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Adolescent Problem Behavior and Depressed Mood: Risk and Protection Within and Across Social Contexts

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This study examined risk and protection for adolescent problem behavior and depressive symptomatology in an average-risk sample of 11th graders. Using a socioecological perspective, we aggregated risk factors for adolescent problem behavior and depressed mood by 3 social contexts: i.e., family and peer contexts, and a context comprising the most important nonparental adult (“VIP”) in respondents’ lives. Protective factors associated with these 3 contexts were also included in the analyses. We tested separate models (including outcome-specific risk and protective factors) for predicting problem behaviors and depressive symptoms; the models demonstrated divergent validity. Risk and protective factors accounted for 49% of the variance in problem behavior and 49% in depressive symptoms. Tests of interactions between risk-aggregates and protective factors yielded several significant *cross-context* buffering effects in the problem behavior model, but none in the depressive symptoms model. Parents’ and VIP’s perceived sanctions buffered adolescents against high risk for problem behavior emanating from the peer context. Additionally, perceived peers’ sanctions buffered youths against risk emanating from each of the 3 contexts.

KEY WORDS: risk; protection; problem behavior; depressed mood.

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INTRODUCTION

Risk researchers have explored various risk and protective factors associated with negative psychosocial outcomes, primarily among high-risk samples of youth. Traditionally, researchers examined problem behavior from a strictly individual perspective, giving little attention to adolescents’ interactions within a social context and even less attention to cross-context interactions (Bronfenbrenner, 1986; Dannefer, 1984). Recently, researchers have taken a more ecological approach—an approach that is informed by the socioecological theory originally proposed by Bronfenbrenner (1979). This theory focuses on the complex arrangement of relationships that exists between individuals and their multiple environments, and considers individuals’ development within and across these contexts.

Researchers who have modeled their investigations on the socioecological framework have examined the links between multicontext risk factors (e.g., home, school, peer group, neighborhood) and psychosocial outcomes (Gore and Aseltine, 1995; Jessor *et al.*, 1995; Liaw and Brooks-Gunn, 1994; Smith *et al.*, 1995; Werner and Smith,

1982). In addition, some risk researchers have examined *cumulative* effects of risk across a variety of domains. Werner and Smith (1982), for example, found that high levels of risk in children's lives were associated with more negative cognitive and behavioral outcomes. A study by Liaw and Brooks-Gunn (1994) demonstrated a linear relationship between number of risk factors and 2 outcomes (IQ and problem behavior), such that increments in risk factors were associated with lower IQ scores and higher incidence of problem behavior. More recently, Greenberg *et al.* (1999) developed a model in which risk factors were separated into 5 contexts (2 demographic contexts, family, neighborhood, and mother's depression) in order to examine the relative contribution of each of these risk contexts to 1st-grade children's psychological, social, and academic outcomes. Results demonstrated that measures based on each of the 5 contexts, when added separately to the models, accounted for a significant increase in variance for both externalizing and internalizing symptoms. Family risk (a cumulative index based on multiple measures) and mother's depression (based on mother's CES-D score) had the largest effects on both externalizing and internalizing symptoms of young children.

Other researchers have used similar socioecological models to examine the relations between risk and psychosocial outcomes, but have included protective factors as well—that is, factors expected to decrease problem behavior for all youths or for those at high risk. For example, in a study of psychopathology and resilience among high-risk children and adolescents, Smith *et al.* (1995) found that the accumulation of family risk factors was significantly associated with serious delinquency and drug use. Protective factors also contributed uniquely to these outcomes: Specifically, when cumulative risk was high, several school and family protective factors were linked to better outcomes. In another study, Jessor *et al.* (1995) proposed a socioecological risk model for problem behavior that included individual risk factors such as the adolescent's low expectations for success, as well as peer-level risk factors such as friends' involvement in problem behavior. Protective factors, such as positive orientation toward school and positive relationships with adults, were also included in the model. Results from their study showed that the accumulation of risk factors was related to increased problem behavior and that the accumulation of protective factors was related to lower levels of problem behavior. In addition, the authors found a moderating effect, such that high levels of protection buffered the relationship between risk and problem behavior when risk was high.

These studies on risk and protective factors have used various strategies to examine children's and adolescents'

outcomes (i.e., multiple risk factors vs. cumulative indices, risk vs. combined risk and protection, and single risk measures vs. multicontext risk indices). Although several studies have examined risk and protective factors for adolescent problem behavior using measures that reflect different social contexts, much less research has focused on adolescent *depressed mood* using this same socioecological perspective. Additionally, we know of no studies that examine *cumulative* risk, within various contexts, for adolescent depressive symptomatology. Moreover, with the exception of a few studies (e.g., Formoso *et al.*, 2000; Gore and Aseltine, 1995; Seiffge-Krenke, 1995), most studies of risk and protective factors for adolescent depressed mood have focused on clinical or high-risk populations. Thus, it is unknown how useful the risk/protection framework might be for understanding variation in the mood of youths who are *not* at high risk. One recent study that attempted to address some of the limitations of risk and protection studies in the depression literature was conducted by Gore and Aseltine (1995). In their study of a community sample of more than 1000 adolescents, Gore and Aseltine explored the possible cross-context stress buffering effects on adolescents' depressive symptoms. They examined interactions between stressors (i.e., life events and relationship problems) and resources (e.g., social support, social integration) from 3 different contexts (i.e., individual, family, and peer group). Results revealed several cross-domain interactions. However, of all the *within*-domain interactions that were tested, only 1 (i.e., Peer Stressors \times Peer Support) was significant. Gore and Aseltine's study demonstrated that protective mechanisms within particular contexts may be elemental in protecting adolescents who face high risk in other contexts against poor psychosocial outcomes (Gore and Aseltine, 1995). Although the socioecological model lends itself to examining cross-context interactions of risk and protection, most studies to date have not examined the extent to which risks from one context or life-domain might be moderated by protective factors from other contexts.

The present study expands on Gore and Aseltine's study (Gore and Aseltine, 1995) by including more types of stressors, more contexts, and more adolescent psychosocial outcomes. We include such stressors as depression among family members, family demographics, peer depression, etc. In addition, we include family and peer contexts, as well as a relatively understudied social context, that of "very important" nonparental adults. Finally, we examine both adolescent depression and problem behaviors. We expand on the existing problem behavior literature by examining buffering effects of protective factors across multiple risk contexts.

