

Depression and Social Support among HIV-affected Adolescents

SUNG-JAE LEE, Ph.D.,^{1,2} ROGER DETELS, Ph.D.,¹
MARY JANE ROTHERAM-BORUS, Ph.D.,² NAIHUA DUAN, Ph.D.,^{2,3}
and LYNWOOD LORD, B.A.²

ABSTRACT

Adolescents of parents infected with HIV/AIDS (HIV-affected adolescents) were recruited from August 1993 to March 1995 to examine their depression as a function of their social support. Adolescent depression and the size, frequency of contact, satisfaction, negative role model influence, and positive social support were examined. Adolescent depression was associated with higher parent depression score, parental HIV disclosure, conduct problems, and was inversely related to higher self-esteem, being male, and a positive living situation. Negative social support was significantly associated with higher adolescent depression, indicating negative role model influence may be more salient than size, frequency of contact, perception, or positive social support. The findings underscore the complex relationships between social support and mental/behavioral outcomes among HIV-affected adolescents as well as the need to examine HIV disclosure in more detail within the context of adolescent social support.

INTRODUCTION

DEPRESSION IS ONE of the most common psychiatric disorders in the United States; it is estimated that between 8% and 18% of the population will experience at least one major depressive episode over the course of their lifetime.¹ Approximately twice as many women as men are affected by depression.^{2,3} Furthermore, depression is a recurrent disorder, with over 80% of depressed patients having more than one depressive episode, and over 50% of depressed patients relapsing within 2 years of recovery.⁴⁻⁶ Depression is associated with suicide,⁷ an increased mortality risk from other

causes of death,⁸ and other negative outcomes including substance abuse.⁹ Adolescence is an important developmental period for understanding depression, as significant increases in depressive symptoms occur during adolescence.¹⁰

Depression among adolescents is associated with a twofold higher risk in females; high comorbidity with anxiety disorders; substance abuse; and suicidal behaviors. In addition, adolescent depression results in high social costs as well as impairment of school performance.¹¹

Social support is defined as the existence or availability of people who care about, value, and love us.¹² Although the link between a lack

¹Department of Epidemiology, ³Department of Biostatistics, University of California, Los Angeles, School of Public Health, Los Angeles, California.

²UCLA-Semel Institute Center for Community Health, University of California, Los Angeles, Los Angeles, California.

of social support and reduced psychological well-being is well established,¹³⁻¹⁵ empirical research on social support among adolescents has barely begun, and is characterized by the lack of a reliable, general, and convenient index of social support.¹² Existing indices of social support among adolescents treat social support as a homogeneous mass.¹⁶⁻²¹

While much more empirically derived evidence is needed to provide a basis for theoretical advances in the area of adolescent social support,²² several studies have examined the size of social support,²³ the frequency of contact of social support,²⁴ perception of social support,²² negative social support,²⁵ and positive social support.²⁶ A study by Bal and colleagues²⁷ examined the role that social support plays in well-being and coping after a stressful event in a group of nonclinical adolescents. They found that a highly perceived availability of social support is directly associated with fewer trauma-related symptoms.

Adolescents whose parents are infected with HIV/AIDS (HIV-affected adolescents) are more vulnerable to depression, compared to adolescents in the general population.²⁸ HIV-affected adolescents have elevated risks for developing emotional distress^{29,30} and are more likely to engage in high-risk behaviors.^{31,32} In addition, parents living with HIV (PLH), compared to parents with cancer, are more likely to have preexisting and long-lasting stressors that affect family relationships.^{28,33}

HIV-affected adolescents are an important group to examine, as empirical research on social support for HIV-affected adolescents is extremely limited.³⁴ Our primary objective was to examine the association between depression among HIV-affected adolescents and their social support, adjusting for potential correlates of adolescent depression. Five dimensions of social support (size, frequency of contact, perception, negative support, and positive support) were considered as potential predictors of depression. Additionally, we examined the association between parental HIV disclosure and adolescent depression. Studies have shown that although HIV disclosure serves as an acute and ongoing stressor, it also facilitates emotional support for PLH, which may lead to

more effective coping and enhanced psychological adaptation.³⁵ For example, one study of women, which included approximately 40% injection drug users (IDUs), found less depression among those who were able to disclose their HIV status. However, there is limited research examining the association between parental HIV disclosure³⁶ and their adolescent children's depression.^{37,38} Few studies discuss parental HIV disclosure in association with adolescent problem behaviors and negative family life events,^{39,40} and only one indicated that over time parental HIV disclosure was significantly associated with more adolescent problem behaviors and more negative family life events.³⁷

