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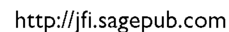

Risk and Protective Factors for Psychological Adjustment Among Low-Income, African American Children

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Abstract

This investigation identifies unique risk and protective factors for internalizing and externalizing problems among 8- to 12-year-old, low-income, African American children and tests cumulative risk and protective models. A total of 152 mother–child dyads complete questionnaires. Receipt of food stamps, mother's distress, and child maltreatment increase children's risk for internalizing and externalizing problems and family functioning (adaptability, cohesion), and after-school program participation (externalizing only) are protective against internalizing and externalizing problems. A cumulative risk model reveals that compared with youth with no risk factors, having one risk factor confers three- and fivefold risk for internalizing and externalizing symptoms, respectively. Having two or three risk factors confers 12 and 19 times greater risk for internalizing and externalizing symptoms, respectively. Compared with no protective factors, youth with two protective factors are 4 and 6 times less likely to display internalizing and externalizing problems, respectively. Implications for community-based preventive intervention efforts and future research are discussed.

Keywords

African American, risk and protective factors, psychological adjustment

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In the United States, low-income, urban, African American children disproportionately experience social hardship and psychological adjustment difficulties (McLoyd, 1998). Yet many of these children achieve healthy psychological development in spite of their elevated risk for maladjustment. Risk and protective research seeks to uncover the factors that distinguish between those who develop and those who appear protected from maladjustment. In the past, risk and protective research often exclusively compared across socioeconomic and ethnic groups, emphasizing deficits among minority groups and limiting our knowledge about psychological development *within* a particular demographic group (Smokowski, Mann, Reynolds, & Fraser, 2004). Recently researchers have attempted to understand the heterogeneity of outcomes among low-income, African American children by illuminating some of the unique risk and protective factors for the development of psychological problems in this population (Kaslow et al., 2003; Krishnakumar & Black, 2002). Gaps in knowledge remain, especially regarding the cumulative effects of multiple risk and protective factors on the development of internalizing and externalizing problems in low-income, African American youth.

More than one third of African American children live in families with incomes below the national poverty line. This is more than double the rate of poverty among Caucasian children in the United States (U.S. Census Bureau, 2006). In addition to poverty itself, most children in low-income families experience other social disadvantages, such as unsafe neighborhoods and single-parent households (McLoyd, 1998). Thus, it is not surprising that low-income, African American children display disproportionately high rates of internalizing and externalizing problems (Randolph, Koblinsky, Beemer, Roberts, & Letiecq, 2000). These problems in childhood predict psychological maladjustment into adulthood (Capaldi & Stoolmiller, 1999).

The literature uses a variety of terms in discussing variables that increase the likelihood of negative outcomes, including risk, vulnerability, and stressful factors. The terms *protective*, *resilience*, *resource*, *buffer*, and *positive* have described variables that decrease the likelihood of an outcome occurring (sometimes in the face of risk). There is confusion about the overlap and differences among terms and researchers define them differently, particularly with regard to the extent to which they reflect main versus interactive effects (Luthar, Cicchetti, & Becker, 2000). We use the term *risk* to refer to factors that increase children's odds of experiencing emotional and behavioral problems and protective as factors that reduce the likelihood at all levels of risk. The sole presence of one risk factor typically is not sufficient to produce a negative outcome. Rather, the cumulative effects of several risk factors and

absence of protective factors are associated with psychological difficulties (Forehand, Biggar, & Kotchik, 1998).

This study aims to fill a gap in the literature by determining the individual and cumulative effects of risk and protective factors on the manifestation of internalizing and externalizing problems among urban, African American, primarily low-income children whose mothers visited a large public hospital. Nearly half of the children's mothers reported an intimate partner violence (IPV) experience within the past year. Thus, this study specifically focused on a unique sample of children at high risk for a variety of negative psychosocial outcomes. The risk factors chosen in the current investigation have been found to exert a negative influence on children's psychological well-being. For example, living in a home environment in which there is intimate partner violence (IPV) has a profound negative effect on children's development; an estimated two thirds of children who witness IPV display internalizing problems, externalizing problems, or both (Grych, Jouriles, Swank, McDonald, & Norwood, 2000).

