

## **Poverty and Depressed Mood Among Urban African-American Adolescents: A Family Stress Perspective**

**Phillip L. Hammack, M. A.,<sup>1,5</sup> W. LaVome Robinson, Ph.D.,<sup>2</sup> Isiaah Crawford, Ph.D.,<sup>3</sup> and Susan T. Li, Ph.D.<sup>4</sup>**

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*We examined the role of family stress as a mediator of the relationship between poverty and depressed mood among 1,704 low-income, inner-city African-American adolescents. Nearly half of participants (47%) reported clinically significant levels of depressive symptoms. Being female, reporting higher levels of family stress, and scoring higher on a poverty index were significantly associated with increased reports of depressed mood. Family stress significantly mediated the relationship between poverty and adolescent depressed mood, explaining 50% of the total effect. Sex-specific analyses revealed that this relationship only held for females, and there was no direct relationship between poverty and depressed mood for males. Results lend further support to family stress theory, although they suggest that the model may be more relevant for females than males. Implications for community-based preventive intervention and social policy are discussed.*

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Depression represents a critical health problem during the developmental stage of adolescence. Adolescent depression is associated with recurrent depression in adulthood, increased risk for suicide, and comorbidity with other psychological problems such as substance abuse (see Compas, Connor, & Wadsworth,

<sup>1</sup>Graduate student, Committee on Human Development, University of Chicago, Chicago, IL.

<sup>2</sup>Professor, Department of Psychology, DePaul University, Chicago, IL.

<sup>3</sup>Professor, Department of Psychology, Loyola University Chicago, Chicago, IL.

<sup>4</sup>Former Assistant Professor, Department of Psychology, Loyola University Chicago, Chicago, IL.

<sup>5</sup>Correspondence should be directed to Phillip L. Hammack, Committee on Human Development, University of Chicago, 5730 South Woodlawn Avenue, Chicago, IL 60637; e-mail: phammack@uchicago.edu.

1997; Compas, Ey, & Grant, 1993). Depressed mood is recognized as the most commonly occurring taxonomic level of the disorder, affecting 15–40% of the general adolescent population. A portion of youth who experience depressed mood will eventually develop Major Depressive Disorder (Compas, Ey et al., 1993).

Among African-American youth, the prevalence of Major Depression is as high as 9% (Roberts, Roberts, & Chen, 1997), and some studies suggest that African-American adolescents report higher levels of depressed mood relative to other ethnic groups (e.g., Garrison, Jackson, Marsteller, McKeown, & Addy, 1990). Given the association between depression and suicide (Conner, Duberstein, Conwell, Seidlitz, & Caine, 2001), coupled with the 146% increase in suicide rate among African-American male adolescents during the 1990s (Centers for Disease Control and Prevention [CDC], 1998), it is clear that increased research on depression among young African Americans is needed.

The reality of urban living has changed drastically in the postindustrial era. While cities once represented important centers of life for those involved in national industry (e.g., African Americans from the South who moved to Northern cities), deindustrialization and the changing nature of the economy has left many former workers and their families without a social and cultural infrastructure from which to draw for resources (Brookins, Petersen, & Brooks, 1997). Children reared in the inner city are at increased risk for a host of chronic and daily stressors that compromise development (see Tolan & Gorman-Smith, 1997).

African-American adolescents are particularly susceptible to the effects of poverty, since poverty has become increasingly concentrated in urban neighborhoods often occupied predominantly by African Americans (McLoyd, 1998). There are consistent, strong associations between low socioeconomic status (SES) and mental health problems (Bruce, Takeuchi, & Leaf, 1991; Kessler, 1979; Kessler & Cleary, 1980). Research has suggested that African Americans, because of their disproportionate representation in lower social strata, are particularly affected by the negative effects of poverty on mental health (Kessler & Neighbors, 1986). Research consistently reveals a relationship between SES and depressive symptoms among urban African-American youth (Goodman, 1999; Taylor, 1996). Combined with other potential socioecologic stressors, such as racial discrimination, poverty represents a major risk factor for adverse mental health outcomes for urban African-American adolescents (Hammack, 2003). The relationship between poverty and adolescent adjustment is likely mediated and moderated by a host of individual and contextual factors. Family context represents an aspect of development that might serve to either ameliorate or exacerbate the negative effects of poverty for urban African-American youth.