The remainder of this review focuses on risk and protective factors for problem behavior and depressive symptomatology in adolescence. The review is selective insofar as it focuses on those factors that could be assessed with the data from the present study.

Risk Factors for Problem Behavior and Depressed Mood

Researchers have identified a large number of familial, peer, and other social-environmental risk factors that are associated with problem behaviors during adolescence (see, e.g., Brook *et al.*, 1998; Jessor, 1991; Smith *et al.*, 1995). A number of factors also have been consistently identified as being related to clinical manifestation of depression or to the presence of depressive symptoms (Devine *et al.*, 1994).

Family Risk Factors

Family factors are perhaps the best-studied predictors of adolescent outcomes. Demographic factors such as family structure and parental education consistently have been linked to problem behavior and depression in adolescents. Dual-parent, intact families are more likely to be economically stable, to have more resources, and to engage in more parental monitoring than single-parent or stepparent families (Kandel *et al.*, 1986; Rickard *et al.*, 1982; Steinberg, 1987). Steinberg (1987) showed that differences in family structure moderated the relationship between peer pressure and adolescent behavior: Specifically, Steinberg found that adolescents who were living with both biological parents reported less susceptibility to pressure from peers to engage in problem behaviors than adolescents who were living in single-parent households or growing up in stepfamilies. Low parental education also has consistently been associated with greater psychosocial problems in youth (Jessor, 1992; Smith *et al.*, 1995; Werner and Smith, 1982).

Other family factors that have been linked to depressed mood and problem behavior include stressful life events pertaining to the family—events involving both chronic problems, such as persistent fighting between parents, and acute events, such as death of a family member (Chung and Elias, 1996; Compas *et al.*, 1989; Forehand *et al.*, 1998; Wills *et al.*, 1992), and parent-adolescent conflict (e.g., Greenberger and Chen, 1996). Family members' behaviors, mood, relationships with each other, and attitudes also are consequential for adolescent psychosocial outcomes. For example, research on juvenile delinquency indicates that parental tolerance of deviant behavior and

parental criminality are associated with conduct problems in adolescents (Loeber and Stouthamer-Loeber, 1986; Werner and Smith, 1992). Similarly, siblings' involvement in problem behavior has been associated with the initiation and frequency of adolescent substance use (Hawkins *et al.*, 1992). Depressive symptomatology in family members puts adolescents at heightened risk for depressed mood. In addition to genetic transmission of a tendency toward depression, depressive symptomatology in other family members may influence adolescents' mood through its negative effect on the quality of the interactions that occur between parents and adolescents and between adolescents and their siblings (Dodge, 1990; Hops, 1996).

Peer Risk Factors

The importance and influence of peers in the lives of adolescents has been well documented. Seiffge-Krenke (1995) found that prior exposure to stressful interpersonal events, such as loss of a close friend or breaking up with a boyfriend/girlfriend, was associated with more negative psychosocial outcomes. In addition, studies have shown that low peer acceptance is related to both depressed mood and problem behavior (East and Rook, 1992; Jacobsen *et al.*, 1983; Kupersmidt and Coie, 1990; Parker and Asher, 1993). Several studies have found that having peers who engage in or approve of misconduct is highly predictive of adolescents' own participation in problem behaviors (Duncan *et al.*, 1995; Elliott and Menard, 1996; Farrell and White, 1998). Childhood aggressiveness with peers also has been linked to increased likelihood of conduct problems in adolescence (Kupersmidt and Coie, 1990; Spivack *et al.*, 1986). Another way in which adolescent outcomes are linked with their peers' emerges in relation to depressive symptoms. Hogue and Steinberg (1995) showed that adolescents are not only apt to associate with—that is, select—peers who have levels of internalizing behavior that are similar to their own, but that adolescents' mood is influenced by that of their friends.

Other Risk Factors

Although much of the research on adolescent behavior and depressed mood has focused on family and peer predictors, researchers have also examined the impact of poor social support from other contexts. Sameroff *et al.* (1993) and Werner and Smith (1982) found that adolescents without extended social networks (e.g., other adults prominent in their lives) were more likely than adolescents who had other adults in their lives to exhibit more negative outcomes. In addition, Greenberger *et al.* (1998)

found that those adolescents who had a very important nonparental adult (“VIP”) in their life who engaged in problem behavior were more likely to engage in such behaviors themselves. These VIP effects were independent of the effects of parents’ and friends’ behavior. Based on the finding that adolescents tend to associate more closely with peers whose mood-state is similar to their own (Hogue and Steinberg, 1995), it is also possible that youths are more likely to select or associate with VIPs whose mood-state is similar to their own. Thus, depressive symptoms in key adults in their lives may constitute a risk factor for adolescents’ own experience of depressed mood.

Finally, as researchers and practitioners know well, research has consistently demonstrated an association between gender and adolescent problem behavior and depression, with adolescent males exhibiting more problem behavior and adolescent females experiencing more depressive symptoms (see, e.g., Achenbach *et al.*, 1991; Colton *et al.*, 1991; Nolen-Hoeksema, 1987).

Protective Factors for Problem Behavior and Depression

In contrast to research on risk factors, systematic research on protective factors has not been extensive—especially, with respect to adolescents’ depressive symptoms. Nonetheless, seminal work by Jessor *et al.* (1995), Rutter (1987), and Werner and Smith (1992), among others, has afforded important insights about factors that reduce risk for problem behavior—and to a lesser extent, depressed mood. Factors that have been linked to lower adolescent involvement in problem behavior include others’ *sanctions* and attitudes toward such behavior—for example, the attitudes of parents, peers, and VIPs (Brook *et al.*, 1998; Greenberger *et al.*, 1998; Iannotti and Bush, 1992; Kumpfer and Turner, 1991). In these and other studies, sanctions from specific others (e.g., parents, peers) often made statistically independent or additive contributions to the explanation of problem behavior.

Protective factors that have been related to better affective outcomes in adolescents include the presence of warm and supportive people in adolescents’ lives. In a longitudinal study, Ge *et al.* (1994) demonstrated that youths who received higher parental warmth in childhood were less likely to exhibit depressive symptoms in adolescence. Chiu *et al.* (1992) found that parental warmth was the only family variable of those evaluated that contributed uniquely to psychological well-being, with greater perceived warmth associated with greater well-being. Warmth and support of *nonparental* adults also has been

found to be associated with better psychological adjustment in adolescents (Werner and Smith, 1982).

