Reliability and Structural Validity of Cross Racial Identity Scale Scores in a Sample of African American Adults

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In this article, the authors examine the internal consistency and structural validity of scores on the Cross Racial Identity Scale (CRIS; Vandiver et al., 2000; Worrell, Vandiver, & Cross, 2000) in a sample of 105 adults. Exploratory factor analyses provided support for the six-factor structure of the CRIS. Reliability estimates for the scores were in the high to moderate range, and subscale intercorrelations were low. The authors conclude that the evidence supporting the CRIS is strong and recommend that the examination of CRIS scores be extended into other areas of construct validity.

Keywords: *CRIS; nigrescence; racial identity; reliability validity*

The publication of Cross's (1971; Hall, Freedle & Cross, 1972) nigrescence theory can be described as a pivotal moment in the literature on African American racial identity attitudes (Helms, 1990). In brief, the original nigrescence model described the movement of African American identity attitudes from perspectives placing low salience on race, through an encounter experience or series of experiences, to internalized attitudes where the

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salience of race in American culture is recognized. Originally conceived of as a stage theory, Cross argued that individuals moved through five stages: preencounter, encounter, immersion-emersion, internalization, and internalization commitment. Cross also noted that the movement from preencounter to internalized attitudes was accompanied by an increase in psychological well-being and self-esteem.

Cross (1971) argued that individuals in the preencounter stage de-emphasize their Black heritage and actively try to assimilate into White American society. The encounter stage occurs as individuals come to recognize the importance of race in American society. Individuals in Stage 3, immersion-emersion, make a polar shift in terms of attitudes and behavior, glorifying Black culture and vilifying White mainstream values. In Stage 4, internalization, individuals have secure Black identities, which result in specific actions in Stage 5, internalization commitment. (See Cross, 1971, and Vandiver and Worrell, 2001, for more detailed descriptions of the original nigrescence model.)

Nigrescence theory remained an intriguing idea until the publication of the Black Racial Identity Attitude Scale (RIAS-B; Parham & Helms, 1981), an instrument designed to operationalize the 1971 nigrescence model. The availability of the RIAS-B led to an explosion of research studies (including more than 30 dissertations) and placed the nigrescence model in the vanguard of scholarship on African American identity. PsycINFO searches in 2003 using the term *Black racial identity* retrieved more studies based on Cross' (1971) model than on any other.

Using the RIAS-B, researchers have examined the relationship between the nigrescence identities and variables such as social class (Carter & Helms, 1988), Afrocentric values (Brookins, 1994), racial socialization (Stevenson, 1995), and psychological distress (Neville & Lily, 2000), to name a few. Additionally, research using the RIAS-B has been conducted in adolescents (Clyburn, 1999; Cole, 1998; Cosby, 1999), gay men and lesbians (Walters & Simoni, 1993), college students (Burt, 1999; Campbell, 1997; Dartson, 1999; Neville & Lily, 2000; Rosser, 1999; Sanchez, 2002; Webster, 2002), people with drug addictions (McLellan & Randall, 2002; Pena, Bland, Shervington, Rice, & Foulks, 2000), and other populations.

REVISIONS TO NIGRESCENCE THEORY

In 1991, Cross published a revised nigrescence model. In this model, Cross (1991, 1995) changed the conceptualization of nigrescence from a developmental stage theory—that is, one with an invariant sequence of stages, each of which represents a qualitative shift in thinking—to an

attitudinal theory, with preencounter, internalization, and so on representing predominant themes in individuals' attitudes. He also merged the internalization and internalization commitment stages and acknowledged that there could be multiple identities under each heading. Cross (1991) identified two preencounter (assimilation and anti-Black), two immersion-emersion (intense Black involvement and anti-White), and three internalization (Black nationalist, bicultural, and multicultural) identity attitudes.

