

THE RELATIONS AMONG GENERAL AND RACE-RELATED STRESSORS AND PSYCHOEDUCATIONAL ADJUSTMENT IN BLACK STUDENTS ATTENDING PREDOMINANTLY WHITE INSTITUTIONS

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Two hundred sixty African American college students attending predominantly White institutions completed the Black Student Stress Inventory (BSSI) and a measure of psychological adjustment; academic performance indices on a subsample were obtained via archival records. Principal components analysis of the BSSI yielded a three-factor solution: race-related stress, psychological/interpersonal stress, and academic stress. As predicted, general and race-related perceived stressors as measured by the BSSI were related to psychological distress; academic stress was specifically related to overall GPA. In fact, perceived academic stress accounted for more variance in 1st-year GPA than did ACT scores. Implications of the findings as well as suggestions for future research are discussed.

Keywords: *African American; Black; college students; race-related stress; academic stress; academic adjustment*

Toward the end of the modern civil rights movement, scholars began to examine the role of social status (e.g., gender, ethnicity)

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on perceived levels of stress and, moreover, identified social categories such as class and race as sources of stress (e.g., B. P. Dohrenwend & Dohrenwend, 1969; B. S. Dohrenwend & Dohrenwend, 1970). Before this time, the stress literature focused on general stress that most people experienced regardless of one's social status such as death of a loved one. Examination of race-related stress, or "the psychological discomfort that results from a situation or event that an individual appraises as troubling because of racial discrimination or isolation" (Plummer & Slane, 1996, p. 303), is an important contribution to the stress literature because it adds to the accuracy and complexity of the types of stress encountered by racial minorities.

Recently, the literature has witnessed an explosion of research on race-related stressors (e.g., Clark, Anderson, Clark, & Williams, 1999; Utsey, Ponterotto, Reynolds, & Cancelli, 2000; Williams, Neighbors, & Jackson, 2003; Williams, Spencer, & Jackson, 1999). Most of the literature centers on conceptualizing (e.g., Harrell, 2000), measuring (e.g., Utsey, 1998), or exploring the influence of race-related stressors on African American adults' health status, including systolic and diastolic blood pressure (e.g., Fang & Myers, 2001; Krieger & Sidney, 1996) and psychological distress (Hendryx & Ahern, 1997; Hope & Klonoff, 1996; Williams, Yu, Jackson, & Anderson, 1997). Overwhelmingly, results from this body of work suggest a link between greater perceived racism (a type of race-related stress) and lower negative health symptoms (e.g., Bowen-Reid & Harrell, 2002; see also Williams et al., 2003, for a review).

It is surprising that there is very little research examining the effect of race-related stress on African American college students' adjustment. A related field in higher education examines the role of noncognitive variables on college adjustment, such as alienation

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from a predominantly White campus environment. However, this scholarship does not explicitly frame studies within the stress literature. Thus, research does not typically assess the degree to which participants identify experiences with racism as stressful. Findings from the emerging body of research generally suggest that Black college students attending predominantly White institutions (PWIs), on average, experience additional stress related to being a racial minority in a predominantly White setting (e.g., Ancis, Sedlacek, & Mohr, 2000) and that this additional stress affects their adjustment process (Anderson, 1988; Edmunds, 1984; Henderson, 1988; Prillerman, Myers, & Smedley, 1989).

Researchers working with the UCLA Coping With College Project in the late 1980s are among the few scholars who have conceptualized and systematically examined the role of both general (e.g., roommate conflict, financial concerns) and race-related (e.g., racial insensitivity by professors) stressors on the psychological and academic adjustment of college students. Findings from these early project activities produced results supporting the differential effects of general and race-related stressors on college student academic, personal, and social adjustment. For example, findings suggest that (a) African American students self-reported higher levels of race-related stressors than either Chicano or Filipino students (Baker, 1988), (b) race-related stressors were significant predictors of psychological well-being (Smedley, 1988), and (c) perceived stressors and coping strategies predicted 1st-year GPA over and above SAT scores (Prillerman, 1988). Although these studies are promising, there are some limitations, including limited psychometric properties of the scales used and examination of only 1st-year students. Also, little systematic research in the area has occurred over the past decade. The purpose of this study was to update and further extend this body of literature by examining the influence of both general and race-related stress on African American college students' psychological and academic adjustment, using more psychometrically sound instruments and students across academic standings (i.e., 1st-year to senior).