Many children who reside in homes where IPV is present also are maltreated (Knickerbocker, Heyman, Slep, Jouriles, & McDonald, 2007; Slep & O'Leary, 2005). Despite recent declines in child maltreatment, millions of children experience neglect and abuse (Finkelhor & Jones, 2006). Families with multiple stressors are more likely to be characterized by maltreatment (Belsky, 1993).

Related to IPV and child maltreatment, both as precursors and consequences, are parental psychological difficulties (Jaffee, 2005). Parental psychological distress (i.e., maternal depression) is strongly associated with child psychological symptoms (Goodman & Gotlib, 2002; Luthar & Sexton, 2007). This relationship has held in African American families (Anan & Barnett, 1999). Depressed parents may be negative and overcontrolling, or withdrawn and unresponsive, which can lead to symptoms in their children (Zahn-Waxler, Duggal, & Gruber, 2002).

Finally, poverty and frequent moves and school changes are additional risk factors. Similar to the indirect effects of maternal victimization, poverty may affect child adjustment through inciting or exacerbating maternal depression and ineffective parenting practices (Jones, Forehand, Gene, & Armistead, 2002). Frequent residential moving and school changes commonly associated with poverty (Long, 1992) also are linked to emotional and behavioral maladjustment; school-age children who change residences three or more times display about twice the rate of emotional and behavioral problems as children who have never moved (Simpson & Fowler, 1994). Frequent school changes are linked with behavioral difficulties and academic performance problems (Engec, 2006).

Despite experiencing a multitude of risk factors, most low-income, African American children achieve healthy psychological development (Burchinal, Roberts, Zeisel, Hennon, & Hooper, 2006). In fact, after controlling for socioeconomic status, African American children appear *less* likely than Caucasian children to display internalizing and externalizing problems (Samaan, 2000). Low-income, African American children benefit from protective factors at individual, family, or community levels that buffer against risk and enhance healthy development. In the family domain, greater family adaptability and cohesion are associated with lower child internalizing and externalizing symptoms (Halpern, 2004) and greater child adaptability (Prevatt, 2003). In the community domain, participation in structured after-school activities (e.g., sports, hobbies) is associated with greater social and academic competence, and less conduct problems and depression, whereas greater unstructured free time is associated with conduct problems (Fletcher, Nickerson, & Wright, 2003). Teacher support is related to lower child aggression and delinquency (Ladd & Burgess, 2001) and peer support is associated with lower depression and externalizing problems (Ezzell, Swenson, & Brondino, 2000; Hagen, Myers, & Mackintosh, 2005).

More empirical examination is needed on the cumulative effects of multiple risk and protective factors on the development of internalizing and externalizing problems and such work needs to be conducted with non-Caucasian samples (Ostaszcewski & Zimmerman, 2006). Although a great deal of research has been conducted examining risk and protective factors associated with low-income children's behavior problems, this study is unique in the inclusion of an African American sample recruited from a large public inner-city trauma hospital, with nearly half of the mothers in the sample reporting IPV experiences within the past year. In addition, the current study included multiple informants (both mother- and child-report data) and focused attention on both individual and cumulative risk and protective factors, as most prior investigations have examined the effects of risk and protective factors individually.

To address limitations and gaps within the existing literature, this study focused on certain risk and protective factors across child, familial, and community domains to determine which ones influence African American children's psychological functioning. From among the multitude of possible risk and protective factors suggested by the literature, we selected factors that spread across these multiple domains and that were expected to be particularly relevant to this unique, high-risk sample (i.e., meaningful in the context of low-income families with a high prevalence of IPV). From among the host of possible risk and protective factors, a subset was chosen that was thought

to be particularly related to internalizing and externalizing problems as well as relevant to urban African American families disproportionately affected by poverty and violence. We determined which risk and protective factors are uniquely important in understanding these children's psychological outcomes using multivariate models. We also examined the cumulative effects of risk and protective factors on these youths' well-being.

