

Classifying At-Risk High School Youth: The Influence of Exposure to Community Violence and Protective Factors on Academic and Health Outcomes

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Using cluster analysis, 789 predominately Latino and African American high school youth were classified into varying academic at-risk profiles using self-reported levels of academic confidence, motivation to attend school, perceived family support, connections with teachers and peers, and exposure to violence. Six clusters emerged, 5 of which were identified as "at-risk." The clusters were examined in relation to academic stress, health status, grades, and school retention. Exposure to violence was one distinguishing feature of youth identified as most vulnerable, vulnerable, and resilient; however, youth identified as resilient recorded better academic outcomes.

Many youth growing up in low-income urban settings develop in positive ways despite having to face multiple challenges and hindering circumstances (Masten, Best, & Garmezy, 1990). Researchers studying the phenomenon of resilience have consistently identified protective factors at the individual and the relational levels that promote resilience in the face of risk from within the community, such as exposure to violence. Individual protective factors include competence characteristics such as self-efficacy, flexible coping strategies, and a sense of autonomy and responsibility (Masten et al., 1990). Relational protective factors include social support resources such as the presence of at least one caring adult, stable and consistent care, and structure and supervision (Egeland, Carlson, & Sroufe, 1993). Other relational factors include connections with teachers who provide guidance and act as role models and positive peer relationships (Masten et al., 1990).

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Although these protective factors allow many youth to maintain positive mental health and functioning, many other youth are negatively affected by encountering challenging life events associated with living in low-income communities and communities with higher violence rates. High school dropout rates, for example, are as much as 300% higher among poor youth (Lerner, 1995), and low-income urban youth face many ecological barriers and restraints that keep them from achieving their true potential (McLoyd, 1998). Low-income urban youth often experience high levels of psychological distress, leave high school prior to receiving a degree, and enter the world of work lacking the job skills necessary to obtain occupations offering livable wages (National Research Council, 1993). Many youth who display mental health and interpersonal difficulties are too often pushed out of high school (Beauvais, Chavez, Oetting, Defenbacher, & Cornell, 1996; Jessor, 1991).

The purpose of the current study was to evaluate whether the measurement of academic self-efficacy and internal motivation (individual protective factors); perceived family support, connections with teachers, and peers (relational protective factors); and exposure to violence (environmental factors) could be a means to effectively classify youth into different categories of academic risk. The individual and relational protective factors used in this study were drawn from three related theoretical areas: self-efficacy theory (Bandura, 1997), self-determination theory (Deci & Ryan, 1985), and diathesis-stress models (Cohen & Wills, 1985; Hobfoll, 1989). According to self-efficacy theory, individuals with stronger self-efficacy expectations experience better career, academic, and life outcomes (Close, 2001; Lent, Brown, & Hackett, 1994; Multon, Brown, & Lent, 1991; Torres & Solberg, 2001). Self-determination theory (Deci & Ryan, 1985) posits that youth who engage in school because it is perceived as meaningful and enjoyable record better grades than youth who do not find school meaningful and enjoyable because their motivation is internal as opposed to external (Close, 2001). Diathesis-stress models argue that health status is negatively affected by stressful life events unless mediated or moderated by social support and other protective factors. One important source of stress for low-income youth living in urban settings is exposure to violence. Research in this area clearly indicates the debilitating impact on health and academic outcomes of being indirectly and directly exposed to violence (Osofsky, 1995). Each of these theories and models argues that relational protective factors play an integral role in development. Self-efficacy theory argues that verbal persuasion experiences facilitate confidence beliefs; self-determination theory argues that relational connections facilitate development of internalized motivation beliefs; and diathesis-stress models emphasize the importance of availability of social support as a protective factor.

The current study follows Masten's (2001) recommendation that resilience research must move beyond assessing whether levels of higher reported protective factors result in better outcomes and focus instead on organizing individuals into categories based on shared levels of protective factors. Following her recommendations, the current study used cluster analytic techniques to classify youth into risk groups according to their levels of reported academic self-efficacy, internal motivation, perceived family support, connections with teachers and peers, and exposure to violence. Once classified, the groups were labeled according to the levels and patterns of shared protective factors and then these groups were

compared on the basis of whether they differed regarding concurrent (stress and health status) and subsequent outcomes (grades and retention). The current study was also designed to identify whether one or more of the categories would possibly constitute a group that could be identified as resilient. To be deemed resilient, the individuals constituting this group would have to report (a) high levels of both individual and relational protective factors and (b) high exposure to violence. In addition, the hypothesized resilient group would have to demonstrate more effective outcomes (i.e., grades and school retention) than groups reporting higher levels of violence exposure and lower levels of the individual and relational characteristics.