Finally, using the empirical literature as a base, Cross (1991) decoupled personal or individual identity and social identity. Much of the racial identity research to date had examined the relationship between global self-concept, or self-esteem (a personal identity [PI] variable), and racial identity (a social identity variable) based on the hypothesis that preencounter attitudes would be negatively correlated with self-esteem and that internalization attitudes would be positively correlated with self-esteem. This hypothesis was in keeping with Cross's (1971) conceptualization that preencounter identities were anti-Black and internalization identities were pro-Black; thus, movement from preencounter to internalization represented movement from disliking an important personal reference group to embracing one's group identity. However, in 1991, Cross pointed out that PI or general personality variables, such as self-esteem, were not correlated with social identity or reference group orientation (RGO) measures such as nigrescence attitudes in most cases. He theorized that RGO and PI would be related only when an individual's reference group had specific implications for his or her personal identity, as in the case of the preencounter anti-Black identity where an individual's PI is negatively affected by his or her RGO because he or she dislikes the reference group to which he or she belongs. Moreover, he argued that there would be no relationship between low-salience racial identity attitudes such as assimilation and self-esteem or other personality variables. Cross' (1991) contention that there would be no relationship between personality variables and nigrescence attitudes other than self-hatred has recently received empirical support (Vandiver, Cross, Worrell, & Fhagen-Smith, 2002).

In the mid-1990s, Cross and colleagues (Cross & Vandiver, 2001; Vandiver & Worrell, 2001) began developing an instrument to measure the revised nigrescence model. However, in the process of developing the cross racial identity scale (CRIS) (Vandiver et al., 2000; Worrell, Vandiver, & Cross, 2000), the revised nigrescence theory, informed by research findings, evolved into the expanded nigrescence model (Cross & Vandiver, 2001). The primary change from the revised (Cross, 1991, 1995) to the expanded (Cross & Vandiver, 2001; Worrell, Cross, & Vandiver, 2001) nigrescence model was an expansion of the number of identities under each attitudinal heading. The

expanded model acknowledges three preencounter (assimilation, miseducation, and self-hatred), two immersion-emersion (anti-White and intense Black involvement), and four multicultural identity attitudes (biculturalist, Afrocentric, multiculturalist racial, and multiculturalist inclusive; see Table 1 on p. 202 of Worrell et al., 2001).

Only six of the nine purported nigrescence attitudes are measured on the CRIS. Vandiver et al. (2002) argued that individuals are likely to have multiple attitudes; therefore, the biculturalist attitude reflects the comprehensiveness of the theory rather than an identity to be measured. Moreover, because many of the possible alternative identities fall outside of the nigrescence model (e.g., gender-, religious-, or sexual-orientation-related identities), it is not practical to develop a biculturalist scale. Subscales measuring intense Black involvement and multiculturalist racial attitudes are still in development (see Vandiver et al., 2002; Worrell et al., 2001).

VALIDITY OF CRIS SCORES

The CRIS went through an extensive process of scale development, including item development and refinement, studies of internal consistency estimates of subscale scores, structural validity studies using both exploratory and confirmatory factor analytic procedures, and convergent and discriminant validity analyses with measures of racial identity, self-concept, personality, and social desirability. This development process is documented in Cross and Vandiver (2001), Vandiver and Worrell (2001), and Vandiver et al. (2002). Vandiver et al. stated that as the CRIS is a new instrument, it "remains relatively untested," and "further examination of [its] psychometric properties is necessary to warrant its use over time" (p. 83). This call for additional research on the CRIS (Vandiver et al., 2002; Worrell et al., 2001) established the purpose for this study.

However, beyond the comment by Vandiver et al. (2002) is the broader need to examine the construct validity of any instrument's scores in different populations (Smith & McCarthy, 1995), a process that involves at a minimum using reliability estimates, exploratory and confirmatory factor analytic analyses, generalizability theory, and multitrait and multimethod studies (Benson, 1998). Meehl (1990) strongly criticized the use of instruments with invalidated scores to test explanatory theories in clinical, counseling, personality, and social psychology. He pointed out that it is not appropriate to "validate a psychometric instrument and corroborate a substantive theory" in the same study if only because "the internal network of most experiments is not sufficiently rich to make a strong [validity] argument" (p. 216), an argument that he first put forward almost a half century ago (Cronbach & Meehl, 1955).