MATERIALS AND METHODS

Participants

This study uses baseline data collected as part of a randomized controlled intervention study.⁴¹ The New York City Division of AIDS Services (DAS) maintains a log of 95% of persons with AIDS who qualify for social welfare benefits. From August 1993 to March 1995, 619 persons were logged by DAS. The eligibility criteria for the study were: being HIV-infected; having at least one adolescent child aged 11 to 18 years; and obtaining permission of the case and the case managers to enroll in the study. Of the 619 potential participants, 155 (25%) died prior to being approached, 11 (1.8%) were ineligible because of severe illness or incarceration, and 35 (5.7%) were excluded by case managers who felt the research project could potentially harm the family. Therefore, of the 619 PLH logged, 418 (68%) were eligible; of these 418 PLH, 65 (16%) were untraceable and 46 (11%) refused participation. Thus, 73% ($n = 307/418$) of eligible PLH were recruited, reflecting 87% ($n = 307/353$) of the traceable eligible PLH. With Institutional Review Board approval, informed consent and permission to recruit adolescents were obtained from PLH and then from their adolescent children. Some PLH chose not to participate but allowed their children to participate ($n = 14$). There were six

cases in which the adolescent child aged out of the study (over 18 years) prior to the assessment; these adolescents were eliminated from the analysis. A total of 413 adolescents were recruited from 307 families (average n per family = 1.5, standard deviation [SD] = 0.7; range, 1–5).

Two-person interview teams conducted 2-hour in-home interviews with the PLH and all adolescents in the household. Similar to the participants, interviewers were predominantly African American or Latino (62%); 5 of the 15 interviewers were bilingual in Spanish and English. Interviewers were certified after being trained in ethics, confidentiality (particularly of PLH's serostatus), child abuse, crisis protocols, HIV/AIDS, and conducting in-home assessments on laptop computers. Quality assurance was maintained by audio taping all interviews and routinely monitoring approximately 10% of randomly selected tapes.

Background characteristics were collected from participants at the baseline interview, including gender, age, living situation, and socioeconomic status.

Outcome measure

Adolescent depression was assessed with the Brief Symptom Inventory (BSI)⁴² depression subscale (Cronbach α = 0.76), consisting of the adolescents' rating of the level of severity across six items reflecting symptoms of depression from 0 (not at all) to 4 (extremely).

Independent variables

Size of social support was measured by the number of people providing support (social support provider) as reported by the adolescents (range, 0–15 providers).

Frequency of contact captured the number of times per month adolescents were in contact with social support providers; this was asked by each reported support provider. By summing across support providers and dividing by the number of providers, we determined the average frequency of contact (range = 0–22 times per month).

Perception of social support captured perceived satisfaction with support, measured in

a 5-point Likert scale (5 = very satisfied to 1 = very dissatisfied). Adolescents reported their satisfaction for each support provider, which was then summed across providers and divided by the number of providers to determine the average satisfaction of social support.

Positive social support captured adolescents' report of the number of positive behaviors among support providers (e.g., helps when in trouble, provided crucial support, was supportive about parent's illness). It was assessed for each provider and averaged across the number of providers to determine the average positive social support, ranging from 0 (no positive support) to 4 (four counts of positive support).

Negative social support captured adolescents' perception of the number of negative behaviors among support providers. Negative social support reflected adolescents' perception of the number of negative behaviors among their social support providers (e.g., having unprotected sex, criminal activity). It was assessed for each provider and averaged to determine the negative social support, ranging from 0 (no negative support) to 4 (four counts of negative role model behaviors).

Potential correlates of adolescent depression

Multiple problem behaviors, reflecting adolescents' risk behaviors, were measured by counting the presence (1) or absence (0) of unprotected sexual intercourse, alcohol use, drug use, contact with the criminal justice system, trouble with peers, trouble at school, and not being enrolled in school (potential range, 0–7).

Conduct problems captured adolescents' level of delinquent behaviors (e.g., robbed someone, threatened someone in order to steal from them), calculated by summing across 18 delinquent behaviors (Cronbach α = 0.61).

