Psychosocial Stress, Internalized Symptoms, and the Academic Achievement of Hispanic Adolescents

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This study examined the relationship between stressful life events, internalized symptoms of stress, and academic achievement among a sample of Hispanic students in a large urban high school. Using a paper-and-pencil questionnaire, students were administered the Hispanic Children's Stress Inventory and two measures of internalized symptoms (Revised Children's Manifest Anxiety Scale and the Children's Depression Inventory). Perceived competence was measured using the Harter Perceived Competence Scale. A series of hierarchical multiple regressions revealed main effects for stressful life events and perceived competence on grades, anxiety, and depressive symptomatology. In addition, interaction terms were entered into the regression equations to determine if perceived competence was a moderator of stressful life events. Direct effects of stressful life events and perceived competence on school grades and internalized symptoms were found. Multiplicative interactions for perceived competence were not significant moderators of psychosocial stress on grades or internalized symptoms.

There is a growing body of research supporting a connection between exposure to stressful life events and psychosocial maladjustment in children and adolescents (e.g., Compas, 1987; Cowan, Cowan, & Schulz, 1996; Garmezy, 1983; Hetherington & Blechman, 1996). The general assumption of that research is that stressful life events cause, or at least increase, children's vulnerability to psychological, behavioral, or somatic disturbances. It has been found, for example, that exposure to major life events such as the separation or divorce of parents, a change in school or residence, and parental unemployment are likely to be associated with emotional difficulties and

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academic maladjustment in children and adolescents (e.g., Dubow & Tisak, l989; Dubow, Tisak, Causey, Hryshko, & Reid, l991; Garrison, Schoenbach, Schluchter, & Kaplan, l987; Luthar, l991; Safer, l986).

It is important to note, however, that very few studies concerning childhood psychosocial stress have included Hispanics and other minority group children and adolescents. Yet, it has been argued that the evaluation of psychosocial adjustment may be influenced by cultural norms and values (Greshman, 1986). Moreover, the few studies linking stressful life events and the academic achievement of Hispanic adolescents (Barrington & Hendricks, l989; Rumberger, l983; Steinberg, Blinde, & Chan, l984; Valverde, l987) generally have focused on school dropouts and have placed more emphasis on the contribution of risk rather than on resource variables.

The extant gaps in the empirical literature are caused, in part, by the dearth of research on Hispanics and a propensity toward examining cultural differences using global cross-cultural studies. Regrettably, the bias toward cross-cultural studies has served only to provide a static and fragmented account of the psychosocial adjustment of Hispanic adolescents. Hispanics represent a heterogeneous group with marked within- and between-group variations. Studies of Hispanic adolescents have shifted toward exploring within-group differences that may be attributed to psychosocial risk factors or stressors among individuals who share a similar ethnicity but differing patterns of acculturation (Alva, 1991; Padilla, 1986).

Two themes in the literature on psychosocial stress and academic achievement warrant emphasis in developing a clearer understanding of the psychosocial adjustment of Hispanic children and adolescents: (a) the importance of culturally specific measures of psychosocial stress, and (b) the need to examine the factors that buffer and protect Hispanic students from the detrimental effects of poverty and other social conditions that place them in a "disadvantaged" status.

CULTURALLY SPECIFIC STRESSORS

Among the most commonly investigated demographic characteristics of at-risk children are low socioeconomic status (e.g., Clark-Lempers, Lempers, & Netusil, l990; Felner et al., 1995), low maternal education, large family size, minority group status, and parental unemployment or change in work status (e.g., Flanagan & Eccles, 1993).

For Hispanics, there is evidence to suggest that the process of acculturating into the dominant culture may produce a unique set of sociocultural

events that oftentimes are stressful and difficult to cope with (Cervantes & Castro, 1985; Cervantes, Padilla, & Salgado de Snyder, l991; Delgado-Gaitan, l988; Gil, Vega, & Dimas, 1994; Hovey & King, 1996; Saldana, 1994). Studies (Alva, 1991; Padilla, l986; Padilla, Cervantes, Maldonado, & Garcia, l988) using culturally specific stress inventories, such as the Hispanic Children's Stress Inventory, have shown that Hispanic children and adolescents commonly appraise events such as leaving relatives and friends behind when moving, feeling pressured to speak only Spanish at home, and living in a home with too many people as stressful. Differences in the Hispanic adolescent's self and family role expectations also can lead to conflicts and stress within families. For instance, discrepancies in the values and practices of Hispanic adolescents and their parents may create conflict and pressure in selecting a set of cultural norms and expectations with which to adhere (Bernal, Saenz, & Knight, l991; Ocampo, Garza, Dabul, & Ruiz, l991). Hispanic adolescents often are asked to interpret or translate the dominant language and culture for their parents, involving them emotionally in the financial, legal, and social worries and concerns of their family.