The primary aim of this project was thus to further examine the relations between general and race-related stress on psychological

adjustment among African American college students. Because of the limited research in this area, our intent was primarily exploratory. However, on the basis of the UCLA project's results, we did hypothesize that both general and race-related stress would account for a significant amount of variance in psychological adjustment and that greater levels of perceived stress would be related to greater levels of distress.

There have been some empirical data suggesting a relationship between stress and academic performance among primarily White students (Felsten & Wilcox, 1992; Garrity & Ries, 1985) and at least two studies suggesting that race-related stress affects academic performance (e.g., information retention, GPA) for Black college students (Gougis, 1986; Prillerman, 1988). Conversely, though, there are some data suggesting that general stress is weakly or unrelated to GPA for racial minority students' performance (Hunter, 1984; Petrie & Russell, 1995; Vasquez & Garcia-Vasquez, 1995). For the most part, these types of studies have not examined both general and race-related stress or have not included a Black sample. Similar to the psychological adjustment data, there are few data examining both general and race-related stressors on the academic performance of Black college students. In the only study we were able to locate, Prillerman (1988) found that race-related stress was a stronger predictor of 1st-year GPA than SAT scores. A secondary focus of this study was to explore further the role of stress in the academic performance of Black college students. Consistent with Prillerman's (1988) findings, we predicted that both general and race-related stress would account for a significant amount of the variance in GPA.

An additional exploratory question was examined as an aspect of college student adjustment. We were unable to find published longitudinal data on types of perceived stress and its influence on Black college students' adjustment. Longitudinal data are important because they provide useful information about the longer term consequences of stress on students' lives. This information, in turn, can have implications for designing appropriate prevention interventions. As one method of addressing this limitation, we investigated if perceived stress was related to attrition from a university,

that is, whether students who discontinued enrollment at a university self-reported greater levels of stress during their 1st year compared to students who continued enrollment in the university until their 4th year of studies.

METHOD

PARTICIPANTS

Participants were 260 (168 women and 77 men; 15 participants did not report their sex) self-identified Black students attending one of four PWIs in the Midwest. All but one of the participants were undergraduate students representing a variety of academic standings: 1st year ($n = 144$), sophomore ($n = 33$), junior ($n = 40$), and senior ($n = 28$); 14 students did not report their standing. All participants self-reported being African American/Black; they ranged in age from 17 to 52 years with a mean age of 20.11 years ($SD = 4.14$).

MEASURES

Perceived stressors. A slightly modified version of the Black Student Stress Inventory (BSSI) (Edmunds, 1984) was used to assess students' perceived stressors. The BSSI is made up of 82 items that assess both general (e.g., "fear of failure") and race-related (e.g., "few Black classmates") stressors. We modified the original scoring by shortening the response choice from the original 10-point scale to a 6-point Likert-type scale (1 = *not at all a source of stress* to 6 = *a major source of stress*) (see Neville, Heppner, & Wang, 1997). Total scores can range from 82 to 492, with higher scores indicating greater levels of perceived stress. The BSSI has been found to have a high internal consistency ($\alpha = .98$; Edmunds, 1984) and acceptable 2-week test-retest reliability ($r = .75$; Neville et al., 1997). The alpha coefficient for the total score for this sample was also acceptable ($\alpha = .98$). Previous findings from research using an earlier subsample of the current larger sam-

ple suggest that the BSSI was related to minor daily hassles and racial identity attitudes in predictable ways (Neville et al., 1997).

Psychological distress. The Global Symptom Index (GSI) of the Brief Symptom Inventory (BSI) (Derogatis & Spencer, 1982) was used to assess overall level of psychological distress. The BSI is made up of 53 items in which participants endorse the applicability of each item over the past 7 days using a 5-point scale ranging from 0 (*not at all distressed*) to 4 (*extremely distressed*). The GSI is a total average score and thus scores can range from 0 to 4, with higher scores indicating greater levels of psychological distress. Sample items include "nervousness or shakiness inside" and "feeling very self-conscious with others." Internal consistency for the nine dimensions of the BSI has ranged from .71 (psychoticism) to .85 (depression). The internal consistency coefficient for the GSI in this study was .94. The BSI has been related to several physical and psychological health indices in samples of African Americans, including sleep disturbances among elderly Black women (Bazargan, 1996).