The African-American family derives much of its character from both its African heritage and its unique position in American society. The traditional

African worldview continues to exert an influence on the family system by influencing its structural character, psychological functions, and philosophical principles (Nobles, 1974a, 1974b, 1988). The history of enslavement and social and economic oppression in the United States (U.S.) also contributes to the strengths of the African-American family system and its structural and functional elements (Sudarkasa, 1988). Among African Americans, conditions of social and economic marginalization in the U.S. have necessitated the development of strong familial support networks and a socialization process for youth that prepares them for life as a member of an oppressed group (McCubbin, Thompson, Thompson, & Futrell, 1998).

Given the salience of family and kinship networks in African-American culture (Bagley & Carroll, 1998; Sudarkasa, 1988), the family stress model (McLoyd, 1990) offers a particularly relevant perspective on depression in African-American youth. This model has been used to examine psychopathology among children and adolescents from many ethnic backgrounds. Primary to family stress theory is the role of the family's economic situation. The model postulates that poverty and economic loss within the family can lead to adolescent psychopathology indirectly by increasing parental stress, parental vulnerability to psychopathology, and negative parenting behaviors (McLoyd, 1990, 1998).

Empirical investigations lend support to the basic premise of the family stress model—that the relationship between economic disadvantage and adolescent adjustment is mediated by proximal (e.g., family) environmental experiences (Conger, Rueter, & Conger, 2000; Felner et al., 1995; Wadsworth & Compas, 2002). However, most research utilizing family stress theory has relied solely on parent reports of poverty and variables related to family stress. Two recent studies with African-American youth identified parenting factors (i.e., parental depression, parenting behaviors) as mediators of the relationship between economic stress and youth adjustment (Conger et al., 2002; Grant et al., 2000), and this set of relationships appears to replicate with other multiethnic samples (e.g., Barrera et al., 2002). This line of research, however, relies heavily on parent reports and conceptualizes family stress in primarily economic terms.

Although studies support the notion that parenting factors mediate the relationship between economic strain and adolescent adjustment, little is known about the extent to which the self-perceptions of African-American youth regarding poverty and family stress are associated with their own depressive moods. As noted, family stress literature tends to define family stress in economic terms. The current study defines family stress as actual family-related stressful life events, thus seeking to complement investigations that have operationalized family stress in primarily economic terms.

The most notable epidemiologic characteristic of depressed mood is that it disproportionately affects females. An international review of sex differences in depression concluded that, in developed countries, a female-male ratio of 2:1 exists

for depression (Culbertson, 1997). Empirical studies of adolescent depression reveal that the sex difference so prominent in adult studies becomes first apparent in adolescence (Compas, Ey et al., 1993; Compas & Hammen, 1996; Nolen-Hoeksema & Girgus, 1994; Petersen, Sarigiani, & Kennedy, 1991; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). Small sex differences begin to emerge between ages 13 and 15 years, but the most significant differences occur between ages 15 and 18 years (Hankin et al., 1998). Beginning in adolescence, males and females appear to experience different types of stress and respond differently to stress (Compas, Orosan et al., 1993).

Males and females appear to diverge in coping techniques during adolescence, and they also appear to respond differently to family stress during this period of development. The coping strategies and response tendencies of females, which crystallize during the sex-specific socialization of the adolescent identity development process, place them at greater risk for experiencing depressed mood (Compas, Orosan et al., 1993; Sethi & Nolen-Hoeksema, 1997). Adolescent females are more likely than males to become involved in the problems of their mothers, and females who become more involved in family stress report more depressive symptoms. In contrast, males who report involvement in family problems and stress do not experience elevated depressive symptoms, suggesting that females respond to family stress in a way that places them at greater risk for depression than males (Gore, Aseltine, & Colten, 1993).

Research suggests that females react to family conflict and stress in ways that predispose them to develop depressive symptoms (Gore et al., 1993; Kerig, 1998); thus, family factors might assume a more salient role in the psychosocial adjustment and development of adolescent females relative to males (Su, Hoffman, Gerstein, & Johnson, 1997; Wentzel & Feldman, 1996). Sex differences in response to family stress have focused almost exclusively on European-American youth, and the response tendencies of African-American adolescent females to family stress have not been examined to our knowledge.