Cluster analysis is an exploratory method (Jobson, 1992) and therefore we identified no prearranged groups for the current study. We expected that youth in cluster groups reporting higher levels of individual and relational protective factors would report and record better grade and retention outcomes than would youth reporting lower levels of protective factors, regardless of exposure to violence level. Exposure to violence was expected to discriminate outcomes between cluster groups only when the reported individual and relational resilience characteristics were similar. If two cluster groups both reported higher individual and relational resilience characteristics, we expected that the group(s) reporting lower exposure to violence would also experience better outcomes than would the group(s) reporting higher exposure to violence. Alternatively, for groups reporting lower individual and relational protective factors, we expected that youth reporting lower violence exposure would also experience better outcomes than would group(s) with similar levels of reported protective factors but with higher levels of exposure to violence.

Method

Participants and Procedure

The sample consisted of 789 youth from an urban high school located in a low-income neighborhood of a large midwestern city. Data were collected with 9th-grade youth during each fall semester for 3 consecutive years, as well as with 10th-grade youth during Year 1 only. All classroom teachers who taught in the 9th grade (and 10th grade in Year 1) were invited to participate. Data collection occurred during the second period of 6 weeks of the fall term. Youth completed the School Experience Survey voluntarily in classroom settings.

The Year 1 cohort included 389 youth, the Year 2 cohort included 256 youth, and the Year 3 cohort included 144 youth. Of the 789 study participants, 376 participants were boys and 406 were girls (7 did not report gender). Of the participants, 67% self-reported as Latino American, 10% as African American, 8% as Asian American, 5% as Euro/Slavic (White), 5% as American Indian, and 5% as "other." The school was located in a section of the city where the average income was very low. The median income level in the zip code area surrounding the school was \$24,631, compared with \$43,791 for the state, and \$38,100 for the city (U.S. Census Bureau, 2000). Nearly 30% of the families in this zip code area were estimated to be living below the poverty line, compared with 8.7% in the state and 15.3% in the city, and 70% of the students attending the high school received free or reduced-price lunch.

Measures Used to Classify Youth Into Groups

Many of the variables used in the School Experience Survey were revised on the basis of previous research with college populations (Solberg et al., 1998) and subsequently were validated for use with high school youth (Close, 2001). Drawing from the School Experience Survey, the following measures were used to classify the youth into resilience groups.

High school self-efficacy. High school self-efficacy was assessed using the 22-item High School Self-Efficacy Inventory (Close, 2001), which is based on the College Self-Efficacy Inventory (Solberg et al., 1998). On an 8-point scale, ranging from 0 (*totally unconfident*) to 7 (*totally confident*), respondents indicate the degree to which they feel confident to successfully complete tasks relevant to succeeding in high school. The scale consists of three subscales: Performing in Class Self-Efficacy, Performing on Tests Self-Efficacy, and Performing in School Self-Efficacy. Coefficient alpha for the total scale using the current sample was .92.

High school intrinsic motivation. High school intrinsic motivation was assessed with the six-item Intrinsic Motivation subscale of the High School Motivation Scale, which is based on the Academic Self-Regulation Scale (Ryan & Connell, 1989). The High School Motivation Scale (Close, 2001) has four subscales: Intrinsic Motivation, Identified Regulation, Introjected Regulation, and External Regulation. On a 5-point scale, ranging from 0 (*very much untrue*) to 4 (*very much true*), respondents indicate the reasons that motivate them to keep coming to school. Coefficient alpha using the current sample was .74.

Perceived availability of family support. Perceived availability of family support was assessed with seven items based on the Social Provisions Scale (SPS; Russell & Cutrona, 1984), which I rewrote for use with high school respondents. On a 5-point scale, ranging from 0 (*strongly disagree*) to 4 (*strongly agree*), respondents indicate the degree of support they perceive from family. Coefficient alpha using the current sample was .74.

Teacher and peer connection. Teacher (five items) and peer (eight items) connection were assessed with items described in Solberg et al. (1998) and rewritten for use with high school respondents. On a 5-point scale, ranging from 0 (*strongly disagree*) to 4 (*strongly agree*), respondents indicate the degree to which they agree with statements about their high school. Coefficient alphas using the current sample were .77 for teacher connection and .76 for peer connection.

Exposure to violence. Exposure to violence was assessed with items from the Children's Report of Exposure to Violence (CREV; Cooley, Turner, & Beidel, 1994). The CREV has two subscales: Indirect Exposure to Violence (seven items) and Direct Exposure to Violence (seven items). On a 5-point scale, ranging from 1 (*no, never*) to 5 (*every day*), respondents indicate how frequently they have heard about or seen violence against familiar people (indirect) and experienced violence against themselves (direct). Coefficient alphas using the current sample were .87 for the Indirect Exposure to Violence subscale and .82 for the Direct Exposure to Violence subscale.

