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Resilience is not a unidimensional construct: Insights from a prospective study of inner-city adolescents

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Abstract

The maintenance of high social competence despite stress was examined in a 6-month prospective study of 138 inner-city ninth-grade students. The purpose was to provide a replication and extension of findings derived from previous cross-sectional research involving a comparable sample of children. Specifically, goals were to examine the extent to which high-stress children with superior functioning on one or more aspects of school-based social competence could evade significant difficulties in (a) other spheres of competence at school and (b) emotional adjustment. Measurements of stress were based on uncontrollable negative life events. Competence was assessed via behavioral indices including school grades, teacher ratings, and peer ratings, and emotional distress was measured via self-reports. Results indicated that high-stress children who showed impressive behavioral competence were highly vulnerable to emotional distress over time. Furthermore, almost 85% of the high-stress children who seemed resilient based on at least one domain of social competence at Time 1 had significant difficulties in one or more domains examined when assessed at both Time 1 and Time 2. Findings are discussed in terms of conceptual and empirical issues in resilience research.

As empirical research on childhood resilience in the face of stress gathers momentum, increasingly sophisticated research designs are being used. Prospective studies, for example, have built upon preliminary cross-sectional findings in studying stress resistance among school-age and early adolescent children (e.g., DuBois, Felner, Brand, Adan, & Evans, 1992; Dubow & Tisak, 1989; Dubow, Tisak, Causey, Hryshko, & Reid, 1991). Although inner-city teenagers are a group at extremely high risk for a range of behavior problems (Farrington, 1987; Snyder & Patterson, 1987), there have been relatively few attempts to systematically study resilience in this group. The goal of this study was to use short-term longitudinal data to build upon initial exploratory findings (Luthar, 1991) in investigating aspects of resilience among socioeconomically disadvantaged high school students.

Internalizing Symptoms and Resilience

In contemporary research on children, resilience has typically been defined in terms of success in meeting developmental tasks or societal expectations, as reflected in overt, behavioral indices such as school grades and ratings by teachers, peers, and parents (Luthar

& Zigler, 1991). The assumption underlying this operational definition is that manifest competence usually reflects good underlying coping skills (Garmezy & Masten, 1986, 1991).

Recent empirical evidence has indicated, however, that among high-risk children, those who are behaviorally competent are not necessarily well adjusted on indices of emotional adjustment (Luthar & Zigler, 1991). To illustrate, in a recent study on children of depressed parents, Radke-Yarrow and Sherman (1990) reported that although some children seemed to be surviving relatively well (e.g., in terms of academic success), even these “survivors” showed considerable vulnerability to depression. Vulnerability to internalizing symptoms or physical health problems has been found among manifestly competent individuals in other high-risk situations as well, including children who have been maltreated (Farber & Egeland, 1987) and among the high-risk sample followed longitudinally by Werner (Werner & Smith, 1982, 1992).

An empirical attempt to investigate emotional distress among apparently resilient inner-city adolescents was recently reported (Luthar, 1991). In that study, levels of internalizing symptoms were compared among socially competent high-stress youth and other groups defined on the basis of high versus low life stress and social competence. Findings indicated that “resilient” youth (high stress, high social competence) were significantly more depressed than children who were highly competent but from low-stress backgrounds. More disconcerting, however, were findings that the resilient children were comparable in levels of internalizing symptoms to children who, like themselves, had high life stress but who exhibited extremely poor levels of overt, behavioral competence.

Evidence of high emotional distress underlying apparently successful coping can have important implications for understanding childhood resilience. In the context of inner-city adolescents specifically, however, several aspects of Luthar’s (1991) initial analyses indicate the need for additional exploration of the issue. First, in the analyses reported, measurements of stress were based on negative life events and included events that could have been under the child’s control (e.g., failing a grade, frequent arguments with parents). Therefore, a confound was potentially introduced between measures of stress and outcomes of emotional distress (see Masten et al., 1988). This issue was addressed in the present study by operationalizing stress using a count of only uncontrollable life events, such as death of a friend or parental divorce.