Most prior research in this area has used traditional multiple regression models to examine the significance and relative weight of each risk and protective factor in predicting an outcome. However, this approach is problematic when risk and protective factors are moderately to highly correlated (Mosteller & Tukey, 1977). Therefore, we chose to examine risk and protective factors through a cumulative risk and protection model, whereby predictors and outcomes were dichotomized and presence, absence, and number of risk and protective factors were used to predict the outcome instead of the level of each factor. The cumulative approach assumes that cumulative risk is more strongly associated with outcomes than the sum of each individual risk factor (Sameroff, Seifer, & McDonough, 2004). Although the major disadvantage of this approach involves the loss of information about the relative weight of each predictor, it confers advantages in terms of ability to calculate odds ratios (which are easily interpreted) and overcoming the statistical problem of correlated predictors. In addition, such an approach is consistent with a public health model that focuses on presence or absence of risk and protective factors and outcomes.

The purpose of this study was to determine the cumulative effects of risk and protective factors on the internalizing and externalizing symptoms of low-income, African American children visiting an inner-city hospital with their mothers. We hypothesized that as the number of risk factors increase and the number of protective factors decrease, the odds of having a psychological problem would significantly increase. Conversely, we expected that the likelihood of well-being would increase as the number of risk factors decrease and the number of protective factors increase. Illuminating risk and protective factors in this population will set the stage for more successful prevention and intervention efforts.

Method

Participants

African American women and their aged 8- to 12-year-old children for whom they were the legal guardian (152 mother–child dyads) participated in this

project. The women ranged in age from 22 to 52 years ($M = 32.33$, $SD = 6.87$). Of the 152 dyads, 45% included mothers who had been abused by a current partner or a partner they had in the past year. The mothers were generally low-income; 65% were unemployed, 39% had not graduated from high school, 14% were homeless, and 26% had individual monthly incomes under $250. Most (29%) were single and never married, 18% were married, 15% were separated or divorced, 19% had a partner with whom they were not living, and 17% were living with a partner. Most women identified themselves as Baptist (60%). In terms of the youth, 45% were males, their mean age was 10.00 years ($SD = 1.43$), and they were in Grades 1 to 8 ($M = 4.36$, $SD = 1.55$).

Procedure

This study was conducted following approval by the Institutional Review Board of the university and the Research Oversight Committee of the hospital where the data were collected. A Certificate of Confidentiality was obtained. Suspected cases of child maltreatment were reported to Child Protective Services as legally mandated.

Recruitment and screening. A large, inner-city, Level 1 trauma center that provides medical and mental health services to a predominantly low-income, African American population in the southeastern United States served as the recruitment site. The mothers were recruited in the waiting areas of this comprehensive health system or were referred to the project by hospital staff after seeking care following an IPV incident.

Once recruited, the screening process had two components. First, the interviewer ascertained if the woman met study inclusion criterion, which included being in a relationship in the prior 12 months, having a child aged 8 to 12 years old for whom she was the legal guardian and who had lived with her at least 50% of the time during the prior year, and being willing to complete the assessment protocol with her child. A 2½- to 3-hr interview was scheduled for those women and their children who met inclusion criterion. Second, when the women came to complete surveys, the project was explained and informed written consent from the mothers and written assent from the children were secured. The eligibility of the dyad was further evaluated via brief screening instruments that determined if the women and children were medically, cognitively, and psychiatrically stable enough to complete the assessment protocol. Medical stability in both parties was assessed with the demographic form. Cognitive impairment in mothers was assessed via the Mini Mental State Exam (MMSE; Folstein, Folstein, McHugh, & Fanjiang, 2001) and the Rapid Estimate of Adult Literacy in

Medicine (Williams et al., 1995; MMSE scores <24 if literate or <22 if functionally illiterate). In the children, cognitive impairment was determined by the Peabody Picture Vocabulary Test–III (Dunn & Dunn, 1997); scores <70 resulted in exclusion. Active psychosis in the mothers was evaluated using the Psychotic Symptom Screening Questionnaire, a measure developed for this protocol. Medical instability, cognitive impairment, or active psychosis resulted in exclusion of the dyad from the protocol.

Seven mother–child dyads were disqualified for not meeting inclusion criteria in the first screening (e.g., child not between the ages of 8 and 12). Eighteen other dyads were excluded based on cognitive (15 children and 3 mothers) or psychotic (2 mothers) impairment. Two dyads did not complete the protocol. This manuscript incorporates data from 152 of the 181 (84%) dyads who completed the screening protocol.