Measures Used to Evaluate Differences Between Cluster Groups

High school stress. High school stress was assessed with the 22-item High School Stress Scale, which is based on the College Stress Inventory

(Solberg et al., 1998). Respondents indicate, on a 5-point scale ranging from 0 (*never*) to 4 (*always*), the degree to which they had experienced difficulty within the past month on tasks relevant to high school life. The scale contains four subscales: Academic Stress, Financial Stress, Social Stress, and Seeking Help Stress. Coefficient alpha for the total scale using the current sample was .90.

Health status. Health status was assessed using the 22-item High School Distress Inventory (Close, 2001), which is based on the College Distress Inventory (CDI; Solberg et al., 1998). Respondents indicate, on a 6-point scale ranging from 0 (*never*) to 5 (*always*), the degree to which they had experienced symptoms of distress in the preceding week. There are five subscales: Agitation, Sleep Difficulty, Feelings of Anxiety/Depression, Eating Problems, and Physical Problems. Coefficient alpha using the current sample was .92.

Academic outcomes. At the end of the first semester, data on students' grade point average (GPA) and retention in school status were collected. First semester GPA was recorded on a 4.0 scale. Retention in school was determined by whether a student received a report card at the end of the semester or not (0 = did not receive report card, 1 = received report card).

Results

Identification of Clusters

Hierarchical cluster analysis (HCA) was used to classify youth into groups. HCA is an exploratory data reduction technique designed to create clusters (i.e., groups) when the number of clusters in the data sample is not known a priori, and in such a way that the profiles of participants in the same cluster are similar and the profiles of participants in different clusters are distinct (Jobson, 1992). The goal of using cluster analysis in the current study was to identify groups of youth who had similar profiles in terms of the levels of individual protective factors, social protective factors, and environmental challenges that the participants in each group faced. To achieve this goal, HCA was used, using Ward's method as the clustering method and squared Euclidean distance as the proximity measure.

On the basis of the number of variables included in the cluster analysis and previous resilience research (Masten, 2001), we hypothesized that there would be between three and seven meaningful clusters underlying the data sample. To guide our decision about the optimal number of clusters to retain, we examined changes in the agglomeration coefficients for the cluster solutions between three and six clusters. A large increase in agglomeration coefficients indicates that two dissimilar clusters were joined at that step in the clustering process, and, therefore, that the number of clusters at the previous step in the clustering process most likely represents the optimal cluster solution (Jobson, 1992). The change in agglomeration coefficients for the cluster solutions between three and seven clusters was equal for both the six- and the seven-cluster solution. Examination of the six- and seven-cluster solutions indicated that a six-cluster solution provided the most meaningful solution.

The means and standard deviations for the seven variables used to classify the participants into cluster groups are provided, by group membership, in Table 1. We conducted a one-way multiple analysis of

TABLE 1

Means and Standard Deviations for Variables by Cluster Group

Cluster Variable	Cluster Group											
	1		2		3		4		5		6	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Connections ^a												
Family	2.38	0.78	2.80	0.62	2.47	0.62	2.98	0.66	3.10	0.56	3.54	0.49
Teacher	1.74	0.83	2.21	0.71	2.38	0.67	2.90	0.76	2.85	0.56	3.30	0.48
Peer	1.97	0.58	2.15	0.59	2.41	0.62	3.05	0.60	2.98	0.37	3.28	0.46
Self-Efficacy ^a	3.85	1.20	4.69	0.84	4.24	1.08	5.29	0.88	4.88	0.75	5.63	0.71
Motivation ^a	0.99	0.87	2.54	0.67	2.11	0.59	3.16	0.59	2.80	0.69	3.21	0.62
Violence ^a												
Indirect	2.63	1.02	2.72	0.76	1.62	0.65	3.43	0.68	2.29	0.63	1.52	0.87
Direct	1.77	0.85	1.76	0.68	0.95	0.53	2.58	0.82	1.22	0.37	0.81	0.51
Concurrent validity ^b												
Stress	1.08	0.69	1.08	0.71	0.99	0.59	1.04	0.72	0.82	0.53	0.56	0.41
Health status	1.79	0.97	1.83	0.89	1.40	0.75	1.94	1.07	1.49	0.75	1.18	0.74
Predictive validity ^b												
GPA	1.25		1.61		1.88		1.76		1.96		2.54	
% retention	70		69		78		83		84		87	

Note. 1 = most vulnerable; 2 = vulnerable; 3 = disengaged; 4 = resilient; 5 = moderately resilient; 6 = not-at-risk; Family = perceived availability of family support, higher scores indicate higher perceived support; teacher = connection with teachers, higher scores indicate stronger perceived connections; social = connection with peers, higher scores indicate stronger perceived connections; efficacy = confidence in performing academic activities, higher scores indicate stronger perceived academic self-efficacy; motivation = intrinsic motivation, higher scores indicate stronger motivation to attend school because it is being perceived as enjoyable or meaningful; indirect and direct violence = exposure to violence, higher scores indicate higher perceived exposure; stress = academic pressure, higher scores indicate higher perceived academic stress; health status = health status, higher scores indicate higher perceived psychological and physical distress; GPA = end-of-semester grade point average; retention = student completing the semester.