MODERATING EFFECTS OF PERCEIVED SELF-COMPETENCE

As mentioned previously, research on the academic achievement of Hispanic adolescents has focused primarily on the contribution of stressful life events and other demographic conditions on academic underachievement and failure. To better understand the processes enhancing academic success, we must examine factors that serve to attenuate predictions of academic underachievement and school failure based on the risk status of children and adolescents (Bolger, l990; Compas, l987; Garmezy 1981, 1983; Quadrel, Fischoff, & Davis, l993; Rutter, l987; Warner & Smith, l982).

The present study focused on one such moderating factor: perceived self-competence. Research provides evidence that perceived self-competence and social problem-solving skills play an important role in predicting academic achievement. Children who feel competent and are accepted by their peers or display prosocial and responsible forms of behavior at school tend to be high achievers, whereas socially rejected and aggressive children appear to be especially at risk for academic failure (Green, Forehand, Beck, & Vosk, 1980; Wentzel, l991).

Several studies (e.g., Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Luthar, 1991; Wentzel, 1991) have directly tested the moderating effects of

perceived competence and have found that perceived competence has a buffering effect on the link between risk and psychosocial outcomes, including academic achievement.

Despite these findings, few studies have investigated the stress-moderating effects of perceived competence on Hispanic adolescents' psychosocial adjustment and performance in school (Garmezy, Masten, & Tellegen, l984). A moderator model hypothesizes an interaction between psychosocial stress and perceived competence, such that high levels of perceived competence attenuate the negative effects of stressful life events on outcome measures of psychosocial and school adjustment (Cohen & Wills, l985). A moderator model also allows for the possibility of testing the main effects for the predictor (stressful life events) and the moderator (perceived competence) on adolescent adjustment.

In this study, the extent to which culturally relevant stressors and demographic risk factors compromise the social and academic adjustment of Hispanic high school students will be examined, enlarging the developmental framework linking childhood stressors and adjustment at school. Harter's (1982) work has suggested that domain-specific measures of perceived competence may be differentially related to adjustment, hence, the need to examine separately the contributions of domain-specific measures of competence in testing the moderator hypothesis (Cauce, l987).

METHOD

Participants

A total of 171 (88 males and 83 females) ninth-grade students from a predominantly Hispanic public high school in Los Angeles, California participated in this study. The age distribution of the participants was as follows: 14-year-olds (52%), 15-year-olds (38%), and 16-year-olds (10%). Based on a series of questions regarding place of birth, 33% reported that they were born in the United States, 26% were born in Mexico, 20% in El Salvador, 8% in Guatemala, 2% in Nicaragua, and 5% in another Latin American country.

Of the participants, 77% reported that the male head of household was employed, whereas 23% reported he was unemployed. For the female head of household, 62% were employed and 38% unemployed. The Hollingshead (1965) measure of social position was used to assess the relative socioeconomic status of the male head of household. If the male head of household was not present, the occupational level of female head of household was

used. The median occupation of both the male and female heads of household was at the semiskilled level (e.g., seamstress and factory machine operator).

Measures and Procedures

A paper-and-pencil questionnaire was administered to the students during a regular class period. The questionnaire took approximately 45 minutes to complete and consisted of demographic questions and four instruments used to assess psychosocial stress, internalized symptoms, and perceived competence.

Psychosocial Stress

The Hispanic Children's Stress Inventory (Padilla et al., 1988) contains 30 items used to assess the impact of culturally specific stressors (e.g., language, family dynamics, and intergroup relations) on Hispanic adolescents. Respondents were asked to indicate how frequently they had experienced each stressful event during the past 6 months. Sample items include "I have found it difficult to live in a home with too many people," "It has been difficult for me to make new friends at school," and "I have felt that I can't communicate well with my parents." The responses were scored on a 3-point frequency scale (1 = *never*, 2 = *sometimes*, 3 = *very often*). The scores ranged from 31 through 61, with a mean of 43.25 (*SD* = 6.09). The internal reliability of the Hispanic Children's Stress Inventory was calculated to be .76.

Internalized Symptoms

Anxiety. The Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 1985) consists of 28 items (e.g., "I get nervous when things do not go the right way for me", "I worry a lot of the time"). Respondents were asked to give a yes or no response to each item. Higher scores are indicative of anxiety. The scores ranged from 0 through 27, with a mean of 12.71 (*SD* = 5.67). The internal reliability of the Revised Children's Manifest Anxiety Scale was .77.