Assessment. Mothers and children were assessed simultaneously by two different trained research team members. All measures were presented orally.

Measures

Outcome measures. There were two outcome measures of internalizing and externalizing problems in the children, the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1991) and the Youth Self Report (YSR; Achenbach, 1991). The CBCL is a parent-report measure of children's emotional and behavioral problems of children, whereas the YSR is a self-report instrument for which youth respond to items with the same response format as the CBCL. Both parent- and child-report measures have been used extensively with low-income, ethnic-minority samples. Internal consistency reliabilities were high in the current sample, with alphas of .88 and .91, respectively, for the CBCL internalizing and externalizing subscales and .89 and .86, respectively, for the YSR internalizing and externalizing subscales. Because the YSR was intended for children aged 11 to 18, internal consistency reliability estimates for children in the sample aged 8 to 10 were examined. These were strong as well; alphas were .86 and .79 for internalizing and externalizing subscales, respectively. In line with prior studies dichotomizing this outcome measure (Barth, Wildfire, & Green, 2006), youth in the borderline or clinical range on either the CBCL or YSR internalizing symptom domain were scored a 1 (51%) and youth in the normative range were scored a 0. The same procedure was used for creating the externalizing outcome measure (43% = 1).

Risk factor measures. Risk factor measures were dichotomized such that a 1 indicated the presence of the risk factor and 0 indicated the absence of the risk factor. Four of the risk factor constructs were based on mother reports:

receipt of food stamps, mother's psychological distress, mother's IPV, and transience. One risk factor construct, children's history of maltreatment, was based on child report. When published cut-points for dichotomizing factors were not available, we arbitrarily chose a cut-point high enough to be clinically meaningful but low enough to have an adequate number of participants in the higher level.

Receipt of food stamps was assessed by asking the mother if she was receiving food stamps at the time of the assessment (50% = yes). Traditional socioeconomic status measures were not used because the entire sample was composed of low-income participants. Food stamps are considered an indicator of economic need in families with children, as more than 90% of children living in poverty nationally receive food stamps (U.S. Department of Health and Human Services, 2007).

Mother's psychological distress was assessed with the Symptom Checklist-90–Revised (Derogatis, 1992), a widely used measure with good psychometrics (α = .98 in this sample). Corresponding with recommended cut-points based on norms for nonpatient females, women above the clinical cut-point (>1.47) on the general severity index were classified as having the psychological distress risk factor (21%).

Mother's intimate partner violence (IPV) history was measured with the Index of Spouse Abuse (ISA; Hudson & McIntosh, 1981). The ISA has good psychometric properties, including with African Americans (Campbell, Campbell, King, Parker, & Ryan, 1994; Cook, Conrad, Bender, & Kaslow, 2003) and had good internal consistency in the current sample (α = .96). Women experiencing physical or nonphysical abuse by a partner within the past year at levels above the scale authors' recommended cut-points (>9 for physical and >24 for nonphysical) were classified as IPV victims (45%).

Child maltreatment was assessed with the Childhood Trauma Questionnaire–Short Form (CTQ), which assesses for a history of physical, emotional, and sexual abuse, and emotional and physical neglect (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997; Bernstein et al., 1994; Bernstein & Fink, 1998). The CTQ has demonstrated good psychometric properties (Bernstein et al., 1997; Bernstein & Fink, 1998; Wright et al., 2001) and was internally consistent in the current sample (α = .77). Youth who scored above the scale authors' specified cut-points on any of the five subscales (>9 for emotional abuse, >8 for physical abuse, >6 for sexual abuse, >10 for emotional neglect, and >8 for physical neglect) were classified as having the risk factor (24%).

Transience was assessed with the number of times the child had to change schools because of moving during their lifetime. We chose to assess transience through school changes because school mobility, in particular, has

been linked with greater academic and behavioral difficulties (Engec, 2006). Based on the distribution of the measure (range = 0-9, *Mdn* = 2, *M* = 1.85, *SD* = 1.66), and the intent to score this variable to reflect risk experienced by a minority of the sample, the measure was dichotomized based on if the child had changed schools three or more times (28%).