^aVariables used to classify youth into groups. ^bVariables used to evaluate differences across group classification.

variance (MANOVA) to determine whether the groups differed regarding reported levels of perceived family support, teacher and peer connection, self-efficacy, intrinsic motivation, and indirect and direct exposure to violence. Significant multivariate, Wilks's lambda = .15; $F(35, 3270) = 54.55$, $p < .001$; $\eta^2 = .32$, and main effects were found for all seven dependent variables: perceived family support, $F(5, 783) = 66.42$, $p < .001$, $\eta^2 = .30$; teacher connection, $F(5, 783) = 91.76$, $p < .001$, $\eta^2 = .37$; peer connection, $F(5, 783) = 127.40$, $p < .001$, $\eta^2 = .45$; self-efficacy, $F(5, 783) = 62.91$, $p < .001$, $\eta^2 = .29$; intrinsic motivation, $F(5, 783) = 172.92$, $p < .001$, $\eta^2 = .32$; indirect exposure to violence, $F(5, 783) = 93.03$, $p < .001$, $\eta^2 = .37$; direct exposure to violence, $F(5, 783) = 116.06$, $p < .001$, $\eta^2 = .43$.

To evaluate differences in the resilience characteristics between cluster groups, we conducted post hoc multiple comparisons and used the significant differences obtained to describe each cluster in the following paragraphs. In addition, we graphed the standardized means for each variable to aid in the interpretation (see Figure 1). (Tables related to the post hoc comparisons and figures related to the standardized means

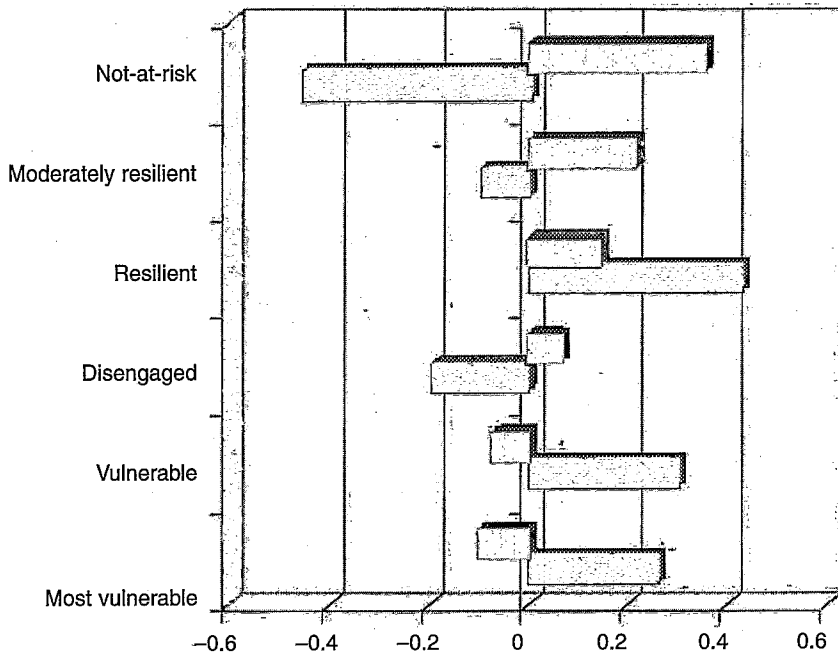


FIGURE 1

Comparison of Cluster Groups by End-of-Semester Grade Point Average (GPA) and Health Status

Key. = GPA = health status

are available from the first author.) Note that to make it easier to communicate the results, we arranged the six-cluster solutions according to hypothesized degree of academic risk, with Cluster 1 identified as most vulnerable and Cluster 6 identified as not-at-risk.

Cluster 1 comprised 113 youth and was titled most vulnerable. Youth in this cluster reported (a) significantly lower connections with teachers, self-efficacy, and intrinsic motivation than did youth in all other clusters; (b) significantly lower perceived family support and connections with peers than did youth in four other clusters; and (c) significantly higher levels of exposure to indirect and direct violence than did youth in three other clusters. The relatively high levels of reported exposure to violence combined with relatively lower reported connections with family, peers, and teachers and lower self-efficacy and motivation indicate that these youth may not enter high school with the resilience characteristics needed to manage expected challenges and therefore may be likely to report lower psychosocial functioning and to record lower grades and lower percentages of retention in school.