Depressive symptomatology. The Children's Depression Inventory (Kovacs, 1985) consists of 27 items, useful in the assessment of depressive symptomatology. Each item contains three statements, reflecting varying degrees of depressive symptomatology. Each respondent was asked to choose one of three statements that best describes his or her feelings within

the past 2 weeks. A sample item is, "I am sad once in a while," "I am sad many times," or "I am sad all the time." Another sample item is, "I do most things okay," "I do many things wrong," or "I do everything wrong." The scores for each item range from 0 through 2, with 0 being the least and 2 being the most representative of symptoms of depression. A total depressive symptomatology score was computed, with higher scores indicative of symptoms of depression. The actual scores ranged from 0 to 34, with a mean of 12.12 (*SD* = 6.89). The internal reliability of the Children's Depression Inventory was found to be .84.

Perceived Competence

The Harter Perceived Competence Scale (Harter, 1982) consists of 28 items that measure four domains of competence: (a) cognitive, (b) social, (c) physical, and (d) global competence. There are 7 items per domain. For each item, the respondents were asked to choose one of two contrasting statements that best applies to them (e.g., "Some kids find it hard to make friends *but* for other kids it's pretty easy"), and then indicate whether this is really true or sort of true for them. Each item is assigned a score from 1 through 4, with higher scores denoting higher levels of perceived competence.

The range and mean scores for each domain were computed. The cognitive competence scores ranged from 9 through 25, with a mean of 18.22 (*SD* = 3.40), whereas the scores for social competence ranged from 8 through 28, with a mean of 19.49 (*SD* = 4.18). For physical competence, the scores ranged from 8 through 26, with a mean of 18.28 (*SD* = 3.94), whereas the scores for global competence ranged from 10 through 27, with a mean of 19.92 (*SD* = 3.88). The internal reliability of each of the four perceived competence domains was assessed. The following coefficients were found: cognitive (alpha = .44), social (alpha = .72), physical (alpha = .60), and global (alpha = .58).

Academic Achievement

Grades. School records were used to obtain the grades of respondents. The grade-point average (GPA) was the composite of grades from six major classes such as social studies, English, science, and the like for one semester. The GPA was calculated based on a 4-point grading scale that ranged from outstanding (4.0) to failing (0.0). The mean GPA for the sample was 2.36 (*SD* = .86), whereas the median was 2.30.

RESULTS

Correlation Matrix

In planning for the regression analyses to test for the stress-moderating role of perceived competence, a correlation matrix was computed (see Table 1). Significant positive correlations were found between psychosocial stress and anxiety (r = .58), and depressive symptomatology (r = .59). Psychosocial stress also was found to be correlated negatively with the cognitive (r = –.37), social (r = –.29), and global (r = –.40) domains of the perceived competence measure. As expected, perceived competence was found to have an inverse relationship to psychosocial stress, with the exception of physical competence. A nonsignificant correlation was found between psychosocial stress and physical competence.

Next, the link between psychosocial stress and academic outcomes was examined. A significant negative correlation between psychosocial stress and grades (r = –.20) was found, indicating that students experiencing high levels of psychosocial stress tend to do poorly in school.

Hierarchical Regression Analyses

To test the direct and moderator effects of perceived self-competence on the psychosocial adjustment of Hispanic adolescents, a series of hierarchical regression analyses was conducted. These analyses are consistent with those suggested by Cohen (Cohen & Cohen, 1975; Cohen & Wills, l985) and used by others (e.g., Compas, Wagner, Slavin, & Vannatta, l986; Dubow & Tisak, l989; Kessler, 1983) to test the direct and stress-moderating effects of variables.

Using a regression procedure, the demographic variables were first entered as a block to examine and statistically control the independent contribution of the demographic variables in predicting the outcome measures. Next, stressful life events and global perceived competence were entered (Steps 2 and 3, respectively), to examine the main effects of each of these variables. As reported in Table 2, values in parentheses represent standardized coefficients, Betas, and F values in R^2 changes when a specific perceived competence domain was substituted for global competence in separate regression analyses. Last, in Step 4, as a test of the moderating effects of perceived competence, four interaction terms were entered in separate regression analyses: Global × Stressful Life Events, Physical × Stressful Life Events, Cognitive × Stressful Life Events, and Social × Stressful Life Events.