A second factor indicating the need for further research on this topic is the small number of individuals involved in the earlier findings. The approach adopted was to examine symptoms among adolescents at the upper and lower extremes of both stress and behavioral competence, a strategy that led to the use of less than a quarter of the sample in the analysis (Luthar, 1991). This considerable loss of data could be circumvented by using continuous data-analytic strategies. Thus, in the present study, regression analyses were used to examine the issue of manifest resilience and underlying symptoms, with a focus on interactions between stress and different competence indices in predicting symptom levels.

The prospective design of this investigation constituted another dimension in terms of attempts to extend previous research findings. Although even prospective analyses (which control for initial adjustment) cannot conclusively demonstrate causal links between variables, they provide a stronger basis for causal inferences than do cross-sectional analyses (see Pedhazur, 1982). Of central interest in the prospective analyses conducted here was whether or not children who maintain high overt competence despite high stress at one point in time are vulnerable to high emotional distress later in the academic year.

Resilient Functioning Across Adjustment Domains

Apart from showing varied functioning across overt and covert indices of adjustment, apparently resilient children may show different profiles of success even *within* the broad domain of overt social competence. For example, research has shown that factors that serve protective functions for a particular social competence domain may have very different ramifications for other spheres of competence (Masten et al., 1988). Similarly, performance across domains of school-based social competence (e.g., academic success, peer perceptions) has been found to show weak associations among inner-city adolescents (Luthar, 1991).

While correlation-based analyses such as those already cited may be construed as suggesting that resilient children vary in success across competence domains, this is not necessarily the case. For example, research has shown that as compared to children low on peer popularity, popular children show less variability across different adjustment domains. As a group, these children have been found to be less diverse in their ratings on measures of teacher-rated and self-rated depression, conduct problems, and negative interactions with peers (Vosk, Forehand, Parker, & Rickard, 1982). Thus, it is possible that resilient teenagers do, in fact, show relatively high stability across adjustment domains and that the low interdomain correlations previously achieved with overall samples arise from high variability among the “average” or nonresilient children. At this time, there have been few attempts at systematically assessing the degree of stability across domains of competence shown by high-risk children who display resilience in a particular sphere.

A second broad aim of this study, therefore, was to use a “pattern” or individual-based approach (Magnusson & Bergman, 1988) in examining the extent to which at-risk teenagers can show successful coping across different spheres. Of interest here were both overt competence indices and covert indices of emotional functioning. Spheres of manifest adjustment were those pertaining to social competence in the school setting and included assessments of academic achievement, classroom behaviors as rated by teachers, and peer perceptions. Covert adjustment indices examined in this study included self-reported levels of depression (previously examined (Luthar, 1991) in the context of manifest resilience) as well as the broader symptom patterns associated with both internalizing and externalizing forms of symptomatology.

Hypotheses

To summarize, the goal in this 6-month prospective study was to build upon previous cross-sectional findings (Luthar, 1991). Using a sample similar to that utilized in the earlier research, the following hypotheses were examined.

1. Among apparently resilient children — those who show high social competence despite high stress — overt stress resistance will not be paralleled by superior adjustment at high stress on covert indices as well, that is, indices related to self-reported emotional distress.
2. Although high-risk children may appear resilient based on success in one or more social competence domains, many of these children are likely to show significant difficulties in (a) other spheres of social competence as well as (b) domains of emotional adjustment.

Methods

Sample characteristics

In recruiting the sample for this study, procedures used were similar to those utilized in the earlier investigation (Luthar, 1991) that provided a basis for this inquiry. The previous study involved 144 students drawn from 10 ninth-grade classrooms in an inner-city school. In the school sampled, students were placed in five “gate” levels with curricula of varying difficulty, and two classes were randomly selected from each gate level.

In the present study, use of similar sampling procedures led to the recruitment of a total of 164 ninth-grade students to participate in initial or baseline assessments. Eighty-four of the students were girls and 80 were boys. The mean age of the sample was 15.2 years ($SD = 1.0$), and 85% of the children belonged to minority groups, including 41% African Americans, 30% Hispanics, and 7% Asians. According to the Hollingshead Two-Factor Index of Social Position (Hollingshead & Redlich, 1958), the mean socioeconomic status for families was 51.2 ($SD = 14.3$), which falls in the second lowest of the five Hollingshead categories.