Given the propensity to relate racial identity attitudes to a myriad of other constructs, as demonstrated in the extant research literature, it is incumbent on researchers to establish a solid foundation of validity evidence for CRIS scores.

THE PRESENT STUDY

Like many other instruments measuring attitudes, the development samples of the CRIS consisted primarily of undergraduate students. The predominance of undergraduates in scale development samples is merely the result of easy access—scale development typically takes place in the context of university-based research by graduate students and faculty. Moreover, given its short history, there is relatively little research on the CRIS in the extant literature outside of the original scale development studies. In this study, we examined the internal consistency and structural validity of CRIS scores in a sample of adults that did not include any undergraduate students. Based on the strong psychometric properties reported for CRIS scores (Cross & Vandiver, 2001; Vandiver, Fhagen-Smith, Cokley, Cross, & Worrell, 2001; Vandiver et al., 2002; Worrell et al., 2000), it was hypothesized that CRIS scores in this study would have internal consistency estimates of at least .70, and that the six-factor structure reported by the authors would be supported.

METHOD

PARTICIPANTS

The sample consisted of 105 adults (71% female) ranging in age from 22 to 60 years of age (M = 34.1, SD = 12.3). The majority of participants self-identified as African American (71.4%) or Black (20%), with much fewer calling themselves African (2.9%), West Indian (1.9%), mixed (1.9%), or not providing an ethnic self-designation (1.9%). Ninety-one percent of the sample were U.S. citizens, and 6% were permanent residents of the United States. Fifty-eight participants (55.2%) were in graduate school, and the other 47 participants were not attending school. The mean age of the graduate students was 28.1 years (SD = 7.3), and 25.9% of them were male. African American (70.7%) and Black (19%) were the two most frequent ethnic designations chosen by the graduate students. Twenty percent of the graduate students were attending historically Black institutions, and 80% were attending historically White institutions.

Eighty-four percent of the graduate students reported personal incomes, with the modal income for these students falling between $10,000 and $20,000, with 80% having incomes less than $30,000. Sixty-four percent of them also reported family income. Thirty percent of the family incomes were less than $40,000, 30% were between $40,000 and $60,000, and 40% had families with incomes of more than $60,000. Participants who were not attending school ($n = 47$) were older than the graduate students ($M = 41.6$, $SD = 13.3$, $t(103) = -6.6$, $p < .001$). Only 55% of this group reported incomes, and they reported higher personal incomes than the graduate students, $\chi^2(5) = 33.81$, $p < .001$, with 69% of this group reporting incomes greater than $30,000. The nonstudent group, which was 31.9% male, did not differ from the graduate student group on gender representation, $\chi^2(1) = 0.47$, $p > .05$. Of the 37 nonstudents who reported highest educational level obtained, 66.7% had a professional or graduate degree, 22.3% had a bachelor's degree, and 11.1% had not attained a bachelor's degree.

MEASURES

All participants completed the CRIS (Vandiver et al., 2000; Worrell et al., 2000) and a demographic form. The demographic questionnaire had traditional questions on gender, age, racial or ethnic self-identification, and income. Participants attending schools were also asked questions about their class standing and the composition of the student bodies at the schools they were attending.

The CRIS is a 30-item instrument developed to measure six of the nine nigrescence attitudes proposed in the expanded nigrescence model (Cross & Vandiver, 2001; Vandiver et al., 2002; Worrell et al., 2001). The six subscales are preencounter assimilation (PA), preencounter miseducation (PM), preencounter self-hatred (PSH), immersion-emersion anti-White (IEAW), internalization Afrocentricity (IA) and internalization multiculturalist inclusive (IMCI). Table 1 contains sample items for each subscale. Each of the six attitudes on the CRIS is measured by five items, which are randomly distributed among the 40 items (30 CRIS items and 10 filler items). Responses to CRIS items are on a 7-point Likert-type scale with numerical and verbal anchors. Subscale scores are obtained by summing scores on the five items that make up each subscale and dividing by five, resulting in total scores ranging from one to seven.