In this study, we were interested in the interrelationships among poverty, family stress, and depressive symptoms as adolescents perceive them. Our hypotheses centered on three central aspects of family stress theory in specific relation to adolescent depression. We were interested in (1) the direct relationship between adolescent-reported poverty status and depressed mood, (2) adolescent-perceived family stress as a mediator of this relationship, and (3) sex differences in the relationship among these variables. Based on the family stress model and research on sex differences in depression, we hypothesized that (1) higher poverty would predict depressed mood, (2) family stress would mediate this relationship, and (3) being female would predict elevated depressive symptoms. We also planned to explore the possibility of sex differences in the family stress model to examine the generalizability of the theory to African-American adolescents of both sexes.

## METHOD

### Participants

Participants were 1,704 inner-city African-American adolescents living in a large Midwestern city in the U.S. Adolescents in the ninth and eleventh grade were recruited from seven urban public high schools. Of youth recruited, 75% completed the necessary consent and assent procedures to participate. Participants ranged in age from 13 to 18 years old, with a median age of 15 years. The sample was 55% female, and 81% of youth endorsed at least one indicator of poverty.

### Procedure

Consent from a parent or adult guardian, in addition to the adolescent's written assent, was required for participation. Surveys were administered during two consecutive class sessions, taking care to protect the adolescents' privacy and confidentiality. The survey instrument was divided into four sections, and four different versions were used for counterbalancing. All instructions and all items were read aloud to ensure accurate responding regardless of any reading difficulties. The adolescents received incentives such as movie tickets following completion of the survey.

### Measures

#### *Poverty*

A poverty index was created based on participants' responses to four dichotomous items: (a) welfare as a source of family income, (b) employment as a source of family income, (c) eligibility for a free or reduced-price lunch at school, and (d) participation in the food stamps program. Affirmative responses to items A, C, and D, and negative responses to item B, were summed to yield a poverty index score for each adolescent. The scale, which yielded a Cronbach's alpha of .69, was also employed in another study utilizing this data (Harper & Robinson, 1999). Other studies with adolescents have used similar types of indices to measure poverty (e.g., Wadsworth & Compas, 2002).

#### *Depressed Mood*

The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) was used to assess depressed mood among the adolescents. The CES-D

is a 20-item self-report inventory designed to measure depressive symptomatology in the general population. Respondents rated how often they had experienced symptoms within the past week using a 4-point scale. Responses to each item were summed to obtain an index of depressed mood, which ranged from zero to 80. A score of 16 or higher on the CES-D indicates a clinically significant level of depression (Radloff, 1977). Psychometric studies have discovered acceptable convergent and discriminant validity for the CES-D (Doerfler et al., 1988; Orme, Reis, & Herz, 1986), and the measure has demonstrated adequate validity and factor structure with diverse cultural groups (e.g., Pretorius, 1991). The measure has demonstrated good internal consistency and test-retest reliability with adolescents, suggesting its appropriate assessment of depressed mood with an adolescent population (Radloff, 1991; Roberts, Andrews, Lewinsohn, & Hops, 1990). The scale yielded a Cronbach's alpha of .82 with the current sample.

### *Family Stress*

The Adolescent Social Stress Measure (ASSM; Tolan, Miller, & Thomas, 1988) was used to assess stressful experiences during the past 12 months. The version of the instrument used in the current study contained 53 items, including a subscale of 34 items that specifically referred to family-related events to assess family stress. The subscale included items such as "Unmarried family member became pregnant" and "Close family relative died." Respondents indicated whether each event had occurred within the past year, and the number of stressful experiences was added to create an index of family stress with a score range from zero to 34. Although the instrument has not undergone extensive psychometric studies, it was developed specifically for use with urban adolescents and has demonstrated adequate content validity with this population (Harper & Robinson, 1999). The measure yielded a Cronbach's alpha of .75 with the current sample.

## **RESULTS**

For all inferential statistical analyses, the criterion for significance was set at .01 for a conservative interpretation of findings given the large sample size. Because some adolescents were missing data on some measures, the sample size for analyses fluctuated somewhat but never decreased more than 5%.