Protective factors. Protective factor measures were dichotomized such that a 1 indicated the presence of the protective factor and 0 indicated its absence. Because the protective factor measures did not have author-recommended cut-points, we dichotomized each measure according to its distribution and our intent to have the measure reflect something unique to a minority of the sample.

Children's involvement in after-school activities was assessed with the YSR measure of participation in after-school activities. Youth who participated in after-school activities at least once a week were classified as having the protective factor (43%).

Family functioning was measured with the 30-item Family Adaptability and Cohesion Evaluation Scales–II (Olson, Portner, & Lavee, 1992), which taps adaptability and cohesion. It had good internal consistency reliability in this sample (α = .82). Combining the two subscale scores, family types can be categorized as balanced, moderately balanced, midrange, and extreme. Youth with scores in the "moderately balanced" or "balanced" category, according to the scoring recommendations of the scale authors, were deemed to have the protective factor (37%).

Peer support was measured using the 19-item peer support subscale of the Social Support Appraisal Scale (SSAS; Dubow, Tisak, Causey, Hryshko, & Reid, 1991; Dubow & Ullman, 1989). The subscale assesses a child's appraisal of peer social support, and it had good internal consistency reliability in the current sample (α = .91). The measure was dichotomized such that respondents with scores in approximately the top 30% were considered to have the protective factor (32%).

Teacher support was measured using the 10-item teacher support subscale of the SSAS, which had good internal consistency reliability in this sample (α = .85). The SSAS was dichotomized at a cut point where youth in approximately the top 30% were considered to have the protective factor (33%).

Results

Bivariate Analyses

Chi square examined the bivariate associations between the risk and protective factors with the outcome measures—internalizing and externalizing

Table 1. Bivariate Results From Chi-Square Analyses

	Internalizing		Externalizing	
	%	χ^2	%	χ^2
Food stamps		4.14		8.83*
Yes	59		55	
No	41		31	
Mother's psychological distress		9.61*		13.77*
Yes	49		72	
No	12		35	
Mother's partner violence history		10.38*		6.97
Yes	66		55	
No	34		34	
Child maltreatment		20.15*		16.41*
Yes	83		72	
No	41		34	
Number of schools > 3		0.88		3.49
Yes	57		55	
No	49		38	
After-school programs		0.04		3.61
Yes	51		34	
No	52		50	
Family functioning		9.66*		9.35*
Yes	35		28	
No	62		34	
Peer support		15.60		0.34
Yes	27		40	
No	62		45	
Teacher support		6.41		2.50
Yes	36		34	
No	58		47	

*$p < .0028$.

problems. Bonferroni's adjustment for multiple comparisons was made to prevent Type I errors (.05/18 tests = .0028 p value). As shown in Table 1, the following risk factors were related to having clinically significant internalizing symptoms: mother's psychological distress, mother's IPV history, and child's maltreatment status. The only protective factor that was related to a lower likelihood that a child would evidence clinically elevated levels of internalizing symptoms was family functioning.

Table 1 also shows the risk and protective factors associated with clinically significant levels of externalizing symptoms. Risk factors for clinically

Table 2. Estimates, *SE*s, and AORs From Multivariate Logistic Regression Results

	Internalizing problems			Externalizing problems		
	Estimate[a]	*SE*	AOR	Estimate[a]	*SE*	AOR
Gender	−1.14	0.46	0.32	−0.60	0.48	0.55
Age	−0.38	0.17	0.96	0.06	0.18	1.06
Food stamps	0.94	0.43	2.57*	1.39	0.46	4.00*
Psychological distress	1.23	0.63	3.43*	2.28	0.71	9.79*
IPV history	0.82	0.45	2.28	0.48	0.48	1.62
Child maltreatment	1.75	0.60	5.74*	2.13	0.62	8.37*
Number schools	0.01	0.49	1.00	0.60	0.50	1.82
After-school programs	−0.84	0.46	0.43	−1.83	0.53	0.16*
Family functioning	−1.01	0.49	0.36*	−1.49	0.55	0.23*
Peer support	−0.95	0.52	0.39	0.91	0.57	2.48
Teacher support	0.55	0.58	1.73	0.24	0.62	1.27

Note: AOR = adjusted odds ratio; IPV = intimate partner violence.
a. Estimates are unstandardized regression coefficients.
*$p < .05$.

significant externalizing symptoms included family's receipt of food stamps, mother's psychological distress, and child maltreatment. Family functioning was the one protective factor associated with reduced likelihood of displaying clinically significant externalizing symptoms.