Neuroticism. The Big Five (Goldberg, 1992) is made up of 100 trait adjectives, 20 each for five dimensions: Surgency (or extraversion), Agreeableness, Conscientiousness, Emotional Stability (or neuroticism), and Intellect (Goldberg, 1990, 1992). Participants rate themselves for each item on a 9-point Likert-type scale (1 = *extremely inaccurate* to 9 = *extremely accurate*); higher scores indicate more agreement with characteristics of that personality dimension. Alpha coefficients range from .84 to .90 across the five dimensions (Goldberg, 1992). The alpha coefficient for the Neuroticism subscale score for this sample was .69. The Big Five has been found to provide consistent self and peer descriptions as well as moderately strong associations with the NEO Personality Inventory (Goldberg, 1992).

Academic adjustment. American College Test (ACT) scores, 1st-year cumulative GPA, and enrollment status (i.e., whether 1st-year students persisted to their 4th year or whether they discontinued enrollment) of a subsample of the students were identified through archival records obtained from the registrar's and retention offices at one of the institutions.

Demographic sheet. Students also completed a brief demographic sheet with questions on personal information including age, race, gender, and year in school.

PROCEDURES

This study was part of an ongoing project designed to examine the academic and personal adjustment of African American students attending PWIs. Participants were recruited during a 4-year period in one of three ways: (a) approximately half of the participants ($n = 132$) were recruited in Black studies or general education classes in which participants' names were entered into a drawing to win a cash prize; (b) about one third ($n = 92$) of the participants were 1st-year students recruited via telephone solicitation at one of the four institutions and were given \$5.00 for their participation; and (c) a small number of participants ($n = 36$) were enrolled in an introductory psychology class in which they received credit for their participation. Participants recruited via the first method completed the surveys at home and returned them to their instructor; participants recruited via the last two methods completed the surveys primarily in group format. There was an approximate 60% participation rate for students recruited using the first two methods. All students provided consent and when necessary signed a school release of information form.

RESULTS

PRELIMINARY RESULTS

Factor structure of the BSSI. A principal-components analysis was performed on the 82 BSSI items to examine their factor structure. Nine factors emerged from the initial PCA with eigenvalues greater than 1.00, accounting for 64% of the variance. A scree test indicated that as many as five components were interpretable. As a result, two-, three-, four-, and five-component extractions were forced using both oblique and orthogonal rotations. Oblique rota-

tion was chosen because the shared variance between components was more than 10% and thus strained the orthogonal assumption of no relationship (Tabachnick & Fidell, 1996). Factors 4 and 5 had six or less items, lacked high item loadings, contributed little to the cumulative variance, and lacked coherence. Thus, the three-component extraction with oblique rotation was the most stable and interpretable of the five possible solutions. Only items with factor loadings greater than .4 were retained and items that had cross-loadings of less than .15 were eliminated. An intercorrelation matrix of the three factor scores indicates moderate intercorrelations among the three factors ($r_{12} = .50$, $r_{13} = .31$, $r_{23} = .37$); thus, the factors are interrelated. The remaining 50 items, their factor loadings, and item means for the three-factor oblique solution are presented in Table 1.

The first factor was labeled "race-related stressors" and accounted for 32% of the variance (22 items, $\alpha = .95$). Nearly all of the items referred to issues related to race such as, "Insensitive attitudes of faculty toward Black students." The second factor, accounting for 8.6% of the variance (17 items, $\alpha = .91$), was labeled "psychological/interpersonal stressors" because the items focused on psychologically and/or interpersonally related issues, such as loneliness. The last factor was named "academic stress," accounted for 6.2% of the variance (11 items, $\alpha = .88$), and included academically related items such as reading comprehension. The total alpha for the scale was .95. Results from this PCA provide additional support for the construct validity of the BSSI and support for our first hypothesis stating that at least one factor would focus on race-related stress and one factor would focus on general stress.