Complete data were obtained for 92% of the students in the classes sampled at Time 1. Four students refused to participate, four were absent all 3 days of data collection, and seven were eliminated due to incomplete data. At Time 2, 26 children from the Time 1 sample were not included, leaving a prospective sample of 138 children (76 girls, 62 boys). Of the 26 missing children, 15 had dropped out of school, 6 were absent all days of data collection, 2 had moved away from the area, 2 had changed classes, and 1 refused to participate.

Measure of stress

Negative life events were measured with the Life Events Checklist (LEC; Johnson & McCutcheon, 1980), which was administered to assess major life events experienced during the previous 6 months. This measure consists of 46 events, along with four spaces for respondents to report events not specifically listed. Children are asked to indicate the specific events that occurred in their lives, whether each event experienced was seen as

being undesirable (negative) or desirable (positive), and the extent to which the events impacted their lives. Because summations of unit scores (each event weighted 1) are as highly correlated with dependent variables as are summed impact ratings (Johnson & Bradlyn, 1988; Johnson & McCutcheon, 1980), simple counts of life events were used in this study. Acceptable levels of test–retest reliability, convergent validity, and discriminant validity have been reported for both positive and negative experiences among adolescent samples (Brand & Johnson, 1982; Johnson, 1982).

Eighteen of the items on the LEC represent events over which a respondent would probably have little control (e.g., parents separated). These items are less likely to be confounded with indices of adjustment as compared to events such as failing a grade or losing a job (see Gersten, Langner, Eisenberg, & Simcha-Fagan, 1977; Masten et al., 1988). In this study, therefore, stress was operationalized based only on uncontrollable negative events.

Measures of competence

Teacher ratings—The Teacher–Child Rating Scale (T-CRS; Hightower et al., 1986) was given to English teachers of students in the sample. A 36-item scale, the T-CRS assesses behaviors within two domains, with three scores within each: problems (Acting Out, Shy–Anxious, and Learning) and Adjustment (Frustration Tolerance, Assertive Social Skills, and Task Orientation). Acceptable psychometric properties have been reported (Hightower et al., 1986).

Peer ratings—The Revised Class Play (RCP; Masten, Morison, & Pellegrini, 1985) was used to assess peer reputation. Among inner-city teenagers, RCP items have been found to fall into four major factors, two of which are negative (i.e., Aggressive–Disruptive and Sensitive–Isolated) and two positive (i.e., Sociability and Leadership (Luthar, 1991). Factor analyses with the present sample yielded results very similar to those previously reported. Four RCP scores were therefore developed based on the RCP. Masten et al. (1985) have reported adequate coefficients of reliability and validity for the RCP, and acceptable reliability and validity levels for scores used in this study have also been demonstrated (Luthar, 1990).

School grades—School records were used to ascertain grades. Marks collected for four academic courses were converted into grades using a grid developed by school officials, which made it possible to compare marks across the five gate levels (of varying curricula). Based on these four scores, mean grades were computed.

Measures of symptoms

Depression—The Children’s Depression Inventory (Kovacs, 1982), a 27-item self-report scale designed for school-age children and adolescents, was administered. Each item consists of three choices, with scores ranging from 0 to 2. This measure has acceptable levels of internal consistency (Kovacs, 1985) as well as criterion and concurrent validity (Saylor, Finch, Spirito, & Bennett, 1984).

Internalizing/externalizing symptoms—The Youth Self-Report Child Behavior Checklist (YSR; Achenbach & Edelbrock, 1987) was used to assess children's perceptions of overall symptoms in both the internalizing and externalizing domains. Items on the internalizing scale assess fearful, inhibited, and overcontrolled behaviors, whereas the externalizing scale items cover aggressive, antisocial, and undercontrolled behaviors. The YSR consists of 103 items rated on a 3-point scale. The internalizing scale is based on 44 items for males and 39 items for females. The externalizing scale is based on 38 items for males and 39 items for females. The scales are positively intercorrelated across entire samples of children (Achenbach & Edelbrock, 1987). Acceptable reliability and validity levels for the YSR are well documented (Boyle & Jones, 1985).