Cluster 2 comprised 124 youth and was titled vulnerable. Youth in this cluster reported (a) significantly lower connections with peers than did youth in four other clusters; (b) significantly lower connections with teachers, lower motivation, and greater exposure to indirect and direct violence than did youth in three other clusters; and (c) significantly lower perceived family support and lower self-efficacy than did youth in two other clusters. The relatively higher reported exposure to violence

when considered together with relatively lower connections with peers and teachers and lower motivation indicates that these youth may be vulnerable to the challenges associated with transitioning into high school.

Cluster 3 comprised 149 youth and was titled disengaged. Compared with the other five clusters, Cluster 3 was characterized as reporting (a) significantly lower perceived family support, self-efficacy, intrinsic motivation, indirect exposure to violence, and direct exposure to violence than four other clusters and (b) lower connection with teachers and peers than three other clusters. Whereas violence exposure was associated with lower reported connections, motivation, and efficacy for the most vulnerable and vulnerable groups, this cluster reported relatively lower resilience characteristics in the absence of reported exposure to violence. This cluster was described as disengaged because of the reported disconnection from family, peers, and teachers and on the basis of the theoretical framework suggesting that self-efficacy and motivation would develop through the establishment of such connections (Bandura, 1997; Deci & Ryan, 1985).

Cluster 4 comprised 71 youth and was titled resilient. Compared with the other clusters, it was characterized as reporting (a) significantly higher levels of indirect and direct exposure to violence than all other clusters, (b) higher self-efficacy and intrinsic motivation than four other clusters, (c) stronger connections with teachers and peers than three other clusters, and (d) higher perceived family support than two other clusters. Despite reporting the highest levels of exposure to violence, youth in this group also reported higher levels of many of the resilience characteristics. Although youth in this cluster reported greater life challenges associated with violence, they were identified as resilient because they also reported possessing high resilience characteristics.

Cluster 5 comprised 186 youth and was titled moderately resilient. Compared with the other clusters, it was characterized as reporting (a) significantly higher perceived family support, connections with teachers and peers, and motivation than three other clusters; (b) significantly higher self-efficacy than two other clusters; and (c) significantly higher exposure to indirect and direct violence than two other clusters. The cluster was described as moderately resilient because youth in this cluster indicated some elevation in violence exposure combined with relatively higher resilience characteristics.

Cluster 6 comprised 146 youth and was titled not-at-risk. Compared with the other clusters, it was characterized as reporting (a) significantly higher perceived family support and connections with teachers than all other clusters; (b) significantly higher connections with peers, self-efficacy, and intrinsic motivation than four other groups; and (c) significantly lower exposure to violence than four other groups. Youth in this cluster reported strong connections with teachers and peers, self-efficacy, and motivation, and no exposure to violence, indicating that they possessed none of the psychosocial risk identifiers expected to contribute to school difficulty.

Gender and Ethnicity Differences Across Clusters

Chi-square analysis evaluated gender and ethnicity differences in cluster membership. Results indicated no significant differences in cluster membership by gender, $\chi^2(5, N = 782) = 9.34, p = .077$. However, there were significant differences in cluster membership by ethnicity, $\chi^2(5, N = 785) = 74.72, p = .001$, with African American and Euro/Slavic American (White) students highly represented in the most vulnerable and vulnerable groups (42.7%, and 44%, respectively). Latino American students were most highly represented in the not-at-risk group.

Concurrent Validity

Academic stress and health status were also assessed as part of the School Experience Survey and served to validate whether the identified groups could be meaningfully differentiated as having different levels of academic risk. A one-way MANOVA evaluated differences between clusters for academic stress and health status (see Table 1), and the results indicated significant multivariate effects, Wilks's lambda = .78; $F(15, 2101) = 13.37, p < .001$; $\eta^2 = .08$, and main effects for high school stress, $F(5, 766) = 15.50, p < .001, \eta^2 = .09$, and health status, $F(5, 783) = 14.50, p < .001, \eta^2 = .09$. For academic stress, results indicated that youth in clusters classified as most vulnerable and vulnerable reported higher stress than youth in clusters classified as moderately resilient and not at-risk. Youth in clusters classified as disengaged, resilient, and moderately resilient reported higher stress than did youth in clusters classified as not-at-risk. For health status, results indicated that youth in clusters classified as most vulnerable, vulnerable, and resilient reported lower health status ratings than did youth in clusters classified as disengaged, moderately resilient, and not-at-risk. Moreover, youth in clusters classified as moderately resilient reported lower health status ratings than did youth in clusters classified as not-at-risk.