Normative information of the BSSI. The means and standard deviations for the sum of the items on each of the three BSSI factors are as follows: race-related ($M = 58.11$, $SD = 24.59$, range = 101), psychological/interpersonal ($M = 44.37$, $SD = 17.98$, range = 75), academic ($M = 31.93$, $SD = 12.05$, range = 52), and total BSSI score ($M = 134.42$, $SD = 45.26$, range = 202). Higher scores indicate higher levels of stress reported for each factor. The means suggest, on average, that the students reported a moderate amount of stress

TABLE 1
Black Student Stress Inventory (BSSI) Items,
Factor Loadings, Means, and Standard Deviations

<i>Item</i>	<i>Factor Loadings</i>			<i>M</i>	<i>SD</i>
	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>		
Insensitive attitudes of faculty toward Black students	.81	.01	.00	2.79	1.62
Low academic expectations of faculty for Black students' performance	.78	-.03	-.03	2.66	1.60
Stereotypes Whites have about Blacks	.78	-.08	-.10	2.88	1.65
Insensitive attitudes of administrators and staff to Black students' needs	.77	.05	-.08	2.88	1.62
Lack of diverse perspectives among faculty	.76	-.06	.09	2.66	1.58
Insensitive attitudes of White students toward Black students	.76	.04	-.13	2.67	1.58
Limited recognition of the Black culture on campus	.75	-.04	-.02	2.85	1.60
Limited tolerance for culture differences on campus	.74	.06	.01	2.66	1.56
Professors grading Black students unfairly	.71	-.16	.05	2.35	1.64
Coping with racism	.70	.13	.01	2.66	1.59
Apathy of Black students	.69	.10	-.03	2.75	1.61
Lack of leadership among Black students	.68	.10	-.08	2.82	1.64
Few Black classmates	.67	-.02	.09	3.10	1.68
Racially biased class test	.66	-.13	.01	2.38	1.67
Inaccessibility of Black role models	.66	.08	.13	2.39	1.50
Lack of unity among Black students	.63	.17	-.06	3.35	1.74
Lack of a support system	.55	.28	.03	2.33	1.55
Race relations	.54	.23	-.03	2.36	1.47
Adjusting to the White-oriented campus culture	.54	.13	.11	2.35	1.53
Poor academic advising	.50	.03	.13	2.96	1.79
Maintaining one's racial identity in a predominantly White environment	.47	.16	.11	2.17	1.59
Poor interactions with faculty	.46	.04	.24	2.11	1.42
Loneliness	-.19	.88	.04	2.91	1.78
Isolation and alienation (feeling left out)	-.00	.84	-.15	2.54	1.78
Depression	.06	.74	.01	2.66	1.73
Interpersonal relationships (relationship difficulties)	-.05	.72	-.03	3.43	1.74
Low self-esteem (self-concept)	-.02	.70	.02	2.20	1.62
Guilt feelings	.01	.64	-.03	2.27	1.51
Social life on campus	.14	.63	-.10	2.68	1.66

(continued)

TABLE 1 (continued)

Item	Factor Loadings			M	SD
	Factor 1	Factor 2	Factor 3		
Anxiety	.05	.61	.03	2.70	1.65
Assertion (standing up for one's rights)	.06	.58	.04	2.36	1.51
Establishing friendships	.05	.58	.06	2.20	1.55
Relationship difficulties with fellow					
Black students	.25	.53	-.02	2.47	1.54
Black male/female relationships	.16	.52	.05	3.14	1.86
Identity issues	.13	.51	.10	1.86	1.36
Coping with the break-up of a relationship	.09	.49	-.08	2.69	1.93
Value conflicts	.17	.47	.08	2.32	1.52
Sexual concerns	-.01	.44	.03	2.66	1.59
Stress management (coping with stress)	-.06	.40	.21	3.27	1.60
Reading comprehension	-.01	-.07	.82	2.43	1.60
Listening/notetaking	.03	-.10	.73	2.33	1.37
Reading rate	-.05	.03	.69	2.44	1.63
Answering essay questions	.12	-.16	.66	2.82	1.65
Assignment completion of dealing with					
class assignments	-.02	.09	.65	3.08	1.58
Time management (managing one's					
time adequately)	-.11	.19	.65	3.49	1.60
Test anxiety (difficulty with tests after					
adequate preparation)	.08	-.00	.65	3.51	1.70
Writing term papers	.09	-.13	.64	2.95	1.79
Poor study skills and habits	-.16	.29	.60	3.00	1.70
Poor academic performance	-.03	.29	.48	2.86	1.73
Excessive academic load	.28	.06	.47	3.02	1.67

NOTE: Factor 1 = BSSI race-related stress, Factor 2 = BSSI interpersonal/psychological stress, and Factor 3 = BSSI academic stress. Unique factor loadings > .40 are in bold. Analysis is based on 260 observations. BSSI items range from 1 to 6.

on each of the three factors: race-related (average per item = 2.64), psychological/interpersonal (average per item = 2.61), and academic (average per item = 2.90). Stem and leaf plots were examined; skewness for each of the three factors is as follows: race-related (.42), psychological/interpersonal (.52), academic (.41), and total BSSI (.32).