There is substantial reliability and validity information for CRIS scores (Cross & Vandiver, 2001; Vandiver et al., 2002; Vandiver & Worrell, 2001; Worrell et al., 2000). The six-factor structure has been supported in three independent samples using both exploratory and confirmatory factor analyses,

TABLE 1
Sample Cross Racial Identity Scale Items

Preencounter assimilation
I am not so much a member of a racial group, as I am an American.
Preencounter miseducation
Blacks place more emphasis on having a good time than on hard work.
Preencounter self-hatred
Privately, I sometimes have negative feelings about being Black.
Immersion-emersion anti-White
I have a strong feeling of hatred and disdain for all White people.
Internalization Afrocentricity
I see and think about things from an Afrocentric perspective.
Internalization multiculturalist inclusive
As a multiculturalist, I am connected to many groups (Hispanics, Asian Americans, Whites, Jews, gay men and lesbians, etc.).

with item coefficients on factors in the .5 to .9 range (Vandiver et al., 2001, 2002). CRIS scores have been shown to be independent of social desirability and the big five personality factors, and only PSH was found to have a meaningful (i.e., > .30) correlation with self-esteem (Vandiver et al., 2002). Scores on the six subscales have low intercorrelations (*Mdn r* = .16) and moderate to high internal consistency coefficients ($.78 \leq \alpha \leq .90$; Vandiver et al., 2002; Worrell et al., 2000).

Convergent validity analyses with the multidimensional inventory of Black identity (MIBI; Sellers, Smith, Shelton, Rowley, & Chavous, 1998) also provided construct validity support for CRIS scores (Vandiver et al., 2002; Worrell et al., 2000): PA scores were positively correlated with the humanist (commonalities among humans) scores on the MIBI and negatively correlated with centrality (salience of an African American identity) and nationalist scores; IEAW and IA scores had positive correlations with the MIBI's nationalist scores, and IMCI scores had positive correlations with the humanist and oppressed minority (connections among oppressed minority groups) subscales on the MIBI. Moreover, not only did all of these relationships make theoretical sense, but also they were predicted a priori by Vandiver et al. (2002).

PROCEDURE

Using the CRIS alongside measures that were important for their individual projects, three graduate students collected the data used in this study for their dissertation projects. Data were collected at a number of university sites, including classrooms and offices. The first dissertation project, which

contributed 66% of the current sample, had 431 participants. The majority of these (57%) were students attending a historically Black college in the Southeast, and the other 43% were attending a predominantly White university in the Midwest. Participants who indicated they were graduate students or not attending school were selected for inclusion in the current study. The second dissertation project, which contributed 24% of the sample ($n = 25$), consisted of 181 female college students from eight universities and colleges in the West, Northeast, and Southeast. Thirteen percent of the participants were graduate students. The remaining participants in this study were from a dissertation project sample of 266 Black males. Nine of these participants were not undergraduates and were included in this study.

Across the data collection sites, participants were recruited through various methods, including student organization Web sites and meetings, undergraduate classes, flyers on bulletin boards in dormitories and university offices, and personal requests at student meetings. Incentives provided for participation ranged from extra credit in courses and research participation credits to $2.00 for nonstudent participants. Research assistants, including the student researchers, supervised participants when they were completing the measures so that any questions or concerns could be dealt with, and all studies were approved by institutional review boards. All researchers were provided with the standard instructions for completing the CRIS.