Adolescent self-esteem was captured by the Rosenberg Self-Esteem Scale, a 10-item measure validated and found reliable with normative samples of adolescents of many ethnic groups and ages (Cronbach α = 0.85).⁴³

Family life stressors were measured by counting the presence (1) or absence (0) of 10 stressful events within the family, such as ar-

guments between parents or mother absent from home (Cronbach $\alpha = 0.57$).

Parent variables

Parent depression was measured by the BSI depression subscale (six items reflecting symptoms of depression).

HIV disclosure, measured by the occurrence (1) or absence (0) of HIV disclosure to each adolescent in the family.

Time to HIV disclosure was captured by a dichotomous indicator to reflect the elapsed time between disclosure and the timing of the interview (over 12 months versus 12 months or less).

Data analysis

Prior to estimating statistical models, distributional assumptions and nonlinearity of the model were assessed. Furthermore, correlational analyses were performed to determine if any factors were highly correlated with each other, in order to avoid collinearity problems. After performing the exploratory analyses, we examined the association between adolescent baseline depression and the five dimensions of social support (size, frequency of contact, per-

ception, negative support, and positive support), along with other potential correlates. Mixed effects models were used to take into account the intracluster correlation at the family level, because some families having more than one adolescent. Model diagnostics were performed for each model to assess model appropriateness. Other correlates of depression and various interaction terms, based on *a priori* knowledge and existing literature, were considered and included in the final analysis.

RESULTS

Table 1 presents the background characteristics of HIV-affected adolescents and PLH at the time of recruitment. The 413 adolescents had 307 PLH aged from 25 to 70 years (mean = 37.6 years; SD = 5.4). Over 80% of the adolescents had a PLH who was a mother. The sample was predominantly Latino (50.5%, mostly of Puerto Rican and Dominican descent) and African American (38.4%); 3.0% were white, and 8.1% reported other ethnic heritages. The distribution of PLH's gender, age, employment status, and education were similar among male and female adolescents. However, a smaller pro-

TABLE 1. BACKGROUND CHARACTERISTICS OF HIV-AFFECTED ADOLESCENTS

Characteristics	Adolescent gender		
	Female (n = 217)	Male (n = 196)	Total (n = 413)
Gender of PLH			
Mother	80.5%	81.0%	80.7%
Age of PLH in years (SD)	37.74 (5.43)	37.41 (5.36)	37.58 (5.39)
Adolescent age in years (SD)	14.71 (2.02)	14.61 (1.88)	14.66 (1.95)
Ethnicity			
Hispanic	51.6%	49.2%	50.5%
African American	36.3%	40.8%	38.4%
White	3.3%	2.6%	3.0%
Others	8.8%	7.3%	8.1%
Living situation ^a			
Satisfied with the current living situation	56.7%	66.8%	61.5%
Parents' employment			
Mother	10.9%	13.8%	12.3%
Father	39.6%	37.5%	38.6%
Parents' Education (high school or above)			
Mother	45.6%	36.2%	41.2%
Father	30.4%	31.1%	30.8%

^a $p < 0.05$, SD, standard deviation; PLH, parent living with HIV.

portion of female adolescents were satisfied with their current living situation.

Adolescent social support

Table 2 compares the social support and depression factors among male and female adolescents and PLH. A significantly higher proportion of female adolescents perceived experiencing negative social support and had a higher baseline depression score. Conversely, male adolescents reported significantly higher conduct problems. There were no gender differences in the size, frequency of contact, perception, or positive social support. In addition, we found no adolescent gender differences in baseline measures of multiple problem behavior, Rosenberg self-esteem score, or family life stressors. Furthermore, we found no adolescent gender differences in PLH's social support, PLH depression score, or PLH's average coping score. A similar proportion of PLH had disclosed their HIV status and made custody

arrangements among female and male adolescents in the study.

Adolescent depression and social support

Six different models were considered when examining the predictors of adolescent depression. Each of the following characteristics were considered the main predictors of depression, adjusting for other correlates of depression: size of social support, positive perception of support, frequency of contact of support, negative social support, positive social support, and PLH's social support. Other correlates of depression were determined based on *a priori* knowledge and existing literature. For example, in addition to HIV disclosure, we assessed the effect of time since HIV disclosure as a potential correlate of adolescent depression. In addition, interactions between social support variables and other factors were considered in various models. The associations between the variables included in the final model are shown in Figure 1.