We also examined whether gender differences exist on the three factors and total BSSI. A multivariate analysis of variance on the

three factors revealed overall effect for gender, $F(3, 216) = 2.92, p = .035$. Individual ANOVAs indicated that the gender effect for race-related and academic factors was not significant: race related, $F(1, 218) = .079, p = .779$; academic, $F(1, 218) = 3.109, p = .079$. However, the gender effect for psychological/interpersonal stressors was significant (women's mean psychological/interpersonal stressor score = 46.91, men's mean psychological/interpersonal stressor score = 40.74; $F(1, 218) = 5.649, p = .018$). However, the ANOVA test for the psychological/interpersonal stressors indicated that the Levene's Test for Equality of Error Variance demonstrated an inequality among the error variance for the dependent variable, $F(1, 218) = 5.474, p = .020$. An independent samples t test on the total BSSI also revealed no overall gender effect, $t(218) = 1.56, p = .119$. These results suggest that women reported greater difficulties with psychological/interpersonal stressors than men; however, this difference could potentially be due to unequal error variance for the psychological/interpersonal stressor factor.

Correlations between BSSI and criterion variables. The means, standard deviations, and zero-order correlations between the three BSSI factors and the dependent variables are presented in Table 2. The correlations suggest that race-related and general stress were similarly related to psychological adjustment. Specifically, the GSI was significantly related to all three factors. Academic stressors were related to 1st-year GPA. Two of the BSSI factors were not related to the Emotional Stability (neuroticism) scale of the Big Five; psychological/interpersonal stressors, however, were moderately related to neuroticism.

MAIN ANALYSES

Prior to conducting the two multiple regression analyses to test the hypotheses, diagnostic statistical analyses were performed on the data to ensure that hierarchical multiple regressions would be meaningful and appropriate for this data set. Specifically, the data were evaluated for normality and homoscedasticity, for the presence of possible curvilinear relationships between criterion and predictor variables, and for influential variables. Estimates of

TABLE 2
Means, Standard Deviations, and Zero-Order Correlations
Between the Black Student Stress Inventory (BSSI) Factors
and the Psychoeducational Variables

<i>Variable</i>	M	SD	n	<i>BSSI-R</i>	<i>BSSI-P/I</i>	<i>BSSI-A</i>
BSSI-R	58.11	24.59	260			
BSSI-P/I	44.37	17.98	260	.61*		
BSSI-A	31.93	12.05	260	.40*	.47*	
GSI	.65	.52	128	.30*	.50*	.25*
Neuroticism	101.14	16.41	106	-.13	-.47*	-.17
GPA	2.58	.68	92	.17	.18	-.19
ACT	20.09	3.83	92	.05	.06	.03

NOTE: BSSI-R = race-related, BSSI-I/P = interpersonal/psychological, and BSSI-A = academic; BSSI scores can range from 1 to 6. GSI = Global Symptom Index; scores can range from 0 to 4. Neuroticism = Emotional Stability subscale of the Big Five; scores can range from 20 to 180. GPA = grade point average; scores can range from 0 to 4. ACT = American College Test. (Both GPA and ACT were retrieved via archival records.)

* $p < .005$.

skewness and kurtosis were obtained for each variable, and histograms of each variable were examined for variations from normality. All measured variables met accepted criteria for normality, and histograms did not deviate significantly from the normal curve. In general, points on the residual scatterplot were evenly distributed, suggesting the data set was homoscedastic and the relationship between predictor and criterion variables was linear. Analyses of Cook's D, leverage, and standardized betas for the most part revealed no or little influential observations. On the basis of these preliminary analyses, a decision was made to proceed with the regressions with the data intact.

