical illness level. While it seems intuitive that maternal health would directly affect family environment, there has been little research showing this association.

Our findings are consistent with literature linking family environment, self-competence, and risk outcomes. For example, in a sample of young adolescents, Papini and Roggman (1992) found that stronger parental attachment was related to higher self-competence and lower feelings of depression and anxiety. In a study of low-income Latino adolescents, Loukas and Prelow (2004) found that 'socioemotional competence' was a protective factor against both internalising and externalising problems; with regard to family environment, maintenance of family routines was protective for girls whereas the mother-child relationship was protective for boys. Lifrak et al. (1997) found that, among young adolescents, perceived scholastic competence, although not social competence, was associated with lower substance use.

Although hypothesised in the original model, the direct associations between maternal illness and self-competence, and maternal illness and risk outcomes, were not tenable. We did, however, find indirect associations between maternal illness and these measures. Several studies have noted that children of HIV-positive mothers had poorer risk outcomes compared with children of non-infected mothers or with national norms (for example, see Bauman, Camacho, Silver, Hudis, & Draimin, 2002; Forehand et al., 2002; Forsyth, Damour, Nagler, & Adnopo, 1996). Yet, in a sample of 193 HIV-positive mothers and children, Bauman et al. (2002) found that the mothers' physical health was not related to child behaviour problems, with the exception of 'activity restrictions.'

Although these findings have implications for interventions aimed at high-risk youth, it is important to note several limitations of this research. The data from this study are cross-sectional and thus causal statements about the observed relationships cannot be made. Another caveat is our study focused only on externalising behaviours for risk outcomes.

Although adolescents of HIV-positive mothers are at increased risk for both internalising and externalising symptoms (for example, Forehand et al., 2002; Forsyth et al., 1996), whether they are related to self-competence and family environment in the same way is not clear. Previous research shows a similar pattern of relationships among family and child variables and depression (see Murphy, Marelich, & Amaro, 2009b). However, it is clear that these relationships, taking into account type of outcome, are complex but important to sort out in order to develop effective and targeted interventions for at-risk youth.

The current study findings have implications for prevention and intervention programmes aimed at helping improve outcomes for children of HIV-positive mothers. The consistency of our findings with the literature on general (non-HIV) parental illness suggests that there are some universally important targets for these programmes. Efforts aimed at improving the family environment, including, for example, parent-child attachment and parenting skills, and self-competence in the child, will invariably lead to better outcomes for the child. Our findings and the literature also suggest, however, that it is important to tailor the programme to the specific challenges faced by HIV-positive mothers. For example, since these findings indicate that the mothers' health status is negatively related to a protective family environment, illness severity in mothers may be a particularly important risk indicator. Also, interventions with these mothers may need to be aimed at addressing ways that, despite their illness restrictions, they can enhance the family environment. This could include such strategies as incorporating family routines that are easy to maintain and require a minimal amount of physical activity (e.g. a special night-time sharing of the day's routine, as opposed to going out to do a physical activity).

One key finding from this study is that increased adolescent self-competence is associated with decreased risk (across a wide spectrum – from school failure, to conduct problems, to substance use, to high-risk sexual behaviour). Self-competence in early and middle adolescents is something that can be targeted through interventions focusing on self-efficacy, skills training, and accurate self-appraisal. Adolescents affected by maternal HIV could benefit from increasing self-competence through interventions targeted for families affected by maternal HIV.

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Debra A. Murphy, PhD, is a research psychologist and director of the health risk reduction projects within UCLA's Integrated Substance Abuse Programs (ISAP). She has conducted HIV/AIDS behavioral research on children, adolescents, adults, and families over the past 20 years. Dr Murphy is currently principal investigator on two projects funded by the National Institutes of Health (NIH). The first is to assess the impact of maternal HIV/AIDS on late adolescent/early adult children in what will be a 15-year longitudinal study, as she has followed these families since the children were 6 to 11 years of age.

The second is to test the preliminary efficacy of a parenting intervention for HIV-infected mothers with well children aged 6 to 14 years old. Overall, she has been the principal investigator on nine federally funded grants and three state funded grants, as well as a co-investigator on 18 federally funded projects. Prior to coming to UCLA, she was the associate director for the Center for AIDS Intervention in Wisconsin, and co-investigator on a series of federal grants focused on outcome evaluations of HIV behavioral risk-reduction interventions.

Diana L. Payne, PhD, is a project director with Dr Debra Murphy at the UCLA ISAP. She currently directs a project funded by the NIH to test the preliminary efficacy of a parenting intervention for HIV-infected mothers with well children age 6 to 14 years old. In this capacity, she managed the day-to-day implementation of the project, as well as assisting with development of the psychosocial measures and procedures. Previously, she was the project director of a small 3-year pilot study to test the preliminary efficacy of an intervention to assist HIV-infected mothers disclose their serostatus to their young (age 6-12-year-old), well children. In addition, Dr Payne is a licensed clinical psychologist.

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