TABLE 2. CHARACTERISTICS OF HIV-AFFECTED ADOLESCENTS AND PARENTS LIVING WITH HIV

Characteristics	Adolescent gender		
	Female (n = 217)	Male (n = 196)	Total (n = 413)
Adolescent characteristics			
Social support			
Size of social support (SD)	5.07 (3.19)	5.38 (3.31)	5.22 (3.25)
Intensity of social support (SD)	4.22 (4.82)	3.97 (4.36)	4.10 (4.60)
Perception of social support (SD)	1.03 (0.98)	0.90 (0.94)	0.97 (0.96)
Negative social support (SD) ^a	0.81 (0.52)	0.64 (0.55)	0.73 (0.54)
Positive social support (SD)	2.51 (0.94)	2.35 (0.94)	2.44 (0.94)
Depression: mean BSI-depression score (SD) ^a	0.74 (0.81)	0.44 (0.56)	0.60 (0.71)
Multiple problem behavior (SD)	2.03 (1.42)	2.16 (1.56)	2.09 (1.49)
Conduct problems (SD) ^a	1.21 (1.46)	2.08 (2.38)	1.62 (2.00)
Rosenberg Self-esteem (SD)	3.03 (0.49)	3.04 (0.43)	3.04 (0.46)
Family life stressors (SD)	1.34 (1.42)	1.35 (1.39)	1.34 (1.40)
PLH characteristics			
Social support			
Size of social support (SD)	3.80 (2.51)	3.99 (2.49)	3.89 (2.50)
Intensity of social support (SD)	4.12 (5.65)	3.92 (5.43)	4.03 (5.54)
Perception of social support (SD)	1.59 (1.43)	1.55 (1.29)	1.57 (1.37)
Negative social support (SD)	0.62 (0.49)	0.68 (0.47)	0.65 (0.48)
Positive social support (SD)	0.71 (0.46)	0.66 (0.47)	0.69 (0.46)
Depression: mean BSI-depression score (SD)	2.09 (0.95)	1.97 (0.87)	2.03 (0.91)
Multiple problem behavior (SD)	0.92 (0.95)	0.90 (0.93)	0.91 (0.94)
PLH disclosed HIV status	75.7%	68.3%	72.2%
Made Custody Plans	73.8%	79.4%	76.4%

^a*p* < 0.05, SD, standard deviation; PLH, parent living with HIV; BSI, Brief Symptom Inventory.

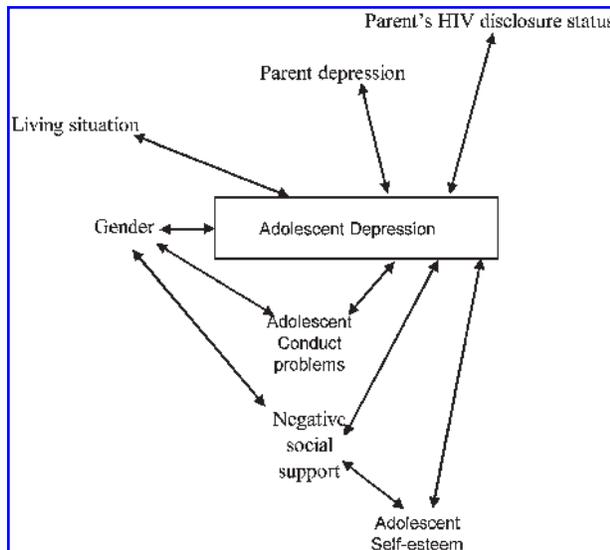


FIG. 1. Final model of adolescent depression and social support. Arrows indicate associations, not causality.

Table 3 outlines the results of the final mixed-effects model among HIV-affected adolescents, adjusting for the intracluster correlation at the family level. The final model included the following variables: negative social support, parent depression, gender, positive living situation, disclosure of HIV status, self-esteem, and conduct problems. Interactions between negative social support and other predictors of adolescent depression were considered. In addition, time since disclosure was considered in the final model. However, since time since disclosure and other interaction terms were not significantly associated with adolescent depression, they were not retained in the final model.

Negative social support reported by the adolescents was significantly associated with their

level of depression. Adolescents whose parent disclosed their HIV status had a higher depression score. In addition, parent depression score was significantly associated with adolescent depression, and adolescents with more conduct problems had a higher depression score. Other significant correlates of adolescent depression included: adolescents reporting a positive living situation had a lower depression score; females reported significantly higher levels of depression compared to males; and adolescents with a lower self-esteem score had a higher adolescent depression score (Table 3).