### **Descriptive Statistics and Correlations**

Close to half of the sample (47%,  $n = 804$ ) endorsed clinically significant levels of depression, with scores of 16 or higher. Examined separately by sex, 57%

of females ( $n = 532$ ) versus 35% of males ( $n = 271$ ) reached clinical significance on the CES-D.

Correlations among CES-D score, the hypothesized predictor and mediator variable, and demographic variables were calculated. Sex (0 = *male*, 1 = *female*) and age (0 = 13 to 15 years, 1 = 16 to 18 years) were dummy coded and included in the analyses. Being female was significantly associated with elevated depressive symptoms ( $r[1637] = .26, p < .001$ ), increased reports of family stress ( $r[1703] = .19, p < .001$ ), and higher scores on the poverty index ( $r[1703] = .19, p < .001$ ). As expected, increased reports of depressed mood were significantly associated with higher levels of family stress ( $r[1638] = .36, p < .001$ ) and higher scores on the poverty index ( $r[1638] = .11, p < .001$ ). Furthermore, higher poverty scores were significantly associated with increased reports of family stress ( $r[1704] = .16, p < .001$ ). Age was not significantly associated with any of the variables using our conservative significance criterion. However, there were two statistical trends relating to participant age. Being younger was associated with reporting more family stress ( $r[1704] = -.06, p < .05$ ), and being older was associated with scoring higher on the poverty index ( $r[1704] = .05, p < .05$ ).

### Mediator Analyses

To test the mediational hypotheses specified by the family stress model, a series of multiple regression analyses was conducted in accordance with procedures outlined by Baron and Kenny (1986) and Holmbeck (1997, 2002). Rather than controlling for sex by entering it in each equation, we planned to conduct separate analyses for males and females in order to fully explore the sex-specific utility of the family stress model. Although separate analyses by sex sometimes compromise statistical power, our large sample ensured adequate power for the analyses. We did not control for age since there was no significant relationship between age and any of the variables. Cases with missing data were excluded listwise.

The first regression equation examined the relationship between poverty and family stress. Regression coefficients for this series of equations are presented in Table I. The first equation revealed poverty as a significant predictor of family stress ( $F(1, 1702) = 42.28, p < .001$ ), satisfying one condition of mediation. The second equation revealed poverty as a significant predictor of depressed mood ( $F(1, 1636) = 19.24, p < .001$ ), satisfying the second condition for mediation.

The third and fourth conditions for mediation were tested using a final regression equation. In this equation, both the predictor (poverty) and the mediator (family stress) were entered simultaneously as predictors to assess their impact on the outcome (depressed mood). Poverty and family stress together explained 13% of the variance in CES-D score, and the overall regression model was significant ( $F(2, 1635) = 121.28, p < .001$ ). As indicated in Table I, poverty as a predictor of

**Table I.** Summary of Mediator Analyses for Family Stress (Entire Sample)

| Variable   | <i>B</i> | <i>SE B</i> | $\beta$ |
|--|----------|-------------|---------|
| Equation 1: Poverty→Family stress                |          |             |         |
| Poverty  | .51      | .08         | .16***  |
| Equation 2: Poverty→Depression                   |          |             |         |
| Poverty  | .76      | .17         | .11***  |
| Equation 3: Poverty and Family stress→Depression |          |             |         |
| Poverty  | .40      | .17         | .06     |
| Family stress                                    | .75      | .05         | .35***  |

Note.  $R^2 = .02$  for Equation 1,  $R^2 = .01$  for Equation 2,  $R^2 = .13$  for Equation 3.  
 \*\*\*  $p < .001$ .

depressed mood dropped to non-significance following inclusion of family stress in the model, suggesting a mediator effect.

Post-hoc probing of the mediator effect was conducted in accordance with procedures recently outlined by Holmbeck (2002). Sobel's (1988) method was used to calculate the standard error of the indirect effect. The standard error of the indirect effect was calculated using the regression coefficients and standard errors from the mediator analyses. Using these procedures, a  $z$  test indicates the significance of the drop in regression coefficient for the predictor after controlling for the mediator. In this case, family stress significantly mediated the relationship between poverty and depression ( $z = 5.98, p < .01$ ). Family stress explained approximately 50% of the total effect ( $b_{\text{indirect effect}}/b_{\text{total effect}}; .38/.76$ ), revealing its role as a partial mediator of the effect of poverty on depressed mood for adolescents.