RESULTS

PRELIMINARY ANALYSES

Individual item means ranged from 1.4 to 6.0, with means on IMCI and IA items generally higher than on the other subscales. Item standard deviations were in the 1.0 to 2.0 range, and most items had distributions that were normal. Three items had skews above 3.0, and nine items had kurtosis scores above 3.0. The means for the subscales ranged from 1.74 to 5.45 (see Table 2), and only one subscale had a kurtosis value above 3.0 (i.e., anti-White = 4.46). Subscale intercorrelations ranged from |.01| to |.35| (*Mdn r* = .19), with the largest correlation indicating a positive relationship between anti-White and Afrocentricity scores and accounting for about a 12% shared variance. Correcting the correlations for reliability attenuation yielded slightly increased intercorrelations (*Mdn r* = .23, see Table 2), but no adjusted correlation was higher than .42.

TABLE 2
Descriptive Statistics of Cross Racial Identity Scale Scores

	PA	*PM*	*PSH*	*IEAW*	*IA*	*IMCI*	M	SD	*95%* CI
PA	(.83)	.40	.38	–.10	–.25	.01	3.01	1.45	.78 to .88**
PM	.32	(.77)	.42	.25	.23	–.16	3.05	1.22	.69 to .83*
PSH	.29	.31	(.70)	.41	.01	.07	1.74	0.83	.60 to .78
IEAW	–.08	.20	.31	(.83)	.42	–.16	1.68	0.89	.78 to .88**
IA	–.21	.19	.01	.35	(.85)	–.20	3.46	1.33	.80 to .89**
IMCI	.01	–.12	.05	–.13	–.16	(.77)	5.45	1.05	.69 to .83*

NOTE: PA = preencounter assimilation; PM = preencounter miseducation; PSH = preencounter self-hatred; IEAW = immersion-emersion anti-White; IA = internalization Afrocentricity; IMCI = internalization multiculturalist inclusive; CI = confidence interval. $N = 105$. Alpha coefficients are presented on the diagonal, observed correlations are presented below the diagonal, and correlations corrected for attenuation are presented above the diagonal. The numbers in parentheses in the diagonal are reliability coefficients and not simple correlation coefficients.
*$p < .05$. **$p < .001$

RELIABILITY ESTIMATES

Reliability estimates for the six CRIS subscale scores were calculated using Cronbach's (1951) alpha; these coefficients can be found in Table 2. The estimates ranged from .70 to .85 (*Mdn* $\alpha = .80$), with three of the scores obtaining estimates greater than .80. Based on Fan and Thompson's (2003) recommendation, 95% confidence intervals and tests of significance for $\alpha > .70$ are also reported for the internal consistency estimates. As can be seen in Table 2, the median lower bound estimate is in the .70 range, the median upper bound estimate is in the .80 range, and five of the six reliability estimates were significantly greater than .70 at least at the .05 level. Construct reliability estimates were also calculated for the six scores based on the salient loadings from the factor analysis. These estimates, which can be found in Table 3, were similar, ranging from .69 to .86 (*Mdn* = .82).

FACTOR ANALYSES

Exploratory factor analyses using principal axis extraction were used to examine the structure of the CRIS item scores. Bartlett's test of sphericity was significant, $\chi^2(435) = 1458.76$, $p < .001$, and Kaiser's (1974) measure of sampling adequacy was .70, indicating that the correlation matrix of CRIS item scores was factorable (Tabachnick & Fidell, 2001). Communality estimates were in the moderate to high range (see Table 3; *Mdn* = .57), and the

TABLE 3
Six-Factor Structure Coefficients from Principal Axis Extraction and Oblimin Rotation of Cross Racial Identity Scale Scores