The Present Study

This study focuses on risk and protection in a high school sample of California adolescents who were at about-average risk for involvement in problem behavior and depressed mood. Specifically, achievement test scores of youths were within 1–3 percentile points of students in other schools in California on tests of reading, mathematics, and language. The participating school had a somewhat lower percentage of families (10%) receiving AFDC (Aid to Families with Dependent Children) than the average school in the state (18%) (California Department of Education, 1999).

Our first aim was to determine whether the models of problem behavior and depressive symptoms that we constructed on the basis of previous research findings were, in fact, outcome-specific: that is, does the “depression model” predict depressive symptoms better than does our model for explaining problem behavior? does the proposed problem-behavior model predict involvement in problem behaviors better than the proposed depression model?

The second objective was to examine the unique contributions of risk factors from different socioecological contexts (family, peer, and VIP) to the explanation of variation in adolescent problem behavior and depressive symptomatology. Following recent developments in the risk literature, we aggregated risk factors separately for each context (see Plan of Analysis).

Third, we examined whether protective factors from different socioecological contexts (family, peer, and VIP) lowered the extent of adolescents’ involvement in problem behavior and depressive symptoms, across all levels of risk.

Fourth and finally, we investigated whether protective factors within a given context buffered adolescents against high risks from that context (e.g., does parental warmth and acceptance moderate family-based risks for depressive symptoms), and also whether protective factors within one context (e.g., the peer group) buffered youths against high risks emanating from *other* contexts (e.g., the family).

METHOD

Participants

Participants in the study were 243 11th graders from a greater Los Angeles high school ($M_{age} = 16.6$ years,

57% female). The sample was representative of the ethnic diversity of this metropolitan area: 54% European American, 16% Latino, 12% Asian American/Pacific Islander, 10% mixed ethnicity, and 8% African American. Modal education for mothers was a high school diploma, and for fathers, vocational or technical school, with 23% of mothers and 28% of fathers having a college degree or higher. The majority of the sample (52%) came from intact families; 20% were living with a parent and stepparent; another 20% lived in single-parent households; and 8% lived in other household arrangements.

Procedure

Data were collected from adolescents by means of a confidential self-report survey that was administered by the researchers during a 50-min class-period at school. Prior to survey administration, the researchers made a class presentation to students about the purposes of the project (briefly, to better understand the lives of adolescents today), and letters were sent to parents if their adolescent expressed interest in participating in the project. Active consent of adolescents and their parents was obtained prior to survey administration. Of the 300 enrolled 11th graders, 243 (81%) participated in the study.

Outcome Measures

The measure of *Adolescent Problem Behavior* was developed from similar problem behavior lists used in other major studies of adolescent development (Arnett and Balle-Jensen, 1993; Chen *et al.*, 1998; Feldman *et al.*, 1991; Fletcher *et al.*, 1995; Greenberger and Steinberg, 1986; Steinberg *et al.*, 1991), with additional items generated by the researchers. Multiple contexts of problem behaviors were assessed, including risk taking (“drove under the influence of alcohol,” “deliberately went someplace I knew was dangerous”), school-related deviance (“cheated on a test”), substance use (“smoked marijuana”), status offenses (“ran away from home”), physical aggression (“hit or threatened to hit someone”), vandalism (“painted graffiti on walls”), theft (“took something from a store without paying for it”), and other forms of problem behaviors (e.g. lied, forged a signature). Respondents indicated whether they had done these things “never,” “once or twice,” “three or four times,” or “more often” during the past 6 months.

Depressive Symptoms were assessed by the CES-D scale (Radloff, 1977, 1991). Adolescents reported the frequency of symptoms over the past month (e.g., “I could not get going”) on a 5-point scale ranging from “never” to “always.”

Table I. Descriptive Statistics for Major Study Variables

	Number of items	Score range	M	SD	Cronbach's alpha ^a
Outcome measures					
Problem behavior	44	1–4	1.40	0.36	0.92
Depressive symptomatology	20	1–5	2.04	0.50	0.89
Family risk					
Parental education	1	0–1	0.05	0.22	—
Family structure (not intact)	1	0–1	0.48	0.50	—
Number of negative family events	16	0–16	3.38	2.25	—
Adolescent–parent conflict	12	1–4	1.88	0.57	0.85
Perceived parental behavior	7	0–1	0.15	0.16	0.61
Perceived sibling behavior	7	0–1	0.14	0.19	0.69
Perceived parental depressive symptoms	3	0–1	0.36	0.36	0.71
Perceived sibling depressive symptoms	3	0–1	0.31	0.30	0.60
Peer risk					
Number of negative peer events	6	0–6	2.05	1.36	—
Childhood aggression	2	1–3	1.20	0.38	0.60
Low childhood peer acceptance	1	0–1	0.16	0.36	—
Perceived friends' behavior	10	1–3	1.73	0.47	0.88
Perceived friends' depressive symptoms	3	1–3	1.73	0.51	0.77
VIP risk					
Perceived VIP's behavior	7	0–1	0.13	0.16	0.59
Perceived VIP's depressive symptoms	3	0–1	0.22	0.30	0.65
Family protection					
Perceived parental sanctions	11	1–3	2.73	0.31	0.85
Perceived parental warmth	11	1–6	4.29	1.02	0.89
Peer protection					
Perceived friends' sanctions	11	0–1	0.46	0.28	0.82
VIP protection					
Perceived VIP's sanctions	11	0–1	0.80	0.23	0.86
Perceived VIP support	16	1–4	2.62	0.67	0.91

^aAlpha coefficients were not computed for several life events measures because such events are relatively independent of one another.

Table I summarizes information about these 2 scales (number of items, sample means and standard deviations, and alpha coefficients) and about the measures of risk and protective factors that are described immediately below. Risk and protective assessments were scales used in

previously published research or adaptations of existing scales.

Measures of Family Risk

Parental education was indicated by respondents' checking 1 of 5 categories for each parent, ranging from "9th grade or less" (1) to "Master's or professional degree" (5). Based on the literature that showed parental education as a risk factor only when it is less than the completion of high school (Greenberg *et al.*, 1999), parental education was recoded subsequently as "high school education or higher" (0) versus "less than high school education" (1). For the core analyses of this study, the higher of the 2 parents' level of educational attainment was used. Lower parental education was treated as a risk factor for both problem behavior and depressive symptoms.