TABLE 1: Intercorrelations Among Demographic Characteristics, Stressful Life Events, Internalized Symptoms, Competence and Academic Achievement

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Demographic characteristics										
1. Gender										
2. Generation	.12									
3. Occupational status	.05	–.07								
Stressful life events										
4. Psychosocial stress	.07	–.20**	.05							
Internalized symptoms										
5. Anxiety	.32***	.01	.00	.58***						
6. Depression	.19*	.00	.01	.59***	.72***					
Perceived competence										
7. Cognitive	–.05	–.01	.21**	–.37***	–.43***	–.45***				
8. Physical	–.35***	–.10	.07	–.13	–.34***	–.33***	.22**			
9. Social	.08	.08	–.04	–.29***	–.30***	–.44***	.25**	.21*		
10. Global	–.04	.01	.07	–.40***	–.44***	–.45***	.39***	.37***	.35***	
Academic achievement										
11. Grades	.16*	–.11	.20**	–.20**	–.06	–.31***	.34***	.07	.08	.12

*$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 2: Hierarchical Multiple Regressions Examining the Direct and Moderator Effect of Perceived Self-Competence in Predicting School Grades

		Grades			
Step	*Variables*	*Beta*	*Cumulative* R^2	R^2 *Change*	F*(step)*
1	Demographic variables				
	Gender[a]	.186	.082	.082	4.343**
	Occupational level	.203			
	Generational status	.191			
2	Stressful life events	–.301	.141	.058	9.937**
3	Perceived self-competence				
	Global	–.074	.141	.000	.002
	Physical[b]	(–.347)	(.158)	(.017)	(.251)
	Cognitive[b]	(.201)	(.206)	(.065)	(9.690**)
	Social[b]	(–.215)	(.143)	(.002)	(.010)
4	Moderator effects				
	Global × Stress	.076	.141	.000	.016
	Physical × Stress[b]	(.437)	(.161)	(.003)	(.509)
	Cognitive × Stress[b]	(.055)	(.206)	(.000)	(.013)
	Social × Stress[b]	(.232)	(.144)	(.001)	(.191)

a. Gender was coded as follows: 1 = male, 2 = female.
b. Values in parentheses represent standardized coefficients (Betas) and *F* values when a specific perceived competence domain was substituted for global competence in that step in separate regression analyses.
**$p < .01$.

Significant interaction effects would be consistent with the presence of the hypothesized moderator effect. (For more information on methodological and statistical issues in the study of moderating variables, see Baron & Kenny, 1986; Cleary & Kessler, 1982; McClelland & Judd, 1993; and Wheaton, 1985.)

Two indices of adolescent adjustment served as the outcome variables in the regression analyses. School grades were used to measure academic adjustment. The second criterion variable, internalized symptoms, was measured using a composite measure of anxiety and depressive symptomatology because of the strong association ($r = .72$) between these two variables.

As reported in Table 2, the demographic variables were found to be significant in predicting school grades, accounting for 8.2% of the variance. Psychosocial stress and cognitive self-competence were found to have significant main effects in predicting grades. In Step 4, none of the interaction terms were significant.

TABLE 3: Hierarchical Multiple Regressions Examining the Direct and Moderator Effect of Perceived Competence in Predicting Internalized Symptoms

		Internalized Symptoms			
Step	*Variables*	*Beta*	*Cumulative* R^2	R^2 *Change*	F*(step)*
1	Demographic variables				
	Gender[a]	.248	.084	.084	4.505**
	Occupational level	–.011			
	Generational status	–.069			
2	Stressful life events	.750	.425	.341	86.464****
3	Perceived competence				
	Global	.111	.483	.058	16.339***
	Physical[b]	(–.051)	(.472)	(.047)	(10.850***)
	Cognitive[b]	(–.736)	(.504)	(.079)	(19.955****)
	Social[b]	(–.243)	(.499)	(.074)	(14.940****)
4	Moderator effects				
	Global × Stress	–.367	.485	.002	.618
	Physical × Stress[b]	(–.188)	(.473)	(.001)	(.149)
	Cognitive × Stress[b]	(.451)	(.509)	(.005)	(1.420)
	Social × Stress[b]	(.003)	(.499)	(.000)	(.000)

a. Gender was coded as follows: 1 = male, 2 = female.
b. Values in parentheses represent standardized coefficients (Betas) and *F* values when a specific perceived competence domain was substituted for global competence in that step in separate regression analyses.
**$p < .01$. ***$p < .001$. ****$p < .0001$.

Table 3 summarizes the results of the regression analyses predicting internalized symptoms, the composite measure of anxiety and depression. The demographic variables were found to be significant predictors of internalized symptoms, explaining 8.4% of the variance of internalized symptoms. Stressful life events were significant, adding 34% to the explained variance in Step 2. As reported in Step 3, all four self-concept domains had a direct effect in predicting internalized symptoms of anxiety and depression. None of the multiplicative interaction terms were significant.