	Factor 1 *IEAW*	*Factor 2* *PA*	*Factor 3* *IMCI*	*Factor 4* *IA*	*Factor 5* *PM*	*Factor 6* *PSH*	h^2
IEAW14	*.84*	–.06	–.07	.28	–.17	–.22	.72
IEAW30	*.80*	–.28	–.01	.18	–.19	–.27	.65
IEAW6	*.70*	–.13	–.08	.16	–.15	–.15	.50
IEAW23	*.65*	.04	–.03	.23	–.21	–.09	.44
IEAW38	*.61*	–.10	–.19	.33	–.07	–.19	.45
PA2	–.14	*.76*	–.05	–.12	–.21	–.11	.60
PA18	.08	*.72*	–.07	–.35	–.26	–.19	.60
PA26	–.02	*.71*	.15	–.05	–.11	–.19	.55
PA9	–.07	*.70*	–.12	–.13	–.32	–.27	.54
PA34	–.01	*.64*	.07	–.24	–.36	–.28	.49
IMCI33	–.06	–.03	*.88*	–.16	.15	.00	.78
IMCI40	–.13	.04	*.79*	–.03	.06	–.08	.64
IMCI16	–.04	–.00	*.63*	.01	–.01	–.21	.44
IMCI5	.07	.11	*.55*	–.27	.08	.03	.39
IMCI24	–.36	–.27	*.44*	–.01	.22	–.00	.39
IA37	.15	–.07	–.08	*.86*	–.18	.02	.75
IA31	.24	–.13	–.14	*.84*	–.19	–.07	.73
IA22	.23	–.14	–.13	*.84*	–.20	.03	.72
IA13	.25	–.11	–.16	*.59*	–.31	–.14	.43
IA7	.24	–.27	–.00	*.55*	.17	.23	.44
PM20	.21	.14	–.10	.19	*–.73*	–.06	.57
PM28	.13	.17	–.02	.16	*–.70*	–.24	.49
PM12	.17	.15	–.11	.09	*–.68*	–.22	.47
PM3	–.03	.24	–.10	.02	*–.55*	–.27	.34
PM36	.17	.33	–.06	.12	*–.55*	–.23	.35
PSH10	.13	.13	.21	–.03	–.27	*–.75*	.60
PSH25	.19	.38	–.12	.03	–.29	*–.65*	.52
PSH39	.11	.24	.04	–.09	–.18	*–.56*	.33
PSH17	.35	.08	.06	.02	–.11	*–.40*	.24
PSH4	.32	.03	–.01	.05	–.24	–.39	.23
Eigenvalues	4.78	4.00	2.41	1.99	1.22	1.01	
% variance	15.92	13.33	8.03	6.62	4.06	3.38	
Construct α	.85	.83	.80	.86	.78	.69	
Factor Correlation Matrix							
Factor 1	—						
Factor 2	–.02	—					
Factor 3	–.08	–.02	—				
Factor 4	.21	–.19	–.11	—			
Factor 5	–.18	–.28	.12	–.13	—		
Factor 6	–.19	–.21	–.07	.02	.29	—	

NOTE: N = 105. PA = preencounter assimilation; PM = preencounter miseducation; PSH = preencounter self-hatred; IEAW = immersion-emersion anti-White; IA = internalization Afrocentricity; IMCI = internalization multiculturalist inclusive; h^2 refers to the extraction communality estimates. Salient loadings are italicized.

variable to factor ratio was approximately 20:3, indicating that a sample size of at least 100 would result in an admissible and convergent solution (MacCallum, Widaman, Zhang, & Hong, 1999).

Based on Thompson and Daniel's (1996) recommendation, multiple criteria were used to determine the number of factors to extract, including the eigenvalue rule (eight factors), the scree test (six factors), parallel analysis (five factors; Lautenschlager, 1989; Watkins, 2000), and the underlying theory (six factors; Cross & Vandiver, 2001). Based on the recommendations of Tabachnick and Fidell (2001), a coefficient of .4, indicating at least 16% shared variance, was used for establishing the salience of items on a factor. Because parallel analysis is generally more accurate than the eigenvalue rule (Comrey, 1988; Floyd & Widaman, 1995; Thompson & Daniel, 1996), and because the CRIS is based on a six-factor structure, five- and six-factor solutions were extracted. Both orthogonal and oblique rotations were examined, as similar solutions across different methods provide stronger support for the results.