Procedure

Data were collected at two times in the same academic year, in November 1990 and May 1991. At each time of assessment, data involving a battery of assessments were collected during three 45-min class periods allocated for English, on 3 consecutive days. Testing of the children was done in groups of 10–20. The order of administration of questionnaires was the same for all groups and was similar to that used by Luthar (1991), with relatively nonthreatening measures (e.g., questionnaires on demographic data, the RCP) administered at the beginning and end of each session. To ensure maximal participation at each assessment time, an incentive of \$5.00 was offered to each student, and teachers were given \$1.00 for each student rating they completed.

Results

Data reduction

A principal component factor analysis with varimax rotation was performed on standardized peer- and teacher-rating scores for data reduction of competence variables. Results indicated three main factors, which together accounted for 72.5% of the total variance. Factor analyses conducted for Time 1 and Time 2 yielded similar results. Based on these analyses, three composite scores of competence were developed, with the following scoring operations (scales from which scores derive are in parentheses): *Assertive-Responsible* (T-CRS) = Frustration Tolerance + Task Orientation + Assertive – Shy-Anxious – Learning Problems – Acting Out; *Leadership* (RCP) = Leadership – Aggressive-Disruptive; and *Sociability* (RCP) = Sociable – Sensitive-Isolated. School grades comprised a fourth competence variable.

Sample attrition: Characteristics of dropouts

To assess whether or not subjects missing at Time 2 differed from those who remained, *t* tests were run on several indices. Subjects excluded at Time 2 were significantly older and had lower scores on Assertiveness, Leadership, and school grades. The groups did not differ on any of the other variables examined here.

Descriptive statistics

Correlations among stress (negative life events), competence, and self-reported symptoms at Time 1 and Time 2 are presented in Table 1. As seen in Table 1, uncontrollable stress was

positively related to all symptom measures but unrelated to competence indices. Among the competence variables, school grades and Assertiveness were strongly correlated, whereas Sociability and Leadership showed weaker correlations with the other competence indices. Finally, coefficients in the column at the extreme right of Table 1 reflect high stability of assessments of competence and moderator variables between Time 1 and Time 2.

Manifest resilience and underlying symptoms

The issue of internalizing symptoms among apparently resilient children was explored via hierarchical multiple regression analyses (J. Cohen & Cohen, 1975). This approach, recommended for designs that contain multiple independent variables, indicates the unique contribution of each predictor to the criterion, having taken into account the interrelationships between the predictors. The order in which variables are entered into equations is dictated by various considerations summarized by J. Cohen and Cohen (1975).

Separate analyses were conducted for depression, internalizing symptoms, and externalizing symptoms assessed at Time 2, and all predictor variables were those assessed at Time 1. Gender, followed by age, were the first variables entered in the equations, being “fixed” factors that cannot be affected by other independent variables. Time 1 scores on the outcome variable in question were entered next, to control for initial levels of symptoms. Given the focus of this research on social competence, the four competence indices were entered next (Steps 4–7), with their entry being allowed to vary in order of decreasing tolerance (Tabachnick & Fidell, 1989). Environmental variables were entered next, with socioeconomic status (Step 8) taking precedence over negative life events (Step 9) since social status is presumably less changeable than is life stress. Finally, Steps 10–13 included four interaction terms between stress and each of the four competence variables. Again, order of entry was determined by decreasing tolerance.

In these analyses, the interaction terms were of special interest in terms of the central question addressed. For example, if, in fact, manifestly resilient children were unaffected by high stress in the domain of emotional distress as well, these children would not differ markedly in levels of distress when compared to high-competence children exposed to low life stress. On the other hand, the low-competence children, with no apparent attributes of stress resistance, would presumably show greater distress in association with increasing stress.

Results of the regressions are presented in Table 2. As seen in Table 2, Time 1 symptoms accounted for the bulk of total variance explained in the equations (43–58%). In the context of interaction effects, the term involving stress and Sociability in predicting depression was significant at $p < .05$. Two other effects — that is, stress and Sociability for internalizing symptoms, and stress and Assertiveness for externalizing symptoms — achieved borderline significance at $p < .10$.