Multivariate Analyses

To determine the unique contribution of each of the risk and protective factors in predicting children's internalizing and externalizing symptoms, two parallel multivariable logistic regression analyses were conducted, each controlling for child's sex and age. The first regression model predicted the likelihood of clinically significant levels of internalizing problems. As shown in Table 2, receipt of food stamps, mother's psychological distress, and child maltreatment increased risk, and family functioning protected against internalizing problems.

A second regression model predicted the likelihood of clinically significant levels of externalizing problems. Findings from this model, also displayed in Table 2, showed that receipt of food stamps, mother's psychological distress, and child maltreatment were associated with an increased risk, and participating in after-school programs and family functioning protected against externalizing problems.

Cumulative Risk Factor Model

To ascertain if the accumulation of risk factors was associated with greater odds of a child being above the clinical threshold for internalizing and externalizing problems, a cumulative risk factor model was tested. Groups were formed based on the number of risk factors endorsed. The decision to form groups based on number of risk factors (instead of examining number of risk factors continuously) was to glean information about the tipping point, or when the number of risk factors becomes too much and results in increased risk for a negative outcome. Only risk factors that were significant in the multivariable logistic regression models for either internalizing or externalizing problems were used in creating the groups (i.e., receipt of food stamps, mother's psychological distress, child's maltreatment status). The groups were (a) no risk factors endorsed (32%), (b) one risk factor endorsed (45%), and (c) two to three risk factors endorsed (23%). Only seven youth had all three risk factors, so this group was combined with the group that had two risk factors. Of those with two risk factors, 15% had experienced child maltreatment and had mothers with significant psychological distress, 33% had mothers who had psychological distress and received food stamps, and 52% experienced child maltreatment and were in families that received food stamps.

With three groups, it is standard to make only two comparisons because of the degrees of freedom (2). We decided that the referent group would be those with no risk factors so that we could determine if one risk factor increased the likelihood of clinical distress, or if more than one had to be present in order to tip the scales. Thus, the group with zero risk factors served as the reference category to which the other groups were compared. Dummy coding was used to compare the groups, and all dummy variables were simultaneously entered into logistic regression models predicting internalizing and externalizing problems. Results, summarized in Table 3, showed that youth with one risk factor were more than 3 times more likely than youth with no risk factors to evidence clinically significant internalizing distress (adjusted odds ratio [AOR] = 3.68, 95% confidence interval [CI] = 1.64, 8.25) and almost 5 times more likely than youth with no risk factors to evidence clinically significant externalizing distress (AOR = 4.91, 95% CI = 1.93, 12.47). Multiple risk factors conferred an even greater risk of psychological problems; compared with youth with no risk factors, youth with two or three risk factors were almost 12 times more likely to display clinically significant internalizing distress (AOR = 11.89, 95% CI = 4.14, 34.19) and 19 times more likely to display clinical levels of externalizing distress (AOR = 19.04, CI = 6.17, 58.75).

Table 3. AORs and 95% CIs From Cumulative Risk and Protection Models

	Internalizing problems		Externalizing problems	
	AOR	95% CI	AOR	95% CI
Risk factors				
0	–	–	–	–
1	3.68	1.64-8.25	4.91	1.93-12.47
2-3	11.89	4.14-34.19	19.03	6.17-58.76
Protective factors				
0	–	–	–	–
1	0.61	0.29-1.28	0.29	0.14-0.63
2-3	0.24	0.07-0.79	0.16	0.04-0.57

Note: AOR = adjusted odds ratio; CI = confidence interval.

Cumulative Protective Factor Model

To test a cumulative protective factor model, groups were formed to represent a child's level of protection from having clinically significant internalizing or externalizing problems. As with the cumulative risk factor model, only protective factors significantly related to either outcome measure in the multivariable models were included in group formations (i.e., after-school programs, family functioning). Groups were (a) no protective factors endorsed (32%), (b) one protective factor endorsed (56%), and (c) two protective factors endorsed (12%).