Respondents also described their current *family structure* and household composition. Responses were recoded as "intact family" (biological parents still married and adolescent living with them) scored (0) versus "other," scored (1).

A measure of stressful life events similar to those used in other studies (Compas, 1987; Wills *et al.*, 1992) provided information about exposure to stressful events that occurred during adolescence. Examples of items on the *negative family life events* subscale included "severe arguing between parents," "serious illness or death of a parent," and "parents' job/income loss." The total score for this subscale was the number of "yes" responses.

Adolescent-parent conflict was assessed by a scale that included arguments about school-related issues, chores, friends, money, personal habits, and family relations, among others. Respondents indicated the frequency of disagreements during the past month on a scale ranging from "never" to "all the time." The validity of this measure is supported by positive correlations with Moos and Moos's Family Conflict Scale (Moos and Moos, 1986; see Greenberger and Chen, 1996).

Perceived parental behavior and perceived sibling behavior were assessed by means of a representative subset of items from the Adolescent Problem Behavior Scale. Respondents indicated, on separate but identical subscales, whether their parents and siblings had engaged in acts of physical aggression, theft, and substance use during the past 6 months. The number of "yes" responses was summed to create total scores for perceived parental behavior and perceived sibling behavior. (For previous research using these measures, see Greenberger *et al.*, 1998.)

Adolescents also reported their perceptions of *parental depressive symptoms* and *siblings' depressive symptoms* during the past month, by answering "yes" or

"no" to identical, 3-item measures comprising of items from the CES-D (and used in earlier research by Greenberger *et al.*, 1998). Based on the literature, we included the following measures in the models for both problem behavior and depressive symptoms: negative family events, parental education, family structure, and adolescent-parent conflict. Perceived parental behavior and perceived sibling behavior (2 measures reflecting potentially problematic activities) were included only in the problem behavior model, whereas perceived parental depressive symptoms and perceived siblings' depressive symptoms were included only in the depressive symptoms model.

Measures of Peer Risk

Number of negative peer events during adolescence was assessed via items such as "a close friend moved away," "had a serious falling-out with a close friend," and "a romantic relationship ended." The total score was the number of "yes" responses on the 6 items of the subscale.

Childhood aggression toward peers was the average of 2 items: (a) the frequency of arguments with friends ("I usually got along well with friends," "I sometimes argued with friends," and "I always got into arguments with other children," scored 1–3, respectively) and (b) the frequency of physical aggressiveness toward others (rarely/sometimes/often "hit other children," also scored 1–3). Once again, the elementary school years was the time frame respondents were asked to consider.

Low peer acceptance during childhood was assessed by respondents' indicating which of the following statements was true: "I had many friends" (coded "0") or "I did not have many friends" (coded "1").

Perceived friends' behavior within the past 6 months was reported on a checklist that included items identical to those on the analogous scales for parents and siblings (see preceding section) and an additional 3 items concerning school-related misconduct that were part of the Adolescent Problem Behavior Scale completed by the adolescent participants in this study.

Perceived friends' depressive symptoms were assessed with the same measure used to reflect adolescents' perceptions of family members' depressive symptomatology (see Family Risk section, above). Respondents were asked to indicate whether "none" (0), "some" (1), or "many" (2) of their friends had "acted depressed" or given other indications of depressed mood, and scores for the 3 items were summed.

Number of negative peer events and low peer acceptance were included in the models for both problem behavior and depressive symptoms. Perceived friends' behavior

and childhood aggression were included only in the former model, and perceived friends' depressive symptoms were included only in the latter model.

Measures of VIP Risk

The existence of a very important adult person (VIP) in respondents' lives was assessed through a series of questions. Participants first were asked to consider whether they had an "important adult" in their lives other than a parent—"someone at least 21 years old who has had a significant influence on you or whom you can count on in times of need." To stimulate participants' thinking on this topic, we provided examples of possible VIPs, such as an aunt, grandparent, teacher, or older friend. Eighty-eight percent of participants ($N = 213$) identified a VIP. For subsequent screening purposes, we asked participants to rate the importance of the above-mentioned person in their lives on a 5-point scale marked "not really all that important," "somewhat important," "important," "very important," or a "truly key person" for them. Fifteen respondents (6%) who rated their VIP below the level of "important" were recoded as not having a VIP. A total of 198 individuals were thus considered to have a VIP, nearly three-quarters of whom considered their VIP to be either "very important" or a "key" individual in their lives. Approximately half of the VIPs were kin-group members; half were nonkin individuals.

Perceived VIP behavior was assessed using items identical to those on the analogous scales for parents and siblings. Adolescents responded "no" (0) or "yes" (1) to each item and a summary score was formed. *Perceived depressive symptoms of VIP* was assessed using a measure identical to that for parents and siblings (see Family Risk section, above).

The VIP behavior measure was incorporated into the model for adolescent problem behavior, whereas the VIP depressive symptoms measure was included in the model for adolescent depressive symptoms. Because of an extensive literature on gender and its impact on internalizing and externalizing behaviors (Achenbach *et al.*, 1991; Nolen-Hoeksema, 1987), we also incorporated gender (male = 1, female = 2) into both models, with the expectation that being male was a risk factor for problem behavior and being female was a risk factor for depressive symptoms.

Protective Factors

Five measures of protective factors could be derived from the data set available for this study. They included measures relevant to the family, peer, and VIP-related contexts of adolescent development.

Perceived parental sanctions, perceived friends' sanctions, and perceived VIP's sanctions were assessed via identical items. Items were drawn from the previously described Adolescent Problem Behavior Scale and represented all categories of behavior surveyed by that measure. Adolescents recorded their perceptions of parents' likely reactions to various types of misconduct (e.g., "if you drank alcohol frequently") on a scale marked "would not care," "would be somewhat upset," or "would be very upset." These responses were coded as "1," "2," and "3," respectively. For comparable measures of VIP and peer sanctions, adolescents reported whether they thought their VIP and friends "would disapprove of" (scored "1"), "not say anything," or "would approve of" the adolescent's misconduct. The latter 2 responses were scored "0."

Parental warmth and acceptance was assessed by means of a scale with items such as "My parents let me know they really care about me" and "My parents like me the way I am; they don't try to 'make me over' into someone else." This scale is positively correlated with Moos and Moos's Family Cohesion Scale (Greenberger and Chen, 1996; Moos and Moos, 1986).