To interpret the interaction effects, simultaneous regression equations were solved following procedures adopted in similar studies (Garmezy, Masten, & Tellegen, 1984; Luthar, 1991). Results of these interactions, presented in Figures 1A–1C, indicated that rather than showing stress resistance on emotional indices, high-stress children who were high on indices of

social competence at Time 1 showed substantially higher levels of symptoms at Time 2 than their high-competence peers who had low levels of stress. Since the analyses on which these results are based controlled for Time 1 symptoms, the outcome variables represent “change” scores. Thus, the data suggest *increases* in symptoms over time among apparently resilient children or those who show high levels of social competence despite high life stress.

Consistency across domains in apparently resilient functioning

The second major hypothesis of this study involved identifying the subset of children who, at Time 1, seemed resilient, based on high life stress and high competence on one or more domains of functioning at school. The question of interest here was, how many of these children were able to evade significant difficulties in other domains examined? To examine this issue, the sample was divided into thirds based on high, medium, and low levels of uncontrollable life stress.¹ Similarly, children were categorized into the upper, middle, or lower thirds of the distribution on each index of social competence as well as symptomatology.

Comparisons across domains among apparently resilient children are presented in Figures 2A–C. As shown in Figure 2A, a total of 34 of the 138 children in the overall sample fell in the upper third of life stress scores, and of these, 25 could be classified as “resilient” based on superior functioning on at least one of the four domains of social competence. As shown in the next bar in this figure, however, 15 of these 25 apparently resilient children were on the *lower extreme* on any one of the indexes of social competence, leaving only 10 children who excelled in one domain with *at least average performance* in other facets of overt competence. Furthermore, as shown in the next bar, 4 of the 10 remaining children exhibited difficulties in the realm of emotional adjustment, with levels of self-reported symptoms in the upper extreme. When the six remaining children were assessed at Time 2, only four — approximately 15% of the originally identified resilient group of 25 — remained competent in at least one domain, with no significant difficulties in any of the other spheres.

The statistical significance of trends in Figure 2A was examined by using Poisson distribution statistics that apply to small numbers (Kleinbaum, Kupper, & Muller, 1988). The values along the lines connecting pairs of bars represent the probabilities of significant differences in the numbers associated with the two bars. Thus, in Figure 2A, there is a 99.9% likelihood ($p < .001$) of a significant reduction in moving across groups of (a) high-stress children, who are in the upper third on one social competence domain, and (b) the subset of these children, who, in addition, show at least average adjustment in other domains of overt competence. When groups with additional exclusionary criteria were considered (i.e., absence of high symptomatology and at least average adjustment at Time 2), the probabilities of finding significant decreases from the number of initially identified resilient children (25) was even higher, $p < .0001$. As shown in Figure 2, the trends found among the “resilient” youngsters did not differ appreciably from those in the rest of the sample, that is, children with medium or low levels of life stress. In each case, most children who did well in some domains showed difficulties in other spheres.

¹Alternative methods of grouping children based on high/low stress and competence (e.g., using median splits, based on quartiles, or 1 SD above/below group means), yielded results similar to those reported.

Gender differences in sustaining high resilience

The trends in Figure 2 suggest that among children high in competence, the ratio of females to males was somewhat higher in the high stress as compared to the other groups. This impression was examined by conducting 2 (Gender) $\times$ 3 (Stress) ANOVAs on the proportions, after subjecting the values to arcsin transformations (see Winer, 1971). Results are presented in Table 3. The first main effect for gender in Table 3 reflects the fact that across stress groups a significantly higher proportion of girls (61 of a total of 76) were high in competence on one or more domains of competence, as compared to the proportion of boys (41 of 62), who were highly competent on one domain.

When considering children who were competent in one or more domains without significant difficulties in any domain, however, this main effect was no longer significant. On the other hand, a significant interaction term was obtained. This effect indicated that among the children who met the more stringent criteria for competence, the proportion of girls (39%) was higher than that of boys (9%) at high levels of stress, whereas the proportions of competent girls and boys were similar at both medium (18 vs. 26%) and low (25 vs. 19%) levels of stress.