To test the first hypothesis stating that both general and race-related stress would be related to psychological adjustment, a simultaneous multiple regression analysis was performed with the three BSSI factors as the predictor variables and the GSI as the criterion variable. The analysis was significant, $F(3, 102) = 11.607$, $p < .001$, and accounted for 26% of the variance. The test of beta weights indicated that Factor 2 (psychological/interpersonal) was a

TABLE 3
Beta Weights, t , R^2 , and Omnibus F of
Multiple Regression Analyses Predicting GSI and GPA

<i>Criterion</i>	<i>n</i>	<i>Predictor</i>	β	<i>t</i>	R^2	<i>Omnibus F</i>
GSI	106	BSSI-R	.01	0.12	.26	11.61*
		BSSI-I/P	.48	4.51*		
		BSSI-A	.04	0.40		
GPA	68	ACT	.14	1.24	.15	2.86**
		BSSI-R	.19	1.34		
		BSSI-I/P	.19	1.35		
		BSSI-A	-.33	-2.62**		

NOTE: BSSI-R = race-related, BSSI-I/P = interpersonal/psychological, and BSSI-A = academic. BSSI = Black Student Stress Inventory; GSI = Global Symptom Index; GPA = grade point average; ACT = American College Test.
 * $p < .005$. ** $p < .05$.

unique predictor, $\beta = .480$, $t(102) = 4.51$, $p < .001$ (see Table 3). To test Hypothesis 2 suggesting that general and race-related stress would account for a significant amount of variance in 1st-year GPA, a simultaneous multiple regression was performed with ACT and the three BSSI factors as the predictor variables and GPA as the criterion variable. Results indicated that the GPA analysis was significant, $F(4, 64) = 2.863$, $p = .030$, and accounted for 15% of the variance. Tests of the beta weights indicated that the academic stress factor was a unique predictor of GPA, $\beta = -.334$, $t(64) = -2.623$, $p = .011$ (see Table 3).

To examine if the BSSI was related to persistence, a MANOVA with 4th-year enrollment status (i.e., students who persisted until their 4th year at the specified university vs. students who discontinued enrollment at the university during or after the end of their 1st year) as the independent variable and the three BSSI factor scores obtained was performed. Results were nonsignificant, suggesting that students who continued attending the Midwestern university and those who did not persist at the university did not differ on perceived general and race-related stressors in their 1st year.

DISCUSSION

The results of this study provide additional information about perceived stress among Black American college students attending PWIs. In particular, findings provide new psychometric information about the BSSI. Edmunds (1994) constructed BSSI items based on interviews as well as extensive literature and divided the items into six domains of stressors: financial, academic, environmental, personal, interpersonal, and career. The results of our analysis, however, suggested that the BSSI may be best conceptualized as three domains of stressors: race-related stressors, psychological/interpersonal stressors, and academic stressors. Moreover, findings confirm assertions in the literature (e.g., Anderson, 1991; Saldaña, 1995) that it may be useful to examine both general and race-related stressors among racial minority college students. Although racial minority college students experience the typical developmental tasks of college students, they also often experience race-related stressors such as racial discrimination, feelings of isolation, and sensitive comments at PWIs (e.g., Ancis et al., 2000; D'Augelli & Hershberger, 1993; Henderson, 1988; Sedlacek, 1999). Our findings suggest that not only do Black students report these racial issues, but these experiences, in addition to the more general college-related stressors, are in fact perceived as stressful.

As predicted, we found that greater perceived stress in each of the three domains assessed was related to increased psychological distress and, moreover, that psychological/interpersonal stressors accounted for a unique amount of variance in level of psychological distress. These findings are consistent with a growing body of literature documenting the link between perceived stress and psychological distress among college students (e.g., Bartle-Haring, Rosen, & Stith, 2002; Beasley, Thompson, & Davidson, 2003), workers (e.g., Hogan, Carlson, & Dua, 2002), and families (e.g., Broman, 2001). Given the clear relationship between level of stress, particularly psychological/interpersonal stress, and psychological distress among Black students, it seems important to further efforts on PWI campuses to find ways to reduce levels of stress. Programs

designed to address stress related to relationships, including Black male/female relationships, as well as stress related to feelings of loneliness, isolation, and self-esteem would be particularly helpful. In the same vein, finding ways to encourage points of connection on campus for Black students may also assist in decreasing levels of psychological and interpersonal stress.