The group with zero protective factors served as the reference category to which the other groups were compared. Again, dummy coding was used to compare the groups, and all dummy variables were simultaneously entered into logistic regression models predicting internalizing and externalizing problems. To interpret the odds ratios in the protective factor model, we took the multiplicative inverses of the odds ratios that were less than 1. Results, summarized in Table 3, revealed that having only one protective factor was not associated with a reduced likelihood of evidencing internalizing distress (AOR = 0.61, 95% CI = 0.29, 1.28) but was associated with a reduced likelihood of having clinically significant levels of externalizing distress (AOR = 0.29, 95% CI = 0.14, 0.63). However, having two protective factors was significantly associated with a reduced risk of both internalizing (AOR = 0.24, 95% CI = 0.07, 0.79) and externalizing (AOR = 0.16, 95% CI = 0.04, 0.57). In other words, youth with no protective factors were approximately 4 times more likely to have internalizing distress and 6 times more likely to have externalizing distress than youth with two protective factors.

Discussion

Although 15% of youth ages 5 to 14 in the United States are African American and African American children are 2½ times more likely than their European American peers to experience poverty (www.census.gov), there is a relative dearth of empirical attention addressing adjustment outcomes of poor African American youth living in urban environments, particularly those recruited from large public hospitals with additional risk factors (e.g., violence in the home). This investigation extended prior research by ascertaining the cumulative, in addition to the individual, effects of both risk and protective factors on the manifestation of internalizing and externalizing problems in low-income, African American 8- to 12-year-olds residing in an urban environment. After applying a Bonferroni correction for the multiple comparisons, several of the risk and protective factors were related to either internalizing or externalizing symptoms or both in the expected direction in the bivariate analyses. Three of the nine risk and protective factors (mother's psychological distress, child maltreatment, and family functioning) were significantly related to both internalizing and externalizing symptoms in the expected direction. Mother's IPV was related only to greater child internalizing symptoms, whereas family's receipt of food stamps was specifically only related to greater child externalizing symptoms. In logistic regression analyses with age and sex controlled, receipt of food stamps, mother's psychological distress, and child maltreatment emerged as the only three risk factors that significantly predicted both clinically significant internalizing and externalizing symptoms. Regarding protective factors, family adaptability and cohesion predicted lower risk for both types of problems, and participation in after-school activities emerged as a unique predictor only of lower externalizing problems.

Of note, internalizing and externalizing problems were the most prevalent among youth with the highest cumulative risk and the lowest cumulative protection. Low-income, inner-city African American youth that were exposed to risk factors were significantly more likely than those with no risk factors to experience emotional and behavioral problems, particularly when they were exposed to multiple risk factors. Similarly, youth with two protective factors were significantly less likely than those with no protective factors to exhibit internalizing and externalizing distress. This finding is consistent with prior studies documenting that an accumulation of risk factors and a dearth of protective factors sets the stage for problematic outcomes in childhood (Gerard & Buehler, 2004; Klein & Forehand, 2000; Loukas & Prelow, 2004; Rutter, 2001) and adulthood (Meadows, Kaslow, Thompson, & Jurkovic,

2005; Thompson, Kaslow, & Kingree, 2002). The presence of internalizing and externalizing problems in childhood predicts subsequent adjustment problems (Loeber & Hay, 1997; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996).

The cumulative impact of risk and protective factors appeared stronger for externalizing symptoms than for internalizing symptoms. Having two or more risk factors was especially detrimental: Youth with two or more risk factors were 12 and 19 times more likely than those with no risk factors to display clinical levels of internalizing and externalizing symptoms, respectively. Although clearly beneficial, the protective factors were not as strongly related to functioning. Youth with both protective factors (family adaptability and cohesion and after-school activities) were about 4 times less likely than those with no protective factors to display clinically elevated internalizing problems, and about 6 times less likely to display clinical levels of externalizing symptoms. Past studies have found discrepant results with regard to the relative impact of risk versus protective factors. For example, among a sample of Dutch adolescents, there was a greater impact of risk factors (Dekovic, 1999). By contrast, in a longitudinal study of inner-city Chicago youth, Smokowski and colleagues found that protective factors more strongly predicted psychological outcomes in youth (Smokowski et al., 2004). These discrepant findings may be related to sample characteristics or variations in the risk and protective factors and outcome measures that are used. Thus, further research is needed to clarify the relative contributions of varying risk and protective factors within various populations.