When considering the next two exclusionary criteria (i.e., the absence of high self-reported symptoms at Time 1 and the absence of significant difficulties across domains at both assessment periods), both main effects and interaction effects were no longer significant. Thus, the apparent ability of girls to “better weather” high stress levels than boys was not supported when these additional criteria were considered.

Discussion

Results of this study provide empirical support for suggestions (Luthar, 1991, 1993) that resilience is not an all-or-none phenomenon. Although some high-risk children do remarkably well in terms of meeting societal expectations on one or more domains of competence, many of these children exhibit difficulties in other spheres of adjustment. The major findings of this study are each discussed in turn, along with their implications for definitions of resilient functioning.

Manifest functioning and emotional resilience

In studies such as this one, evidence that “emotional stress resistance” accompanies overt, manifest resilience could be gleaned via interaction terms in statistical analyses. Such evidence would be seen, for example, if children who retained high social competence at high life stress did not differ appreciably in distress when compared to other competent youngsters who had faced low stress levels. Conversely, less competent children — those without any attributes suggesting resilience — would presumably show greater distress at high as opposed to low levels of stress. In this study, however, relatively few significant interaction effects were found. Those that were obtained indicated that children who appeared resilient based on manifest competence often showed high levels of self-reported symptomatology. The present findings are consistent with previous data (Farber & Egeland, 1987; Luthar, 1991; Radke-Yarrow & Sherman, 1990; Werner & Smith, 1992) indicating

that children who overtly seem to have coped successfully with risk may, in fact, experience considerable emotional distress. Results of this study indicate, further, that apparently resilient adolescents can show *increases* in levels of emotional distress over time.

Interestingly, the interaction effects obtained in this study consistently indicated that adolescents with poor peer and teacher ratings showed more symptoms at *low* than at high levels of stress. In this context, it is possible that youngsters with low behavioral competence despite relatively benign life circumstances were those who had broad syndromes of adjustment problems and, thus, reported unusually high levels of symptomatology (e.g., see Magnusson & Bergman, 1988). Conversely, the surprisingly low levels of self-reported symptoms among the low social competence children at high stress may reflect, among other processes, tendencies to use defenses of denial or avoidance in the face of difficulties in multiple spheres (i.e., negative life events as well as social competence at school).

Consistency across domains of apparently resilient functioning

While previous research has suggested that some at-risk children who cope well overtly may be emotionally troubled, results of this study establish, in addition, that apparently resilient youth may often have significant difficulties even within the broad domain of social competence. Using individual-based analysis, it was found that, among the high-stress children classified as resilient based on scores in the upper third on one or more domains of school-based competence, 60% were in the lowest third of the distribution on one of the other areas of school-based competence. When considering problems in social competence as well as emotional difficulties at both Time 1 and Time 2, only about 15% of the 25 children originally classified as resilient still earned that label. Moreover, the trends in the resilient group were found to be no different from those among the more “average” children; in each case, there was a highly significant decrease in the number of children who showed superior functioning with increases in the number of domains considered. In summary, the findings confirmed the hypothesis that while some high-risk children may seem resilient based on one domain of competence they often exhibit significant difficulties in other areas.

Individual-based analyses on gender trends dovetailed with the preceding findings. Just as high-risk children who did well in one sphere were often found to show deficits in others, analyses of gender trends indicated that the “efficacy” of a particular protective attribute (gender) decreases with increases in the number of adjustment domains considered. Thus, female gender was found to serve protective functions when only overt indexes of school-based competence were taken into account. Yet, when considering difficulties in the emotional realm as well as those across overt and covert domains at Time 2, the proportions of high-competence children without significant difficulties was very small in both gender groups, so that protective effects associated with being female were no longer significant.

Implications

Since adolescents can be highly competent on a particular index of adjustment and be fairly troubled in other domains, what might be the appropriate criteria to label a youngster as resilient? In selecting among multiple indices to operationalize resilience, various

conceptual strategies might be considered. It has been suggested, for example, that the term *resilience* be used to represent a circumscribed construct reflecting behaviorally manifested successful coping, regardless of the presence of any emotional distress (Luthar, 1991). Difficulties even with this circumscribed definition are indicated by the present findings, which show a considerable lack of consistency of performance among high-risk children across domains of manifest competence at school. Still greater inconsistency across domains would undoubtedly be found if assessments included overt functioning in areas other than school (e.g., in the family, community, or intimate relationships), each of which could reasonably be argued as being crucial in assessing adolescent resilience.