DISCUSSION

This study examined the effects of psychosocial stress on Hispanic adolescents and analyzed the extent to which deleterious consequences were expressed through an increase in anxiety and symptoms of depression and a decrease in academic achievement. Building on previous research conducted primarily with majority group children, our results show a strong link

between psychosocial stress and an increase in internal symptomatology and a decrease in academic achievement among Hispanic adolescents.

Correlational findings indicate that Hispanic adolescents who self-report high levels of psychosocial stress are more likely to report depressive symptomatology, anxiety, lower grades, and to perceive themselves to be less competent. The etiologic role of stressful life events in determining Hispanic adolescents' psychosocial and academic adjustment was also evident in a series of regression analyses. Stressful life events added a significant proportion of variance in predicting grades and internal symptomatology (anxiety and depression symptomatology), after controlling for demographic characteristics (gender, generational status, and parental occupation).

Consistent with statistical analyses suggested by Cohen (Cohen & Cohen, 1975; Cohen & Wills, l985) and used by others (e.g., Compas et al., l986; Dubow & Tisak, l989), a series of hierarchical regression equations were formed to test the role of perceived competence in moderating the effects of psychosocial stress on anxiety, depressive symptomatology, and academic achievement. These regression equations allowed us to test the direct and interaction effects of domain-specific measures of perceived competence. The moderator hypothesis predicts that high perceived competence reduces or ameliorates the effect of psychosocial stress on symptomatology, as evident in significant Stress × Perceived Competence multiplicative interactions.

A series of regression analyses showed that perceived cognitive competence has a direct effect on school grades. Moreover, each of the four self-competence domains were significant predictors of internalized symptoms, after controlling the demographic variables and levels of acculturative stress. However, the regression analyses did not show the hypothesized stress-moderating role that perceived competence has in relation to psychosocial stress and its deleterious consequences, which has been demonstrated in studies (e.g., Luthar, 1991; Wentzel, 1991) conducted with non-Hispanic populations. Perceived competence did not attenuate the negative effects of acculturative stressors on grades and internal symptomatology in our sample of Hispanic adolescents. In interpreting our results, the measured correlations between perceived self-competence and both stressful life events and the dependent variables (internalized symptoms and school grades) may have weakened the regression analyses. Baron and Kenny (1986) note, "it is desirable that the moderator variable be uncorrelated with both the predictor and the criterion (the dependent variable) to provide a clearly interpretable interaction term" (p. 1174). Indeed, "nonexperimentalists conducting field research have found moderator effects to be extremely difficult to detect" (McClelland & Judd, 1993, p. 376).

A second limitation of this study is the absence of concurrent measures of competence, such as would have been provided by teacher or parent ratings. Although self-evaluations of competence are widely used in child and adolescent research, it may well be the case that teacher or parent ratings of competence may provide additional and statistically unique information that serves to further explain the stress-reducing influence of competence on adolescent adjustment.

It should also be noted that our sample was drawn from a single geographic area and thus represents a relatively restricted range of community and school conditions. To the extent that future research include larger and more diverse samples of Hispanic subgroups, perceived self-competence and other protective resources may be found to have stronger and more pervasive roles as moderators of the relation between psychosocial stress and adolescent adjustment.

Moreover, a more productive strategy may be to focus on more proximal events and interactions that directly shape the perceived self-competence of Hispanic adolescents. Investigation of more proximal school-based events and perceptions may account for the apparent direct link between psychosocial stress and adolescent academic adjustment reported in studies with non-Hispanics (Felner et al., 1995).

The interactive exchange between students and teachers and the values and practices of the classroom form the context in which adolescents develop behaviors, beliefs, and aspirations that can serve as buffering or protective factors in the face of stress and social disadvantage. Indeed, school-based interventions have been developed to help children develop skills (Weissberg, Caplan, & Sivo, 1989) and cope with stress (Felner & Felner, 1989). Although school can obviously contribute to protective mechanisms, they can also create at-risk situations. Rutter (1987) warns that the protective ingredients of a protective factor do not lie in the variable itself, but in the set of processes that flow from the variable, linking buffers with specific outcomes. For example, many minority students fail to do well in school because in many ways the educational climate and teacher-student interactions communicate to students a weak link between academic success and social mobility (Ogbu, 1991, 1992). Consequently, these students come to believe that school success does not necessarily lead to social mobility, which in turn affects the way they perceive their schooling and the amount of effort they exert in pursuing and completing a formal education. Clearly, what are needed are long-term, prospective studies to trace the enduring effects of stressful life events on Hispanic adolescents as they continue their education and to identify the mechanisms through which protective factors exert their stress-reducing influence on psychosocial adjustment.

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