Greater understanding of risk and protective factors in this population should lead to more effective and multifaceted programs that comprehensively address multiple domains of functioning both to reduce risk factors and enhance protective factors (Borduin et al., 1995; Kazdin, 1997). It is imperative that such interventions target youth who are particularly vulnerable, namely those with multiple risk and a dearth of protective factors. Promising prevention programs already exist. For example, a comprehensive early childhood prevention program for at-risk children that included education, family, and health services was associated with lower rates of depression and delinquency and greater educational achievement in adolescence (Smokowski et al., 2004), a finding potentially attributable to increasing family and school support (Reynolds, Temple, Robertson, & Mann, 2001).

Given the value of protective factors, it would be prudent to promote the development of resilient functioning in preventive interventions (Luthar & Cicchetti, 2000; Luthar et al., 2000). Such interventions should bolster assets and resources. These interventions are likely to be most effective if they

address individual, peer, family, and community factors (Ostaszcewski & Zimmerman, 2006).

Our results underscore the value of going beyond traditional psychological interventions for childhood internalizing and externalizing problems. For instance, increasing community protective factors (such as after-school programs) may be equally effective. The findings also highlight the importance of family functioning. Interventions that reduce family adversity and increase family cohesion and support (i.e., family therapy, parent individual therapy) will likely be crucial (Northey, Wells, Silverman, & Bailey, 2003). Wraparound and systems-of-care interventions (Manteuffel, Stephens, & Santiago, 2002; Stephens, Holden, & Hernandez, 2004) that target all of these domains may be necessary to counteract the accumulation of risk factors in some families.

Results must be qualified by a consideration of limitations. First, several features of the study design constrained clear interpretation of the results. The cross-sectional design prevented making causal inferences or establishing temporal sequence. Therefore, the assertion that risk and protective factors temporally preceded and played a causal role in the development (or lack thereof) of problems remains speculative. However, prior research has found that risk and protective factors prospectively predict child functioning (Luoma et al., 2001). It was not within the scope of this study to measure all possible risk and protective factors for child mental health problems. Our selection of variables was guided by prior research and speculation about key factors relevant to this sample, but the set of variables clearly does not completely or coherently capture all factors leading to the development of internalizing and externalizing problems in children. We chose to dichotomize our risk and protective factor and outcome measures to use a cumulative risk and protective factor mode of statistical analyses. This conferred the advantage of obtaining odds ratios and reducing the statistical problem of correlated predictor variables, but it also carries disadvantages such as a lack of information about the relative contribution of each risk and protective factor. Reliance on parent-report data may be another limitation; some of our risk and protective factors may have skewed parent perceptions, thereby causing spurious relations between predictor and outcome variables (Burt et al., 2005; Mowbray, Lewandowski, Bybee, & Oyserman, 2005; Youngstrom, Loeber, & Stouthamer-Loeber, 2000). Finally, this study involved a unique sample of urban, low-income, African American children whose mothers had experienced high rates of IPV; therefore, generalizability is significantly limited to groups with these specific characteristics. However, we also consider this limitation a design strength given the limited information about this group (Smokowski et al., 2004).

To address these limitations, future studies should use a longitudinal design to illuminate the unfolding of risk and protective factors and child symptoms over time. Questions remain about mechanisms of risk and protective factors. For example, through what mechanism(s) does poverty affect child adjustment? To what extent do risk factors negatively affect children through disruption of neurobiological functioning? How do protective factors buffer against maladjustment? Future research should include multiple reporters of child symptoms and assess multiple domains of risk and protective factors.

This study uncovered several risk and protective factors that may affect the development of internalizing and externalizing disorders among low-income, African American youth. Many of the risk and protective factors appear readily amenable to change. Hopefully, these results will spark research, prevention, and intervention efforts that will ultimately decrease psychological difficulties in this population.

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The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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