An alternative strategy in operationalizing resilience is to select a “critical” set of outcomes with reference to the particular type of risk confronted (Luthar, 1993). For instance, the maintenance of socially responsible behaviors may be targeted among children at risk for conduct disorder, whereas the absence of clinically significant internalizing symptomatology may be the focus among children at familial risk for affective disorders. In each case, other outcome variables could provide additional information on children’s adjustment levels.

Yet another option to be considered is one that has been widely used in studying social competence among adults, which is to consider composite scores across different domains of social competence. The Premorbid Social Competence Index, developed by Zigler and Phillips (1960), involves assessments on different dimensions important to effective coping in adult life, including education, occupation, employment history, and marital status. The rationale is that while each of these domains taken individually captures only a small part of what is considered successful coping in adulthood, when considered together, they provide a broad benchmark of personal and social maturity (Zigler & Glick, 1986). In a similar vein, in studying child resilience, it may be useful to explore the usefulness of continua of scores reflecting levels of success aggregated across different domains of competence. Additional analyses might focus on individual domains of interest.

Whichever strategy is used to select outcomes in determinations of resilience, there is clearly a need for researchers to focus not only on positive adaptation to stress but also on the difficulties that frequently coexist with high functioning in some spheres. Careful consideration of these issues is crucial from the perspectives of both theory and social policy. In the context of theory/research, it is clear that resilience cannot be treated as a unidimensional construct. A more fine-grained approach needs to be adopted in studying resilience, with specification, for example, of the particular domains (e.g., academics, peer relations, symptomatology) of resilience fostered by particular risk/protective factors. Similarly, in the context of interventions, data in this study indicate the need for heightened vigilance to the needs that some at-risk children may have, even as they function remarkably well in some domains of overt competence.

Limitations and conclusions

Limitations of this study include a problem inherent in all prospective research, that is, subject attrition. As has been demonstrated elsewhere (Lefkowitz, Eron, Walder, & Huesmann, 1977), in this sample, subjects with relatively low levels of adjustment were more likely than others to be absent at the time of follow-up.

Other potential limitations of this study are (a) the relatively short period of time over which the two assessments were conducted and (b) limitations associated with sample size. The use of a 6-month design was guided in part by previous evidence (Cohen, Burt, & Bjorck, 1987) indicating that the prospective effects of adolescent life stress are best studied over periods of approximately 6 months; the use of longer intervals has, in fact, been considered to constitute methodological limitations of life-stress studies (Cohen et al., 1987). However, in light of recent evidence (e.g., DuBois et al., 1992) of significant life-stress effects over a period of 2 years, in the future, it would be useful to examine issues explored here via prospective studies conducted over a longer period of time. It would also be useful to explore gender differences in vulnerability to emotional distress among manifestly resilient youth. The sample size in this study, along with the number of variables in the regression equations, precluded separate analyses by gender.

In conclusion, results of this study are consistent with insights from previous research involving a comparable sample of inner-city adolescents (Luthar, 1991). Findings from both studies indicate that disadvantaged youth who appear resilient — on the basis of high social competence despite extremely stressful life circumstances — may often be at risk for difficulties in some spheres of adjustment even as they cope remarkably well in others. Attempts to identify systematically what helps some children cope well with stress is of unquestionable value. As we laud the fortitude of spirit of some high-risk children, however, let us not do them the disservice of overlooking the needs many of them have in different spheres of their lives.

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Figure 1.

Interactions between stress and peer-rated competence in predicting changes in self-reported symptoms: prospective analyses. Competence and stress are based on assessments at Time 1. Outcome variables are Time 2 scores on internalizing symptoms, externalizing symptoms, and depression, and in the analyses, the same scores at Time 1 are controlled for.

Figure 2.