DISCUSSION

In contrast to existing literature,^{26,27} we found no significant associations between depression and the positive dimensions of social support. The HIV-affected adolescents in our study may be facing multiple challenges that are distinct from adolescents in the general population; therefore, the impact of social support in this highly marginalized group may be unique. One possible explanation of this finding may be that the negative social support perceived by the adolescents outweighs the potential protective effects of the positive dimensions of social support. Across the social support providers, adolescents reported, on average, less than one count of negative social support. However, over 39% of the adolescents reported at least one negative social support. The types of behaviors captured in the negative social support dimension (e.g., social support providers doing drugs, abusing alcohol, having unprotected sex, being engaged in crim-

TABLE 3. MIXED-EFFECT MODEL EXAMINING DEPRESSION AMONG HIV-AFFECTED ADOLESCENTS

Variables	Parameter estimate β	95% Confidence limits		p value
		Lower	Upper	
Negative social support	0.142	0.023	0.260	0.020
Parents' disclosure of HIV status	0.156	0.017	0.295	0.028
Parent depression	0.100	0.031	0.168	0.004
Conduct problems	0.060	0.028	0.093	0.0004
Positive living situation	-0.231	-0.364	-0.098	0.001
Gender (male as referent)	-0.285	-0.417	-0.154	< 0.0001
Self-esteem	-0.394	-0.529	-0.259	< 0.0001

inal activities) may have had a much more serious impact on adolescent depression, compared to their positive dimensions of social support (e.g., size, frequency of contact, and positive social support). That is, negative social support may overwhelm the associations between adolescent depression and other dimensions of social support. Alternatively, the magnitude of positive social support was too low to show a difference. For example, adolescents on average reported over two counts of positive social support; however, the magnitude of the impact of positive social support may be offset by negative social support.

Consistent with the existing literature,^{41,42} significant associations were observed between adolescent depression and being female, parent depression, poor living situation, parent's disclosure of HIV status, having lower self-esteem, and having more conduct problems. Past studies suggest that disclosure of HIV status might be protective against depression.^{37,44} In this study, we found no significant association between HIV disclosure and parent depression. Among adolescents, however, we observed a higher depression score if the parent had disclosed his/her HIV status. This is consistent with the study by Lee and Rotheram-Borus³⁷ indicating that over time parental HIV disclosure was significantly associated with more adolescent problem behaviors and more negative family life events.

There are inherent limitations of this study. Because the study is a cross-sectional examination of associations, we cannot make definitive conclusions about causal effects for adolescent depression. First, we could not follow the trajectories of adolescent depression since the time of the disclosure. Instead, we considered time since disclosure as a predictor in our model. Second, although we considered the interactions between HIV disclosure and social support dimensions, we did not have the social support information at the time disclosure took place. Third, we found a significant association between low self-esteem and higher adolescent depression. However, we cannot make a causal inference about the effect of low self-esteem on adolescent depression. Despite the inherent limitations of the study design, our findings underscore important examinations of

the associations between depression among HIV-affected adolescents and their social support, and the association between parent HIV disclosure and adolescent depression.

There has been limited empirical research on depression and social support among HIV-affected adolescents. This study highlights the need for future prevention programs to focus on the potential impact of social support in reducing depression among HIV-affected adolescents. Our findings underscore the importance of addressing social support in both ends of the spectrum. Given that HIV-affected adolescents are faced with various additional challenges that make them more vulnerable to depression, addressing and reducing negative social influences within their network may be as important as promoting positive social support and family relationships. In addition, our findings underscore the need to examine parental HIV disclosure in more detail within the context of the adolescent's social support. Parental HIV disclosure may be beneficial to their adolescent children when it occurs within the context of nurturing social support. Disclosing HIV status while projecting negative social support may pose more significant adjustment and coping challenges for HIV-affected adolescents. Prior to disclosing, PLH should be prepared for the possible consequences of disclosing. In particular, post-test counseling should be effectively put in place in order to help PLH deal with their own feelings of anger, fear, and/or depression prior to disclosing their status to their children, as well as counseling for children before and after parent HIV disclosure.³⁷

A longitudinal analysis of the same cohort of PLH and their adolescent children is underway in order to examine the potential causal impact of social support on adolescent depression over time. This may shed new light on the relationships between social support and adolescent depression.