### Sex-Specific Analyses

A series of sex-specific analyses was conducted to examine the generalizability of the family stress model for both adolescent males and females. To explore the sex-specific utility of the model, the correlation and regression analyses were re-calculated separately for males and females.

Correlations were calculated separately for males and females in order to first examine basic associations among depressed mood, poverty, and family stress. For males, increased family stress was associated with elevated depressive symptoms,  $r(768) = .34, p < .001$ . Higher poverty status, however, was not significantly associated with depressed mood. No mediation analyses were conducted for males since this first condition for mediation (i.e., poverty predicts depression) was not satisfied.

For females, higher reports of family stress were significantly associated with depressive symptoms,  $r(909) = .32, p < .001$ . In addition, higher scores on the poverty index were significantly associated with elevated depressive symptoms



**Table II.** Summary of Mediator Analyses for Family Stress (Females Only)

| Variable   | <i>B</i> | <i>SE B</i> | $\beta$ |
|--|----------|-------------|---------|
| Equation 1: Poverty→Family stress                |          |             |         |
| Poverty  | .37      | .11         | .11**   |
| Equation 2: Poverty→Depression                   |          |             |         |
| Poverty  | .62      | .25         | .08**   |
| Equation 3: Poverty and Family stress→Depression |          |             |         |
| Poverty  | .35      | .23         | .05     |
| Family stress                                    | .72      | .07         | .31***  |

Note.  $R^2 = .01$  for Equation 1,  $R^2 = .01$  for Equation 2,  $R^2 = .10$  for Equation 3.

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

( $r[909] = .08, p = .01$ ) and with increased family stress ( $r[932] = .12, p < .01$ ). The same set of regression analyses conducted for the entire sample was next conducted only for females to examine the extent of mediation for family stress. Results of this series of analyses are presented in Table II. As indicated in the table, the regression coefficient for poverty dropped to non-significance in the third equation, which included both the predictor (poverty) and the hypothesized mediator (family stress). Post-hoc probing of this effect revealed a significant mediator effect, as indicated by the significant drop in the effect of poverty with family stress in the equation, ( $z = 3.28, p < .01$ ). For females, the indirect effect accounted for approximately 42% of the total effect.

## DISCUSSION

The aim of this study was to empirically examine the family stress theory of adolescent psychopathology posited by McLoyd (1990, 1998), using youth self-reports from a large sample of inner-city African-American youth. The decision to specifically examine family stress theory was rooted in the relevance of this paradigm for our population of interest, and the choice of depressed mood as an outcome variable was based on the relative dearth of empirical literature on etiologic pathways to adolescent depression using African-American community samples. The mediational analyses conducted for this study support the premise that family stress mediates the relationship between poverty and adolescent depression, particularly for females.

Results of this investigation revealed a strong relationship among poverty, family stress, and depressive symptoms among African American youth. The hypothesized mediational pathway (i.e., poverty→family stress→depressed mood) was significant, although the relationship between poverty and depressed mood was not significant for males, thus precluding the need to examine family stress as a mediator for males. Although it was expected that the relationships among

variables might be stronger for females, a drop to non-significance for males was not hypothesized. This finding stands in contrast to the theoretical notion that males may internalize feelings of helplessness in the context of financial hardship (Spaights & Simpson, 1986), but a vast literature speaks to the divergent etiologic pathways to depression for males and females. In particular, research suggests that males are more likely to display externalizing problems in response to stress (e.g., Robins, 1991), which suggests a sex-specific response tendency to stress (Sethi & Nolen-Hoeksema, 1997).