It is important to note that given the moderate intercorrelation among the BSSI factors (.51 to .62), the chances of finding unique variance due to more than one factor are lower than if the factors were not correlated. In addition, this type of factor structure is also more likely to be associated with suppressor variables. We checked this possibility in our data and found some evidence for this hypothesis on general psychological distress. An examination of the partial correlations between the BSSI factors and GSI revealed that partial correlations were considerably lower than their corresponding zero-order correlation. When the psychological/interpersonal factor was removed from the model, race-related and academic stressors accounted for 10% of the variance in the adjusted model, $F(2, 103) = 5.67, p < .005$; the race-related factor was marginally significant as a unique predictor, $b = .004, t = .054$. In short, the data from this study suggest that the BSSI factors are interrelated and may be difficult to separate in students' perceptual field (e.g., race-related stressors might covary with psychological/interpersonal stressors and vice versa); future research that examines possible suppressor variables among the BSSI factors might elucidate more complex relations among types of stressors for Black students. Moreover, we encourage future researchers to consider race-related outcome variables, such as racial self-esteem. It may be that increased race-related stress may be related to racial dimensions of personal and environmental adjustment.

Our finding suggesting that academic stress was the only unique predictor of 1st-year GPA, even when ACT scores were considered, adds to the growing literature questioning the predictive validity of standardized assessments on academic performance of Black students attending PWIs (see Flemming, 2002). In our sample, concerns related to time management, test anxiety, and assign-

ment completion were more important in predicting GPA than were ACT scores. Other processes (e.g., academic efficacy) may underlie the academic stressors measured on the BSSI, but these stressors were not related to academic ability per se as evidenced by the nonsignificant relationship between BSSI-A and ACT. Although the overall regression model with ACT scores and the three BSSI factors on 1st-year GPA was significant, only 15% of the variance was accounted for. This means that 85% of the variance remained unexplained. Future researchers may want to consider the influence of additional noncognitive variables such as academic orientation (e.g., Smith & Lalonde, 2003).

In addition to being related to pertinent psychoeducational adjustment variables, we also found that the BSSI factors, for the most part, were unrelated to irrelevant constructs. Specifically, the results also suggest that the BSSI factors are not simply another measure of neuroticism as measured by the Emotional Stability factor of the Big Five (Goldberg, 1992). This is particularly the case with the race-related and academic stress factors for Black students, as these correlations were $-.13$ and $-.18$, respectively. Thus, Black college students at PWIs at high levels of distress do not acknowledge higher levels of race-related or academic stress. The psychological/interpersonal factor was moderately correlated with neuroticism ($-.46$), suggesting that these constructs do share some common variance (about 20%). This finding is consistent with previous research that people with high levels of neuroticism are more likely to report distress (Watson & Tellegen, 1985). In sum, the BSSI does not seem to be another measure of neuroticism; although the psychological/interpersonal factor is moderately correlated with neuroticism, most of the variance remains unaccounted for by neuroticism. Thus, these results provide an estimate of discriminant validity for the BSSI.

In our sample, perceived stress during the 1st year of college did not predict students' retention at a Midwestern PWI. This means that level of race-related, psychological/interpersonal, or academic stress was not related to students' decision to persist at the university or to leave the institution. Clearly, attrition from college cam-

poses is a complex phenomenon and includes multiple concerns such as financial aid opportunities and level of satisfaction with campus life (Piotrowski & Perdue, 1998; Sailes, 1993). Also, it may be that level of stress is only relevant in the year that an individual decides to discontinue enrollment in the university. The subsample that we used in the analysis only included 1st-year students and we did not have a large enough sample size to determine if level of perceived stress was related to students' decision to drop out before the 2nd year. Future researchers may want to use a larger sample size and to assess other noncognitive variables in addition to level of stress to gain a better perspective of the potential role of stress in attrition of Black college students from PWIs.

Although this study is a modest step in providing information about the role of perceived stress in Black students' adjustment to predominantly White institutions, there are a number of noteworthy limitations to this study. The results are based on samples of Black college students at four PWIs in the Midwest; additional research is needed to determine the generalizability of the results to students attending other institutions, perhaps comparing the experiences of students attending PWIs to those attending historically Black colleges and universities. One of the related goals of the related study was to provide psychometric information on the BSSI, as there are few psychometrically sound scales designed to assess general and race-related stress. Although the estimates of validity obtained in this study for the BSSI are encouraging and promising, as with any new inventory, additional studies are needed to establish a broader psychometric assessment of the BSSI. In our study, we accounted for a significant amount of variance in psychological distress and academic performance; however, the majority of variance was accounted for by variables not considered in this investigation. To address this, additional research is needed to explore more complex models of stress in Black college students at PWIs, studies in which potential mediating and moderating factors are included to help add a layer of complexity to our understanding of direct and indirect roles of perceived stress on Black college students' adjustment.

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