Predictive Validity

To further validate whether the clusters could be considered different academic risk groups, comparisons were made regarding end-of-semester grades and retention in school (see Table 1). One-way analysis of variance indicated significant differences in end-of-semester grades, $F(5, 617) = 11.43, p < .001, \eta^2 = .09$. Chi-square analysis was used to evaluate for differences in retention, and the results indicated that there were significant differences between the groups with respect to the percentage of youth who completed the semester, $\chi^2(5) = 23.02, p < .001$. Post hoc multiple comparisons indicated that youth in clusters classified as most vulnerable recorded lower GPAs for the semester than did youth in clusters classified as disengaged, moderately resilient, and not-at-risk. Youth in clusters classified as vulnerable, disengaged, resilient, and moderately resilient recorded lower grades than did youth in clusters classified as not-at-risk. For retention in school, youth in clusters classified as most vulnerable and vulnerable were less likely to complete the fall term than were youth in clusters classified as moderately resilient and not-at-risk.

Discussion

This study was designed to classify youth according to different degrees of academic risk based on a combination of internal (self-efficacy and internal motivation) and relational (perceived family support and connections with teachers and peers) protective factors and environmental challenges (exposure to violence). Using cluster analytic methods, six groups were identified (see profile summary in Table 2), five of which were hypothesized as academically at risk. Evidence for concurrent validity of being academically at risk was established by finding significant differences among the cluster groups for reported academic stress and health status. Evidence for predictive validity was established by finding significant differences among the cluster groups for end-of-semester grades and retention in school.

TABLE 2**Profile Summary of Groups' Distinguishing Characteristics**

Variable	Characteristic
Group 1: Most Vulnerable	Lower reported connections to teachers and peers Lower reported academic self-efficacy Lower reported intrinsic motivation Higher reported exposure to direct and indirect violence
Group 2: Vulnerable	Lower reported connections to teachers and peers Higher reported exposure to indirect and direct violence
Group 3: Disengaged	Lower reported availability of family support Lower reported connections to both teachers and peers Lower reported academic self-efficacy Lower reported intrinsic motivation Lower reported ratings for exposure to violence
Group 4: Resilient	Higher reported availability of family support Higher reported connections with teachers and peers Higher reported academic self-efficacy Higher reported intrinsic motivation Higher reported exposure to direct and indirect violence
Group 5: Moderately Resilient	Higher reported availability of family support Higher reported connections with teachers and peers Higher reported academic self-efficacy Higher reported intrinsic motivation Higher reported exposure to direct and indirect violence
Group 6: Not-At-Risk	Higher reported availability of family support Higher reported connections with teachers and peers Higher reported academic self-efficacy Higher reported intrinsic motivation Lower reported exposure to direct and indirect violence

We tested two hypotheses in the current study. First, we hypothesized that youth in groups reporting higher levels of individual (self-efficacy and internal motivation) and relational (perceived family support and teacher and peer connections) protective factors would report higher psychosocial and academic outcomes than would youth reporting lower levels of these factors, regardless of level of exposure to violence. This hypothesis received mixed support. Youth in the most vulnerable and vulnerable groups both reported lower individual and relational factors than did youth in most of the other groups and were also found to report significantly lower health status (see Figure 1). Youth in the most vulnerable group were also found to record significantly lower end-of-semester grades than did youth in the other groups, and youth in both the most vulnerable and the vulnerable groups recorded significantly lower retention than did youth in the other groups. The caveat is that youth identified as disengaged also recorded significantly lower

individual and relational factors yet were not found to differ significantly from youth in the other groups with respect to retention in school, and these youth in the disengaged group only differed significantly on grades when compared with youth in the not-at-risk group.

The second hypothesis argued that youth in groups reporting the same levels of resilience characteristics would report better outcomes if their group(s) reported lower exposure to violence than did youth in the other respective group(s). The second hypothesis was supported consistently and offers an explanation for the mixed support received for the first hypothesis. Although sharing similar levels of lower reported individual and social resilience characteristics, youth in the most vulnerable and vulnerable groups reported higher exposure to indirect and direct violence than did youth from the disengaged group. As hypothesized, youth in the most vulnerable and vulnerable groups reported lower health status and academic outcomes than did youth in the disengaged group. This pattern was repeated when comparing youth in the resilient group with youth from the not-at-risk group. Youth in the resilient and not-at-risk groups reported relatively higher individual and relational factors when compared with youth in the other groups; however, youth in the resilient group also reported the highest levels of violence exposure. Compared with youth in the not-at-risk group, youth in the resilient group reported higher stress and poorer health status and recorded lower grades.

Distinguishing Characteristics

Summary information regarding the variables that were used originally to classify the youth into cluster groups is provided in Table 2. (Data for all variables describing the standardized variables in the form found in Figure 1 are available from the first author.) Youth in the most vulnerable group reported lower self-efficacy and internal motivation. Youth in the vulnerable group reported higher self-efficacy and internal motivation than did youth in both the most vulnerable and the disengaged groups, but lower self-efficacy than did youth from the resilient and not-at-risk groups. Youth from the disengaged group reported lower self-efficacy and internal motivation than did youth from all other groups except youth in the most vulnerable group, indicating that lower self-efficacy and internal motivation are distinguishing characteristics. Alternatively, youth in the resilient and not-at-risk groups reported the highest self-efficacy and internal motivation, and their levels for these variables were significantly higher than the levels for youth in the other groups, indicating that high self-efficacy and internal motivation are distinguishing characteristics. Youth in the moderately resilient group reported both significantly higher and significantly lower self-efficacy and internal motivation than did youth in other groups, suggesting that these may not be distinguishing characteristics.