A measure of *perceived VIP support* was adapted from Barrera *et al.*'s (1981) Inventory of Socially Supportive Behaviors, which comprises items that reflect both instrumental and emotional support (Barrera *et al.*, 1981). Adolescents reported the frequency during the past year with which the VIP had done such things as "helping me understand why I did not do something well" and "providing me with a place to stay" (1 = "never," 2 = "once or twice," 3 = "three or four times," 4 = "more often").

Measures of perceived sanctions (parents', peers', and VIP's) were included in the model for problem behavior; measures of perceived parental warmth and perceived VIP support were included in the model for depressive symptoms.

As Table I indicates, alpha coefficients for the scales assessing protective factors were quite high (0.82–0.91); alphas for risk factors pertaining to parents and friends showed a greater range (0.59–0.85) and tended to be lowest with respect to measures of perceived parents' and VIPs' involvement in potentially problematic behavior. Taken together, mean values on the various scales and items that reflect risk and protection suggest that adolescents in this sample came from relatively positive and prosocial current contexts.

Plan of Analyses

Correlational analyses were conducted to provide an initial picture of the association between risk and protective factors and each outcome measure. In the ensuing

regression analyses, all previously identified risk factors except gender were grouped into 1 of 3 social contexts (family, peer, or VIP). The creation of such context-specific cumulative risk indices, which was justified by the literature on cumulative effects of risk factors that was reviewed earlier, provides us an opportunity to focus on the examination of cross-context interactions. Participants received a cumulative or *summary risk score* for each context, based on the mean of their standardized scores for each of the component risk factors. To avoid any artificial inflation in the number of risk factors because of highly correlated variables, we first examined the correlation matrices among the risk factors. Results showed that correlations among the several risk measures within any given context were quite modest, suggesting that our procedure did indeed result in accumulating substantially different (i.e., independent) sources of risk in the various contexts.⁵

Interaction terms reflecting a single risk context and a single protective factor (e.g., peer risk for problem behavior and parental sanctions) were tested 1 at a time, after main effects had been entered. In total, we tested 9 interactions for problem behavior and 6 interactions for depressed mood.

In the regression analyses described throughout the remainder of this paper, we substituted sample means for missing data on sibling- and VIP-related measures. This strategy enabled us to retain 27 cases that would have been lost because the respondent had no siblings and 45 cases that would have been dropped because they did not have a VIP. Because of the potential for increased Type I error as a result of missing value replacement, any significant interactions involving VIP variables were reanalyzed with the 45 cases excluded to get a more conservative estimate of such interactions.

RESULTS

Zero-Order Correlations Between Risk and Protective Factors and Measures of Problem Behaviors and Depressive Symptoms

Table II presents correlations between all risk and protective factors and the 2 outcomes that are central to this study. This information provides an initial picture of the data and is relevant, additionally, to the divergent

⁵Within the family risk context, correlations averaged 0.17. The highest correlation was that between family structure and negative or stressful family life events during adolescence, $r = 0.41$, $p < 0.001$. Within the peer risk context, correlations averaged 0.14. The highest correlation was that between perceived problem behaviors and perceived depressive behaviors of friends, $r = 0.30$, $p < 0.001$.

Table II. Correlation of Risk and Protective Factors With Problem Behavior and Depressive Symptomatology^a

Predictors	Dependent variable	
	Problem behavior	Depressive symptomatology
Family risk		
Parental education	-0.08	0.09
Family structure (not intact)	0.21***	0.17**
Number of negative family events	0.17**	0.34***
Adolescent-parent conflict	0.31***	0.48***
Perceived parental behavior	0.14*	0.10
Perceived sibling behavior	0.25***	0.21**
Perceived parental depressive symptoms	0.14*	0.42***
Perceived sibling depressive symptoms	0.07	0.26***
Peer risk		
Number of negative peer events	0.20**	0.28***
Childhood aggression	0.11	0.08
Low childhood peer acceptance	-0.01	0.30***
Perceived friends' behavior	0.62***	0.25***
Perceived friends' depressive symptoms	0.09	0.49***
VIP risk		
Perceived behavior of VIP	0.42***	0.14*
Perceived depressive symptoms of VIP	0.01	0.27***
Family protection		
Perceived parental sanctions	-0.44***	-0.13
Perceived parental warmth	-0.17**	-0.47***
Peer protection		
Perceived friends' sanctions	-0.54***	-0.10
VIP protection		
Perceived VIP's sanctions	-0.30***	-0.05
Perceived VIP support	-0.17**	-0.25***

^aCorrelations that were predicted a priori are highlighted in bold. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

validity of our models of problem behaviors and depressive symptoms (discussed below). Inspection of Table II indicates that the majority of variables hypothesized to be associated with each outcome measure, were significantly correlated: 11 out of 14 correlations in the case of problem behaviors and 11 out of 12 correlations in the case of depressive symptoms. All hypothesized associations, whether significant or not, are shown in bold-face type in this table.

Outcome-Specificity of the Models for Problem Behaviors and Depressive Symptoms

In order to examine the outcome-specificity, or divergent validity, of our overall models of risk and protection for problem behaviors and depressive symptoms, we compared the results of regression analyses in which we

Table III. Outcome-Specificity in the Predictions of Problem Behavior and Depressed Mood (Total % Variance Explained)

Predictors	Dependent variable	
	Problem behavior	Depressive symptomatology
Risk and protective factors for problem behavior ^a	49 ^b	42
Risk and protective factors for depressed mood ^c	14	49 ^b

^aThe list of variables include gender, 3 risk factors for problem behavior (i.e., family risk, peer risk, and VIP risk), 3 protective factors for problem behavior (i.e., perceived parental sanctions, perceived peer sanctions, and perceived VIP sanctions).

^bSee Tables IV and V for the details of these 2 models.

^cThe list of variables include gender, 3 risk factors for depressed mood (i.e., family risk, peer risk, and VIP risk), 2 protective factors for depressed mood (i.e., perceived parental warmth and perceived VIP support).

“predicted” each of these outcomes from the “outcome-specific” model we had devised *and* from the model devised to predict the other outcome. For example, we regressed problem behaviors on gender, the 3 summary risk factors for problem behaviors, and the 3 protective factors that are theoretically relevant to problem behavior, and then reran the analysis substituting the risk and protective factors for depressive symptoms. The same procedure was followed with respect to the prediction of depressive symptoms. Results of these analyses supported the divergent validity of our models of problem behavior and depressive symptoms (see Table III). The outcome-specific model for problem behavior accounted for 49% of the variance in problem behavior; in contrast, the model for depression accounted for only 14% of the variance in problem behavior. The outcome-specific model for depressive symptoms explained 49% of the variance in symptoms, whereas substitution of the model for problem behavior accounted for 42% of the variance in depressed mood.