Profiles across domains among children who showed superior competence, by stress group. The first bar in each graph represents the number of children in the groups based on stress levels. The rest of the bars represent frequencies of these children with cumulative exclusionary criteria: (a) the number with high scores on one or more social competence (SC) domains; (b) the subset of these children who were also not in the lowest third on any of the other SC indices; (c) those who were also not in the highest third on any self-reported symptoms, and (d) those who also showed no significant difficulties across domains at Time 2 (T2). The figure at the top pertains to apparently resilient (high stress, high competence) children; other groups are presented for comparison purposes.

Table 1

Intercorrelations of stress, competence, and symptom variables: Times 1 and 2

	Cross-Sectional									Time 1 With Time 2
	1.	2.	3.	4.	5.	6.	7.	8.	9.	
1. Assertiveness										.74***
2. Leadership	.15									.71***
	.30**									
3. Sociability	.00	-.16								.76***
	-.07	-.19*								
4. School grades	.67***	.23**	-.15							.84***
	.70***	.33***	-.15							
5. Socioeconomic status	-.02	.16	-.05	-.12						—
	-.03	.04	-.05	-.07						
6. Depression	-.06	-.10	-.18*	-.02	-.02					.70***
	-.04	-.11	-.16	-.04	.14					
7. Internalizing symptoms	.07	.12	-.34***	.09	.02	.60***				.68***
	.11	.02	-.19*	.11	.06	.63***				
8. Externalizing symptoms	-.20*	-.27**	-.06	-.28**	.05	.49***	.53***			.75***
	-.05	-.30**	.03	-.20*	.09	.51***	.59***			
9. Uncontrollable stress	-.08	-.09	.06	-.13	.00	.15	.24**	.25**		.36***
	.00	-.21*	.03	.07	-.10	.09	.23**	.17*		
10. Overall stress	-.18*	-.18*	.09	-.21*	.02	.22**	.22**	.37***	.81***	.41***
	-.10	-.30**	.14	-.12	.04	.18*	.24**	.35***	.80***	

Note: Coefficients at Time 2 are presented in italics, below corresponding coefficients obtained at Time 1.

*
 $p < .05$.

**
 $p < .01$.

 $p < .0001$.

Table 2

Results of hierarchical regression analyses for the prospective prediction of depression, internalizing, and externalizing symptoms

Step	Predictor	Dependent Variable					
		Depression		Internalizing Symptoms		Externalizing Symptoms	
		F(Equation)	R ² Change	F(Equation)	R ² Change	F(Equation)	R ² Change
1	Gender	1.27	.01	4.84*	.04*	0.55	.00
2	Age	0.66	.00	2.63	.00	0.36	.00
3	Time 1 symptoms	44.24***	.50***	38.66***	.43***	60.84***	.58***
4-7	Competence indices ^a	18.83***	.00	16.60***	.01	25.83***	.00
8	Socioeconomic status	17.97***	.02*	14.76***	.01	22.64***	.00
9	Uncontrollable stress	16.05***	.00	13.12***	.00	20.02***	.00
10	Stress × Sociability	15.25***	.02*	12.26***	.01+	17.93***	.00
11	Stress × Leadership	13.80***	.00	11.24***	.00	16.17***	.00
12	Stress × Assertiveness	12.59***	.00	10.44***	.01	15.40***	.01+
13	Stress × School Grades	11.73***	.00	9.66***	.00	14.19***	.00
Total R ²			.56		.51		.61

^aIncludes Assertiveness, school grades, Leadership, and Sociability entered individually.

* $p < .05$.

*** $p < .0001$.

+ $p < .10$.

Table 3

Analyses of variance on proportions of competent girls versus boys considering different criteria of high competence

	Group			
	(A) High Competence, 1 SC Domain	(B) (A) + Not Low on Any SC Domain	(C) (B) + Not High on Any Symptoms	(C) + High SC, Not High Symptoms at Time 2
Gender	$F = 4.42^{***}$	$F = 1.67$	$F < 1$	$F < 1$
Gender $\times$ Stress	$F = 1.73$	$F = 4.52^{***}$	$F < 1$	$F < 1$

Note: Main effects for stress were not computed. Since allocation to the different stress levels were based on the top, middle, and bottom thirds of the distribution, no main effects were expected. SC = social competence.

 $p < .001$.