Youth in the most vulnerable group reported lower perceived family support and teacher and peer connections than did youth in the other groups. Although reporting relatively higher parent support, youth in the vulnerable group reported lower teacher and peer connections than did youth in the other groups. Similarly, youth in the disengaged group reported lower perceived family support and connections with teachers and peers than did youth in the other groups.

Reported level of exposure to violence distinguishes youth in the disengaged group from youth in both the most vulnerable and the vulnerable

groups. Whereas youth from the disengaged group reported very low exposure to violence, youth in the most vulnerable and vulnerable groups reported higher exposure to violence levels than did youth in all the other groups. Youth in the resilient group are distinguished by the combination of reporting very high levels of exposure to violence and relatively elevated levels of peer and teacher connections and perceived family support when compared with youth from the most vulnerable, vulnerable, and disengaged groups. Youth in the moderately resilient group reported relatively higher exposure to violence when compared with youth in the disengaged and not-at-risk groups and relatively higher connections with peers and teachers and perceived family support. The most distinguishing characteristics for youth in the not-at-risk group are the combination of low reported levels of exposure to violence and high reported connections with teachers and peers and perceived family support.

Concurrent and Predictive Indices

Academic stress seems to be a distinguishing feature for youth in the most vulnerable and vulnerable groups, who reported higher levels of stress, and for youth in the not-at-risk and moderately resilient groups, who reported lower levels of academic stress than did youth in the other groups. For health status, youth in the most vulnerable, vulnerable, and resilient groups reported significantly lower health status than did youth in three other groups, suggesting that psychological and emotional health issues may be a distinguishing characteristic for these groups (see Figure 1). Alternatively, youth in the moderately resilient and not-at-risk groups indicated significantly higher health status than did youth in the other groups, suggesting that a relative absence of psychological and emotional health issues may be distinguishing characteristics for these groups.

For end-of-semester grades and retention in school, youth in the most vulnerable group recorded lower grades and retention levels than did youth in at least two other groups, indicating that low grade performance and risk for noncompletion of school are distinguishing characteristics for youth from the most vulnerable group (see Figure 1). Alternatively, youth in the not-at-risk group reported the highest grades and retention, indicating that higher grades and stronger likelihood of continuing in school are distinguishing characteristics for youth from the not-at-risk group. Retention in school was also a distinguishing characteristic for youth in the vulnerable and moderately resilient groups, with youth in the vulnerable group reporting lower retention in school and youth in the moderately resilient group reporting higher retention in school than did youth in the other groups.

Exposure to Violence

A total of 63% of the youth in this sample were classified into groups reporting elevated levels of exposure to violence. Moreover, 30% of the youth were classified into two levels of vulnerability for experiencing psychosocial and academic difficulty on the basis of the combination of reporting lower internal and social resilience characteristics and elevated levels of exposure to violence. Although it is beyond the scope of this study to assess what types of violence youth were exposed to (e.g., gang-related, family, other), this study does call attention to

the significant life challenges of youth who are exposed to violence. A comparison of youth in the most vulnerable and disengaged groups indicated that even though both groups entered high school reporting lower perceived family support, lower connections with teachers and peers, and low self-efficacy and internal motivation, youth in the most vulnerable group also reported higher levels of exposure to violence and subsequently recorded lower grades and lower retention in school. The pattern was partially repeated when comparing youth in the resilient and *not-at-risk* groups. Youth in both groups reported higher perceived family support, connections with teachers and peers, self-efficacy, and internal motivation: however, youth in the resilient group reported the highest levels of violence exposure and, subsequently, recorded lower grades than youth in the *not-at-risk* group. For health status, youth in groups reporting higher levels of exposure to violence—most vulnerable, vulnerable, and resilient—also reported higher levels of psychological and emotional distress.

Limitations and Implications for Future Research

Limitations of the study include those normally associated with using correlational designs and survey instruments. Cause and effect cannot be ascribed to the variables, and student's self-reporting may not adequately reflect their actual experiences. Future research should consider replicating the results with different populations, such as youth from racial/ethnic backgrounds that were represented in lower numbers in this sample (e.g., African Americans and Asian Americans), youth from different economic levels, and youth from rural populations. In addition, future research should examine intervention strategies for helping youth identified as at-risk to improve their academic and health outcomes (Howard & Solberg, 2006; Howard, Solberg, Kantameni, & Smothers, in press).