Direct Effects of Risk and Protective Factors on Outcomes

To test our 2nd research question—Do risks located in the familial, peer, and VIP contexts contribute uniquely to problem behavior and depressed mood?—we conducted hierarchical regression analyses in which summary risk scores for each of the 3 contexts were included. The outcome-specific models detailed in the Measures section (see also Table II) were the ones used in these analyses. On the 2nd step of the analyses, protective factors relevant to each of the 2 models were added (3 such factors

Table IV. Regression of Problem Behaviors on Risk and Protective Factors

	Regression equations			
	Model 1		Model 2	
	β	<i>t</i>	β	<i>t</i>
Step 1				
Gender (1 = male, 2 = female)	-0.24	-4.40***	-0.13	-2.54*
Family risk total	0.11	1.86	0.03	0.61
Peer risk total	0.35	6.12***	0.28	5.48***
VIP risk total	0.32	5.83***	0.22	3.78***
Step 2				
Perceived parental sanctions	—	—	-0.20	-3.78***
Perceived peer sanctions	—	—	-0.31	-5.46***
Perceived VIP sanctions	—	—	0.03	0.45
<i>R</i> ²		0.37		0.51
Adj. <i>R</i> ²		0.35		0.49
		<i>F</i> (4, 231) = 32.58***		<i>F</i> (7, 231) = 32.72***

* *p* < 0.05; *** *p* < 0.001.

in the problem behavior model and 2 in the depression model). The inclusion of protective variables in this manner affords a test of the *direct or main effects* model of protection, according to which the presence of protective factors reduces the impact of risk factors on the targeted outcome measure across all levels of risk.

Adolescent Problem Behavior

Analyses revealed that of the 3 summary measures of risk included on Step 1 of the model for problem behavior (Model 1, Table IV), 2 risk factors made unique contributions: peer risk and VIP risk (*ps* < 0.001). Together, gender and the 3 aggregate risk factors accounted for 35% of the variance in problem behavior, *F*(4, 231) = 32.58, *p* < 0.001. Each of the aggregated risk measures remained significant when protective factors were added to the model (Model 2, Table IV), but the previously substantial gender effect was somewhat reduced. Inclusion of the protective factors yielded an additional 14% to the explained variance in problem behavior, with perceived parental sanctions and perceived peer sanctions each contributing uniquely to the explanation of problem behavior (both, *ps* < 0.001). Additional post hoc regression analyses, in which peer sanctions and parental sanctions were successively eliminated from Model 2, revealed that the gender effect on problem behavior was largely accounted for by differences in the level of perceived peer sanctions. Adjusted *R*² for the total equation (Model 2) was 0.49. In summary, being male and

Table V. Regression of Depressive Symptoms on Risk and Protective Factors

	Regression equations			
	Model 1		Model 2	
	β	t	β	t
Step 1				
Gender (1 = male, 2 = female)	0.17	2.94**	0.18	3.31***
Family risk total	0.34	5.28***	0.21	3.40***
Peer risk total	0.33	5.23***	0.29	4.96***
VIP risk total	-0.01	-0.16	-0.04	-0.68
Step 2				
Perceived parental warmth	—	—	-0.36	-6.53***
Perceived VIP support	—	—	0.10	1.87
R^2	0.39		0.51	
Adj. R^2	0.38		0.49	
	$F(4, 208) = 33.63***$		$F(6, 208) = 34.65***$	

** $p < 0.01$; *** $p < 0.001$.

having peer and VIP contexts that include more risk for problem behavior each is associated with more adolescent involvement in misconduct. In the presence of these and other risk factors, having parents and peers who are perceived as reacting more negatively to misconduct reduced adolescents' involvement in problem behavior.

Depressive Symptoms

Analyses showed that gender and 2 of the 3 summary risk measures contributed uniquely to the variance in depressive symptoms: family risk and peer risk (see Table V, Model 2). Together, the 3 summary risk factors and gender explained 38% of the variance in depressive symptoms, $F(4, 208) = 30.43$, $p < 0.001$. The 2 protective factors associated with depressive symptoms accounted for an additional 11% of explained variance. Parental warmth contributed significantly to the variance in depressive symptoms. Adjusted R^2 for the overall model was 0.49. In summary, adolescents reported greater depressive symptomatology if they were female and had parents and friends whom they perceived as having symptoms. Having parents who were perceived to be warm and accepting reduced the level of depressed mood.

Protective Factors as Buffers Against High Risk

The 4th research question of this study pertains to whether adolescents at *high* risk for problem behavior and/or depressed mood “do better” if they have high

levels of protective factors, either within the *same* or *other* risk-contexts.

Problem Behavior

Tests of the 9 interactions (i.e., between 3 risk-aggregates and 3 protective factors) revealed 5 significant buffering effects. Results of all interaction tests are shown in Fig. 1. In only 1 of 3 *within-context* instances did a protective factor buffer adolescents against risk. This occurred within the peer context, where the Peer Risk \times Peer Protection interaction was significant, $\beta = -0.20$, $p < 0.001$, as was the increment in R^2 , $F_{\text{inc}}(1, 229) = 18.27$, $p < 0.001$. In contrast, 4 of 6 *cross-context* interactions for problem behavior were significant. Accordingly, the R^2 increments for each of these 4 cross-context interactions also were significant. The significant cross-context interactions were Family Risk \times Peer Sanctions, $F_{\text{inc}}(1, 229) = 4.48$, $\beta = -0.10$, $p < 0.05$; Peer Risk \times Parental Sanctions, $F_{\text{inc}}(1, 227) = 6.30$, $\beta = -0.13$, $p < 0.05$; VIP Risk \times Peer Sanctions, $F_{\text{inc}}(1, 229) = 10.90$, $\beta = -0.17$, $p < 0.001$; and Peer Risk \times VIP Sanctions, $F_{\text{inc}}(1, 229) = 4.63$, $\beta = -0.12$, $p < 0.05$. The addition of the interaction term did not reduce the significance of the main effects in any of the 5 significant interactions. Furthermore, in only 1 instance did the protective factor added in Step 2 reduce the main effect of the risk factor—specifically, when peer sanctions was added to the model, family risk was reduced to nonsignificance.