ACKNOWLEDGMENTS

This paper was completed with the support of National Institute of Mental Health grants #1ROI MH49958-04 and P30MH58107. We

wish to thank the parents, caregivers, and adolescents who participated in this study, as well as those who assisted in it including Grisel Arredondo, Coleen Cantwell, Susan Cantwell, Tri Cisek, Linda Cisek, Betty Crenshaw, Barbara Draimin, Amy Elkavich, Jen Elliott, Marya Gwadz, Nionne James, Julie LeHane, Patrice Lewis, David Litke, Tanko Mohammed, Sanna Moore, Marian Reidel, Laura Rosen, Nim Tottenham, Julian Wang, Karen Wyche, the staff of Housing Works, and our interviewers and group leaders.

REFERENCES

1. Kessler RC, Blazer DG, McGonagle KA, et al. The prevalence and distribution of major depression in a national community sample: The National Comorbidity Survey. *Am J Psychiatry* 1994;151:979-986.
2. Blehar MC, Oren DA. Women's increased vulnerability to mood disorders: Integrating psychobiology and epidemiology. *Depression* 1995;3:3-12.
3. National Institute of Mental Health. *Depression: What Every Woman Should Know*. Washington, D.C.: Department of Health and Human Services, 2005.
4. Belsher G, Costello CG. Relapse after recovery from unipolar depression: A critical review. *Psychol Bull* 1988;104:84-96.
5. Keller MB, Lavori PW, Mueller TI, et al. Time to recovery, chronicity, and levels of psychopathology in major depression: A 5-year prospective follow-up of 431 subjects. *Arch Gen Psych* 1992;49:809-816.
6. Mueller TI, Keller MB, Leon AC, et al. Recovery after 5 years of unremitting major depressive disorder. *Arch Gen Psych* 1996;53:794-799.
7. Fergusson DM, Woodward LJ. Mental health, educational, and social role outcomes of adolescents with depression. *Arch General Psych* 2002;59:225-231.
8. Murphy JM, Monson RR, Oliver DC, et al. Affective disorders and mortality: A general population study. *Arch Gen Psych* 1987;44:473-480.
9. Weissman MM, Bruce ML, Leaf PJ, et al. Affective Disorders. In: Robins LN, Reigier DA, eds. *Psychiatric Disorder in America*. New York: Free Press, 1991: 53-80.
10. Peterson AC, Compas BE, Brooks-Gunn J, et al. Depression during adolescence. *Am Psychol* 1993;48: 155-168.
11. Weissman MM, Shaffer D. Introduction: Youthful depression special issue. *Depress Anxiety* 1998;7:1-2.
12. Sarason IG, Levine HM, Basham RB. Assessing social support: The Social Support Questionnaire. *J Pers Social Psychol* 1983;44:127-139.
13. Durkheim E. *Suicide*. New York: Free Press, 1951.
14. Symister P, Friend R. The influence of social support and problematic support on optimism and depression in chronic illness: A prospective study evaluating self-esteem as a mediator. *Health Psychology* 2003;22:1 23-129.
15. Barnett PA, Gotlib IH. Psychosocial functioning and depression: Distinguishing among antecedents, concomitants, and consequences. *Psychol Bull* 1988;104: 97-126.
16. Tolsdorf C. Social networks, support and coping: An exploratory study. *Fam Process* 1976;15:407-417.
17. Belle DE, Dill D, Burr R. Children's network orientations. *J Commun Psychol* 1991;19:362-372.
18. Colletta ND. Correlates of young mothers' network orientations. *J Commun Psychol* 1987;15:149-160.
19. Eckenrode S. The mobilization of social supports: Some individual constraints. *Am J Commun Psychol* 1983;11:509-520.
20. Vaux A. *Social Support: Theory, Research, and Intervention*. New York: Praeger, 1985.
21. Vaux A, Burda P, Jr, Stewart D. Orientation toward utilizing support resources. *J Commun Psychol* 1986; 14:159-170.
22. Cauce AM, Mason C, Gonzales N, Hiraga Y, Liu G. Social support during adolescence: Methodological and theoretical considerations. In: Hurrelmann K, Hamilton SF, eds. *Social Problems and Social Contexts in Adolescence: Perspectives Across Boundaries*. New York: Aldine de Gruyter, 2005:131-151.
23. Thoits PA. Stress, coping, and social support processes: Where are we? What next? *J Health Social Behav* 1995;36(Suppl 1):53-79.
24. DuBois DL, Silverthorn N. Characteristics of natural mentoring relationships and adolescent adjustment: Evidence from a national study. *J Primary Prev* 2005; 26:69-92.
25. Dalgard OS, Dowrick C, Lehtinen V, et al. Negative life events, social support and gender difference in depression: A multinational community survey with data from the ODIN study. *Soc Psychiatry Psychiatr Epidemiol* 2006;March 26:1-8.
26. Cohen S, Gottlieb B, Underwood L. Social relationships and health. In: Cohen S, Underwood L, Gottlieb B, eds. *Measuring and Intervening in Social Support*. New York: Oxford University Press, 2000, pp. 3-28.
27. Bal S, Crombez G, Van Oost P, et al. The role of social support in well-being and coping with self-reported stressful events in adolescents. *Child Abuse Negl* 2003;27:1377-1395.
28. Rotheram-Borus MJ, Weiss R, Alber S, Lester P. Adolescent adjustment before and after HIV-related parental death. *J Consult Clin Psychol* 2005;73:221-228.
29. Rotheram-Borus MJ, Stein JA. Problem behavior of adolescents whose parents are living with AIDS. *Am J Orthopsychiatry* 1999;69:228-239.
30. Lester P, Chesney M, Cooke M, et al. When the time comes to talk about HIV: Factors associated with diagnostic disclosure and emotional distress in HIV-infected children. *J Acquire Immune Defic Syndrome* 2002;31:309-317.