The structure coefficients from the six-factor oblique rotation are reported in Table 3. As can be seen, 29 of the 30 items obtained salient coefficients on the appropriate factors, with one PSH item loading at .39. No item had salient loadings on more than one factor, and only 4 of the 30 items had structure coefficients below .50. Factor intercorrelations were all below .30, with a median intercorrelation of |.13|, and construct reliability estimates based on salient loadings were in the moderate to high range as well. These results mirrored the results from the orthogonal rotation—26 items had pattern-structure coefficients greater than .50, two PSH items had loadings below .40 (both in the high .3 range) on that factor, and no items had salient cross-loadings. This solution accounted for 51.3% of the variance in the scores.

The five-factor structure, which accounted for 47.5% of the variance in the scores, was extracted next. In the orthogonal analysis, items from five of the scales loaded on separate factors—assimilation, miseducation, anti-White, Afrocentricity, and multiculturalist. However, the PSH factor did not emerge. Two of the five PSH items had their highest pattern-structure coefficients on the IEAW factor; two had their highest pattern-structure coefficients on the PA factor; and one obtained its highest pattern-structure coefficient on the PM factor. Moreover, three of the five PSH items' pattern-structure coefficients were not salient (i.e., they were less than .40). The results for the oblique extraction were similar (see Table 4). PSH items spread across three factors: one item (No. 39) cross-loaded on two factors, one (No. 25) failed to obtain a salient structure coefficient, and all PSH items had the lowest coefficients on the factor on which they loaded, falling below .50 and substantially below the other salient coefficients on those factors.

TABLE 4
Five-Factor Structure Coefficients from Principal Axis Extraction and Oblimin Rotation of Cross Racial Identity Scale Scores

	Factor 1 IEAW and PSH	*Factor 2 PA and PSH*	*Factor 3 IMCI*	*Factor 4 IA*	*Factor 5 PM and PSH*	h^2
IEAW14	*.83*	–.03	–.07	.27	–.16	.71
IEAW30	*.80*	.01	–.01	.16	–.19	.65
IEAW6	*.69*	–.11	–.08	.15	–.14	.49
IEAW38	*.61*	–.07	–.19	.31	–.09	.45
IEAW23	*.61*	.04	–.05	.23	–.17	.39
PSH17	*.42*	.14	.10	–.02	–.18	.21
PSH4	*.40*	.09	.04	.01	–.31	.21
PA2	–.10	*.75*	–.04	–.13	–.20	.60
PA9	.00	*.72*	–.07	–.16	–.35	.54
PA18	.12	*.71*	–.05	–.36	–.25	.57
PA26	.03	*.71*	.17	–.07	–.12	.57
PA34	.06	*.66*	.11	–.27	–.38	.49
PSH25	.33	*.45*	–.03	–.05	*–.41*	.33
IMCI33	–.05	–.03	*.84*	–.16	.15	.72
IMCI40	–.08	.06	*.79*	–.05	.04	.64
IMCI16	.03	.04	*.66*	–.03	–.06	.45
IMCI5	.06	.10	*.51*	–.26	.11	.32
IMCI24	–.32	–.24	*.45*	–.03	.16	.36
IA37	.13	–.07	–.09	*.86*	–.15	.76
IA22	.20	–.14	–.14	*.84*	–.18	.72
IA31	.24	–.12	–.14	*.82*	–.20	.70
IA7	.16	–.30	–.05	*.59*	.22	.43
IA13	.27	–.09	–.15	*.57*	–.32	.42
PM28	.19	.20	.00	.14	*.68*	.48
PM12	.22	.18	–.08	.08	–.66	.45
PM20	.21	.15	–.10	.19	–.62	.41
PM3	.07	.27	–.06	–.01	–.58	.36
PM36	.22	.35	–.04	.10	*–.53*	.33
PSH10	.31	.25	.30	–.11	*–.41*	.32
PSH39	.24	.31	.12	–.16	–.30	.19
Eigenvalues	4.74	3.97	2.37	1.97	1.19	
% variance	15.81	13.23	7.90	6.57	3.96	
Construct α	.82	.83	.79	.86	.75	
Factor Correlation Matrix						
Factor 1	—					
Factor 2	.08	—				
Factor 3	–.01	.04	—			
Factor 4	.16	–.22	–.16	—		
Factor 5	–.28	–.34	.03	–.06	—	

NOTE: N = 105. PA = Preencounter assimilation; PM = preencounter miseducation; PSH = preencounter self-hatred; IEAW = immersion-emersion anti-White; IA = internalization Afrocentricity; IMCI = internalization multiculturalist inclusive; h^2 refers to the extraction communality estimates. Salient loadings are italicized.