Because 2 of the significant interactions involved VIP factors, the data were reanalyzed after the exclusion of the 45 cases without VIPs (see Plan of Analysis). Results showed little change in the regression coefficients and their significance level: VIP Risk \times Peer Sanctions, $\beta = -0.17$, $p < 0.001$, and Peer Risk \times VIP Sanctions, $\beta = -0.13$, $p < 0.05$. In other words, the replacement of missing values did not bias the results.

To summarize, having *peers* who disapproved more strongly of misconduct moderated the effects on problem behavior of risk emanating from *all three* risk contexts. Additionally, perceiving parents and VIPs as more disapproving of misconduct each moderated the effects of high peer risk for problem behavior.

Depressive Symptoms

Only 1 of the interactions between risk-aggregates and protective factors was significant. The buffering effect was observed within the family context; that is, low, but not high levels of parental warmth protected adolescents from exhibiting depressive symptoms themselves when family risk was high, $\beta = 0.14$, $p < 0.01$.

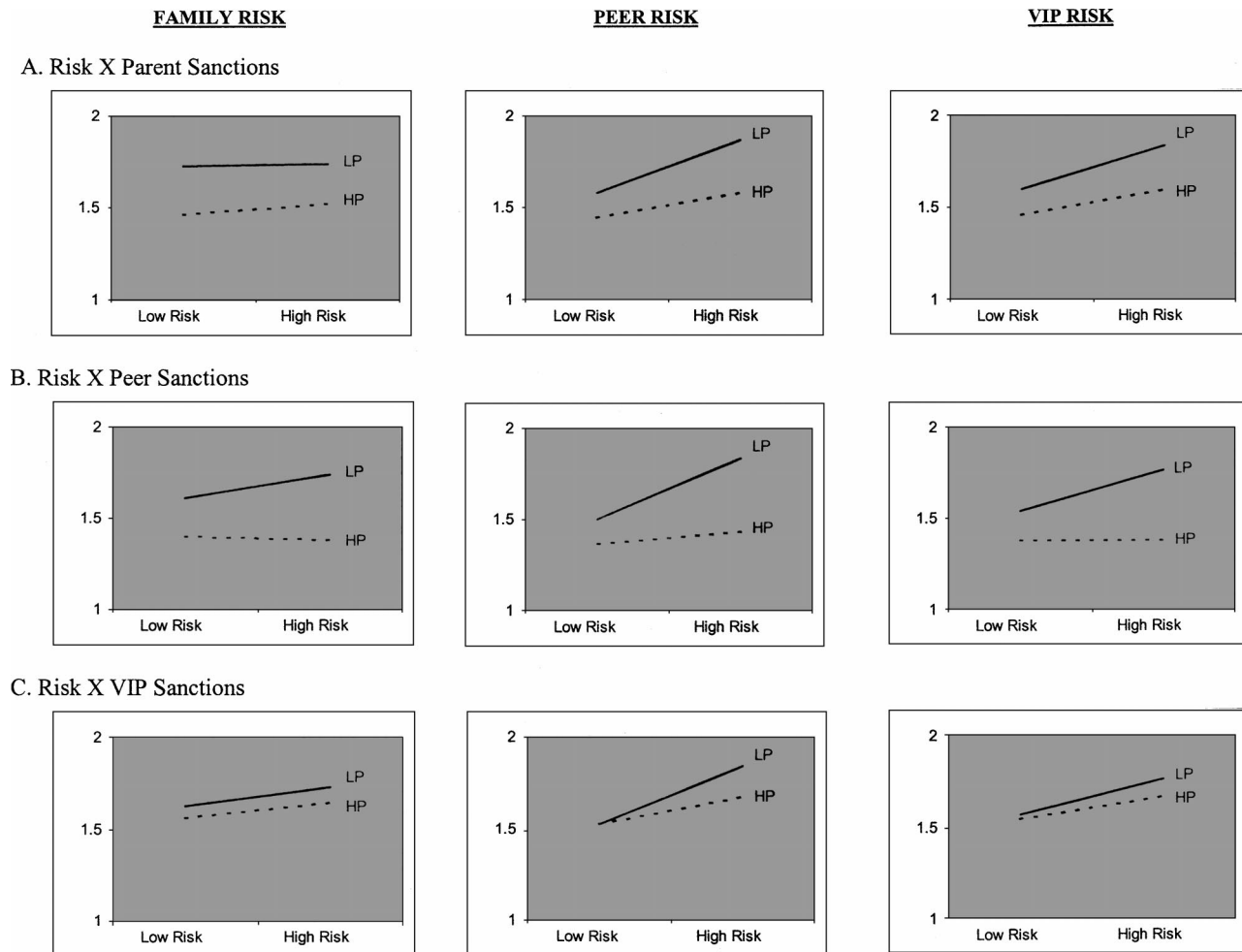


Fig. 1. Within and cross-context interaction effects of Risk × Protective Factors on problem behavior. Shown in the graphs are regression lines for “low protection” (LP, 1 SD below the mean) and “high protection” (HP, 1 SD above the mean).

DISCUSSION

As Bronfenbrenner (1979) and others have argued, development occurs in a variety of social and cultural contexts, and events that occur in those contexts have the potential to affect human outcomes at all points in the life span. The present study provides an opportunity to view adolescent problem behavior and depressive symptomatology—2 common occurrences in adolescents’ lives—from a contextual perspective. Regression analyses using aggregated or summary measures of risk for several contexts showed that multiple contexts of risk contributed independently to both misconduct and depressed mood, and that protective factors reflecting different socioecological contexts also contributed independently to these outcomes. In short, the more *different* contexts of risk, the poorer adolescents’ psychosocial

outcomes; and the more *different* sources or contexts of protection, the better their outcomes. Finally, results of this study revealed a number of instances in which a protective factor (i.e., sanctions against misconduct) buffered youths at high risk for problem behavior. As readers familiar with the literature know, buffering effects (additional mitigation of negative outcomes among individuals at high risk) are less often found than simple direct effects of protective factors (the equivalent reduction of a negative behavioral outcome across individuals at all levels of risk); thus, our findings for problem behavior are noteworthy. Interestingly, most of these buffering effects occurred across rather than within contexts, and all buffering effects involved peer factors. In contrast to problem behavior models, there were no buffering effects across contexts for depressive symptoms. There was, however, a within-context interaction for

depressive symptoms. We discuss these and other issues below.