31. Irwin CE, Millstein SG. Risk taking behaviors during adolescence. In: Lerner RM, Peterson AC, Millstein CE, eds. *Encyclopedia of Adolescence*. New York: Garland, 1991:934–943.
32. Tinsley BJ, Lees NB, Sumartojo E. Child and adolescent HIV risk: Familial and cultural perspectives. *J Family Psychol* 2004;18:208–224.
33. Zayas LH, Romano K. Adolescents and parental death from AIDS. In: Dane BO, Levine C, eds. *AIDS and the New Orphans*. Westport, CT: Auburn House, 1994:59–76.
34. Rotheram-Borus MJ, Murphy DA, Miller S, et al. An intervention for adolescents whose parents are living with AIDS. *Clin Child Psychol Psychiatry* 1997;2: 201–219.
35. Holt R, Court P, Vedhara K, et al. The role of disclosure in coping with HIV infection. *AIDS Care* 1998; 10:49–60.
36. Clark L, Schoenbaum E, Solomon L, et al. Concealment of HIV infection and psychological distress [Abstract] (p. S26), Program and Abstracts of the HIV Infection in Women Conference: Setting a New Agenda: February 22–24, 1995, Sheraton Washington Hotel, Washington, D.C. Richmond, VA: Philadelphia Sciences Group, 1995.
37. Lee MB, Rotheram-Borus MJ. Parent's disclosure of HIV to their children. *AIDS* 2002;16:2201–2207.
38. Lester P, Chesney M, Cooke M, et al. When the time comes to talk about HIV: factors associated with diagnostic disclosure and emotional distress in HIV-infected children. *J Acquire Immune Defic Syndr* 2002; 31:309–317.
39. Vallerand AH, Hough E, Pittiglio L, Marvicsin D. The process of disclosing HIV serostatus between HIV-positive mothers and their HIV-negative children. *AIDS Patient Care STDS* 2005;19:100–109.
40. Theall KP, Mitchell C, Ludwick M, Brown B, Kissinger P. Factors associated with maternal-child separation among HIV-infected mothers. *AIDS Patient Care STDS* 2004;18:509–519.
41. Rotheram-Borus MJ, Lee MB, Gwadz M, et al. An intervention for parents with AIDS and their adolescent children. *Am J Public Health* 2001;91:1294–1302.
42. Derogatis LR. *Brief Symptom Inventory: Administration, Scoring, and Procedure Manual*. Minneapolis, MN: National Computer System, 1993.
43. Rosenberg M. *Society and the Adolescent Self-Image*. Princeton, NJ; Princeton University Press, 1965.
44. Mellins CA, Brackis-Cott E, Dolezal C, Richards A, Nichoas S, Abrams EJ. Patterns of HIV disclosure to perinatally HIV-infected children and subsequent mental health outcomes. *Clin Child Psychol Psychiatry* 2002;7:101–114.

Address reprint requests to:
Sung-Jae Lee, Ph.D.

*UCLA-Semel Insititute Center for Community
Health
10920 Wilshire Boulevard, Suite #350
Los Angeles, CA 90024*

E-mail: sjlee@mednet.ucla.edu