Given the five-factor structure's departure from the theoretical model underlying the CRIS and the relative psychometric weaknesses of this model relative to the six-factor model (i.e., cross-loading items, more nonsalient loadings, lower structure coefficients), the six-factor solution was accepted. However, both are discussed in the next section.

DISCUSSION

In this study, we examined the internal consistency and structural validity of CRIS scores in a sample of African American adults. CRIS scores yielded reliability estimates in the moderate to high range, and a six-factor structure, as suggested by the authors (Vandiver et al., 2002; Worrell et al., 2000), proved to be the most viable. Moreover, subscale intercorrelations were in the low range, indicating that the subscales are measuring the identity constructs relatively independently. In sum, the hypotheses put forward at the beginning of this study were supported.

As indicated in the introduction, the purpose of this study was to examine the structure of CRIS scores in participants who were not undergraduates at a university. Although the six-factor structure of the CRIS was supported, empirical criteria suggested that a five-factor structure might also be viable. One possible explanation for this finding is a decrease in self-hating attitudes in older African Americans, making that subscale less viable, and PSH was the last factor to emerge in the six-factor solution. However, the clean pattern of the six-factor structure militates against accepting this argument, as does previous research on the CRIS. Vandiver et al. (2001) also reported a five-factor structure for CRIS scores. However, in that study, the PSH factor emerged as a separate factor. The PSH factor was also robust in another validity study (Vandiver et al., 2002) with structure coefficients for PSH items that ranged from .69 to .91 (*Mdn r* = .79). In light of previous findings and the clear-cut six-factor structure in this study, the most plausible explanations for the apparent viability of the five-factor structure are under extraction or sample characteristics.

The support for the structural validity and internal consistency of CRIS scores is promising for the instrument and for research on racial identity and its correlates. As noted earlier, it is important to establish the validity of instruments in studies that are solely focused on the psychometrics of instruments' scores before using those scores to examine theoretical relationships with other constructs (Cronbach & Meehl, 1955; Meehl, 1990). The reliability of scores has direct implications for the "accuracy and replicability of

reported effects" (Baugh, 2003, p. 35). For example, Lockett and Harrell (2003) recently reported that in spite of the numerous studies purporting a relationship between healthy racial identity and academic achievement, the unique contribution of internalization racial identity attitudes, as measured by the RIAS-B (Parham & Helms, 1981), to academic outcomes is very small.

This study had several limitations that should be noted. First, the sample consisted of individuals attending graduate school and individuals who were not in school; these groups did differ in age and on income level. Additionally, participants were from both historically Black and predominantly White institutions. Although there is no reason to believe that these differences affected the results obtained, future studies should examine CRIS scores in these groups independently. Third, because the data came from three different data collectors, there may be effects from differences in administration that are unknown.

Limitations notwithstanding, the results of the study provide support for the reliability and validity of CRIS scores in an African American adult sample. Thus, it may be time for researchers to move beyond studies examining the structural validity of CRIS scores in single samples and focus on broader questions, such as factorial invariance across gender and age groups and profile analysis across independent samples. The recent introduction of the CRIS (Vandiver et al., 2000; Worrell et al., 2000), which is based on the expanded nigrescence model (Cross & Vandiver, 2001), and the strong psychometric properties reported for the scores in samples to date (Vandiver et al., 2001, 2002) may herald the dawning of another renaissance in research on the nigrescence attitudes of African Americans.

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