Contextual Approach

Regression analyses that focused on problem behavior showed that risk from 2 contexts—the individual's peer group and nonparental VIP—made unique contributions to the explained variance in problem behavior. The absence of an independent effect of family risk on problem behavior may be due to the relatively low correlations with problem behavior of several of the component measures of this risk context (see Table II, first column) and to shared variance with other contexts. The absence of a “family” risk effect contrasts with the Greenberg *et al.* (1999) findings for 1st graders, but in addition to the much younger age-group in that study, their investigation differed in other important respects from the current investigation. The absence of a unique family risk effect in the current study is consistent, in spirit, with other research that shows a decreasing influence of family variables on depressed mood over the course of adolescence (Greenberger and Chen, 1996) and the ascendance of peer over family influences on problem behavior (Jessor and Jessor, 1977). In contrast, perceived parental sanctions against misconduct did serve a protective function. They not only had an added, direct effect on involvement in problem behavior, but also buffered youths with high peer-context risk for misconduct.

With respect to the influence of peers, it is quite striking that perceived peer *sanctions* had as strong an association with adolescents' level of misconduct (actually, somewhat stronger) as did the level of risk within the peer context (compare beta coefficients, Table IV, third column): More negative peer sanctions against misconduct were associated with lower involvement in such behavior, whereas higher peer risk for misconduct was associated with greater involvement. If this finding seems somewhat puzzling, recall that the peer risk aggregate is composed of *several* factors—not just peer involvement in misconduct. Also, adolescents may have multiple peer groups or friends with diverse behavioral habits and attitudes. As a result, the peer group may speak with more than one voice. The finding that peer sanctions also buffered youths from risk for problem behavior within the family and VIP contexts provides further evidence of the power of protective factors within the peer group.

Another important finding of these analyses concerns the role of VIP risk-attributes for adolescents' behavior. In light of the scant literature on the effects of VIPs and mentor-like adults on adolescent development, it is

important to note that the magnitude of the direct “effect” of VIP risk on adolescents' level of involvement in misconduct was on par with that of peer risk (see standardized beta coefficients, Table IV, column 1). Moreover, perceived VIP sanctions buffered youths from high risk emanating from the peer context of development. The role of key nonparental adults in adolescents' lives clearly merits further investigation. We comment next on the study's findings regarding adolescents' depressive symptomatology.

In the case of depressive symptoms, family risk and peer risk for depression again explained much of the variance among study participants. Thus, despite considerable difference among the indicators that comprised the aggregate indices of family and peer risk factors for problem behavior and depressed mood, measures of the higher level constructs (i.e., “contexts”) retained similar importance for the 2 psychosocial outcomes. In addition, protective factors from the family context contributed independently to the explanation of mood: Greater parental warmth was associated with reporting fewer depressive symptoms.

Finally, in clear contrast to problem behavior, the presumed protective factors—namely, parental warmth and acceptance and VIP support—did not buffer youths at high risk for depressive symptomatology from various contexts. However, parental warmth was found to buffer the effects of family risk on adolescents' depressed mood, but in the negative direction. That is, when family risk was high, *low* levels of parental support buffered the effects of risk on adolescents' depressed mood. Our finding supports the finding presented in Gore and Aseltine's study: Specifically, their study showed that low levels of family support protected adolescents from the effects of negative family events (Gore and Aseltine, 1995). These congruous findings suggest that adolescents who experience stressful home conditions may reap mental health benefits by distancing themselves from their family's problems.

In contrast to our findings for problem behavior, our tests of cross-context interactions for depressed mood revealed very little. In addition, although Gore and Aseltine (1995) reported 9 significant interactions (8 buffering effects, 1 other) for depressive symptoms, closer examination revealed that only 2 of these interactions were significant at the $p < 0.01$ level. Given that 25 statistical tests were conducted for possible interactions with a sample size greater than 1000, these interactions were actually quite modest. All in all, the 2 studies do not provide clear and convincing evidence for cross-context buffering effects for depressive symptoms. However, the idea that adolescents who experience high risk in the family context may fare better if they are able to disengage from their family's problems is worth investigating in future studies of depressed mood.

Limitations of the Study

The major limitations of this study are that all data were obtained from a single source (11th-grade adolescents), and that several measures are based on retrospective report. Additionally, adolescents were asked to report their perceptions of others' behaviors and symptoms: namely, problematic behaviors and depressive symptoms. It is possible—even likely—that adolescents who have more depressive symptoms or greater involvement in problem behavior might be biased in the direction of perceiving important others (family members, friends, VIPs) as similarly involved or afflicted. On the other hand, it is critical to recognize that adolescents' perceptions, regardless of their possible inaccuracies, function as important components of their cognitive and behavioral systems and may be as or more likely than the "actual" behavior of others to influence adolescents' behavior and well-being (Brown *et al.*, 1986). Although the limitations of this study—especially, common method variance across the measurement of risk and protective factors—almost surely have led to an overestimation of the explained variance in problem behavior and depressive symptoms, this shortcoming is presumably distributed approximately equally across contexts. Thus, the message that specific contexts of risk "matter," that various protective factors "matter," and that the accumulation of these indices of risk and protection are consequential for adolescents' psychosocial outcomes remains valid.

Future Directions

Results of the present study suggest that researchers who utilize aggregate indices of risk based on different contexts (as opposed to those who use single indices of risk and protection) may be better able to detect significant cross-context interactions between risk and protective factors. Further research in this area would be enhanced by inclusion of multiple measures of risk from additional contexts that are important in adolescents' lives (e.g., neighborhood, school, culture) and by the inclusion of additional protective factors emanating from these contexts. As noted earlier, the role of nonparental VIPs, as sources of risk and protection, clearly merits the further study this topic seems to be eliciting (Greenberger *et al.*, 1998). Because adolescents already have much life-experience, the inclusion of more protective factors that reflect strengths of the individual seems especially urgent. In addition, risk/protection interactions *across* contexts should be further explored. From both broad societal and specific interventionist perspectives, it is encouraging to think that risks from one context may be offset by protection from other contexts. Program planners and policy

experts who have the objective of reducing adolescents' involvement in problem behavior may find both comfort and challenge in this idea.

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