Often the literature characterizes low-income youth as at-risk because of economic conditions, racial/ethnic group designation, or a combination of the two. This study focused on a predominately Latino population of youth who were attending a school that was located in one of the lowest income areas of a large, midwestern city. Using cluster analysis, the study found that risk can be differentiated in a number of ways. Rather than assuming that the derived risk groups should generalize to other urban settings, the strength of the study is in demonstrating that being at-risk is determined in multiple ways. For example, specific interventions can be used to target the needs of youth in the disengaged group in a manner that is different from interventions designed for either youth in the resilient or the moderately resilient groups. Interventions for the disengaged group should focus on establishing stronger relational connections with peers and teachers, whereas health and stress management may be more important for youth identified as resilient or moderately resilient.

Readiness for the world-of-work begins with educational attainment. What this study sought to demonstrate is that educational failure occurs for a number of reasons. Working with schools to classify youth into risk areas may support these schools not only by providing them with a more complete understanding of the youth they serve, but also in their effort to target resources in ways that are likely to support the specific needs of their students.

References

- Bandura A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Beauvais, F., Chavez, E. L., Oetting, E. R., Deffenbacher, J. L., & Cornell, G. R. (1996). Drug use, violence and victimization among White American, Mexican American and American Indian dropouts, students with academic problems and students in good academic standing. *Journal of Counseling Psychology, 43*, 292-299.
- Close, W. (2001). *Integrating self-determination theory and social cognitive theory to predict urban high school students' distress, achievement, and retention*. Unpublished doctoral dissertation, University of Wisconsin-Milwaukee.
- Cohen, S., & Wills, T. A. (1985). Social support and the buffering hypothesis. *Psychological Bulletin, 98*, 310-357.
- Cooley, M. R., Turner, S. M., & Beidel, D.C. (1994). *Children's report of exposure to violence*. Baltimore: Johns Hopkins University.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human development*. New York: Plenum.
- Egeland, B. R., Carlson, E., & Sroufe, L. A. (1993). Resilience as process. *Development & Psychopathology, 5*, 517-528.
- Hobfoll, S. E. (1989). A new attempt at conceptualizing stress. *American Psychologist, 44*, 513-524.
- Howard, K. A. S., & Solberg, V. S. H. (2006). School counseling as a method for achieving social justice. *Professional School Counselor, 94*, 278-294.
- Howard, K. A. S., Solberg, V. S., Kantamneni, N., & Smothers, M. K. (in press). *Designing culturally responsive school counseling career development programming for youth*. In H. Coleman & C. Yeh (Eds.), *Handbook of school counseling*.
- Jessor, R. (1991). Risk behavior in adolescence: A psychosocial framework for understanding. *Journal of Adolescent Health, 12*, 597-605.
- Jobson, J. D. (1992). *Applied multivariate data analysis: Vol. 2. Categorical and multivariate methods*. New York: Springer-Verlag.
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance [Monograph]. *Journal of Vocational Behavior, 45*, 79-122.
- Lerner, R. M. (1995). *America's youth in crisis: Challenges and options for programs and policies*. Thousand Oaks, CA: Sage.
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*, 227-238.
- Masten, A., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development & Psychopathology, 2*, 425-451.
- McLoyd, V. C. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185-204.
- Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology, 38*, 30-38.
- National Research Council. (1993). *Losing generations: Adolescents in high-risk settings*. Washington, DC: National Academy Press.
- Osofsky, J. D. (1995). The effects of exposure to violence on young children. *American Psychologist, 50*, 782-803.
- Russell, D., & Cutrona, C. (1984, August). The provisions of social relationships and adaptation to stress. Paper presented at the American Psychological Association Convention, Toronto, Canada.
- Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization. *Journal of Personality & Social Psychology, 5*, 749-761.

- Solberg, V. S., Gusavac, N., Hamann, T., Felch, J., Johnson, J., Lamborn, S., et al. (1998). The adaptive success identity plan (ASIP): A career intervention for college students [Monograph]. *The Career Development Quarterly*, 47, 48-95.
- Torres, J. B., & Solberg, V. S. (2001). Role of self-efficacy, stress, social integration, and family support in Latino college student persistence and health. *Journal of Vocational Behavior*, 59, 53-63.
- U.S. Census Bureau. (2000). Income. Information retrieved April 5, 2006, from http://factfinder.census.gov/servlet/ACSSAFFPeople?_event=&geo_id=01000US&_geoContext=01000US&_street=&_county=&_cityTown=&_state=&_zip=&_lang=en&_sse=on&ActiveGeoDiv=&_use.EV=&pctxt=bg&pysl=010&_submenuId=people_7&ds_name=ECN_2002_SAFF&_ci_nbr=&qr_name=®=%3A&_keyword=&_industry=



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