It is likely that the mediational model specified by family stress theory fails to adequately explain depression among males for at least three possible reasons. First, depression is far less common among males than females because of the sex-specific socialization process that leads females to utilize response tendencies to stress that place them at greater risk for depression (Nolen-Hoeksema, 1987, 1990; Nolen-Hoeksema & Girgus, 1994; Sethi & Nolen-Hoeksema, 1997). Second, because of prescribed female gender role within African-American culture and the importance of the strong connection to family expected for females (Reid, 1985), females might be more susceptible to the internalization of family stress, which in turn could lead to depressed mood. Finally, the connection between economic status (e.g., earnings) and depression might emerge later in life for males and center on individual economic situation rather than that of the family, as higher adult earnings have been linked to more positive self-concept and less depression in African-American men (e.g., Mizell, 1999).

Our results also indicated a high prevalence rate of depressed mood in our sample, revealing it as a high-risk sample of urban youth. Forty-seven percent of participants reported clinically significant levels of depressive symptoms. This finding does not indicate that 47% of our sample would receive a diagnosis of Major Depression, since no diagnostic interviews were administered. However, this level of depressive symptomatology reveals a clinically concerning situation, as even those adolescents whose symptoms are not sufficient to meet diagnostic criteria ("false positives") suffer significant psychosocial impairment (Gotlib, Lewinsohn, & Seeley, 1995). Research has demonstrated an association between depression and a host of problem behaviors during adolescence, such as conduct disorder (Angold & Costello, 1993) and substance abuse (Piacentini & Pataki, 1993), as well as a relationship between adolescent depression and psychological problems in adulthood (Fombonne, Wostear, Cooper, Harrington, & Rutter, 2001a, 2001b; Juon & Ensminger, 1997). Clearly, research that informs effective prevention and intervention strategies for inner-city African-American adolescents is needed in order to combat high prevalence rates.

Based on the results of this study, we suggest that community-based, culture- and sex-specific intervention, coupled with advances in social policy, will facilitate the healthy development of urban African-American youth. Prevention programs and intervention efforts should be mindful of the sex-specific nature of adolescent

depression. In this large sample of inner-city African-American adolescents, the relationship among poverty, family stress, and depressive symptoms was strong. But the relationship between poverty and depression was more relevant for females. Intervention specialists must constantly consider the sex-specific nature of these relationships when designing and implementing programming.

Since this study supported previous research revealing the detrimental connection between poverty and adolescent psychopathology, it is critical that policy makers and social advocacy groups work to eradicate poverty among urban African-American families and communities. This ambitious goal can only be achieved once allocation of economic resources within these communities is adjusted to promote upward mobility and economic prosperity. The promulgation of a specific policy strategy is beyond the scope of this paper, but the findings presented here contribute to the line of research that reveals the strong connection between economic conditions and mental health challenges for youth and their families.

The results reported in this study offer a glimpse of the relationship among poverty, family stress, and depressed mood for urban African-American adolescents living in a large Midwestern city at the end of the twentieth century. The study offers a substantive contribution to the literature on depressed mood among African-American youth by empirically examining a culturally relevant theory of depression using a large sample. The study contributes to the continued effort to increase our basic understanding of depressed mood among members of this population in order to meaningfully enhance prevention, intervention, and policy efforts. Particular strengths of the study included (a) its large community sample of youth, (b) the examination of youth perceptions of variables traditionally obtained via parent report (i.e., poverty and family stress), and (c) the ability to calculate indirect effect estimates for the mediational model. The study presents important data regarding depression, but it also possesses limitations. First, in defining family stress as actual youth-reported life events, we diverged somewhat from the previous literature. This divergence complicates direct comparisons with studies in which family stress was defined in purely economic terms or with reference to parenting factors, but it also addresses the need for multiple operationalizations of the same construct. In this way, the current study contributes to the convergent validity of family stress theory. Second, because the study did not employ a longitudinal design, the ability to examine causal relations among variables was precluded. Third, the study utilized a single survey method, which results in a single source of error variance. Finally, we relied solely on youth self-reports, which prevented substantiation of youth perceptions of poverty and family stress.

In order to meaningfully impact the lives of urban African-American youth, future research must employ longitudinal designs and methodologies derived from a variety of epistemological perspectives (e.g., survey, observational, ethnographic, etc.) to obtain more information about the nature of depressed mood in this

population. Future studies must include increased culturally relevant constructs (e.g., perceived racism, oppression) in order to offer a more unique contribution to the psychological literature on depressed mood among inner-city African-American youth.

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