

# Examination of a Measure of Racial Discrimination Among African American Adolescents<sup>1</sup>

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The present study consisted of an empirical examination of the psychometric properties of the Index of Race-Related Stress (IRRS) among 258 African American adolescents. Confirmatory factor analyses supported a 3-component model (i.e., individual, collective/institutional, and cultural) of racial discrimination perceived by African American adolescents. The revised subscales of the IRRS were associated with another measure of racial discrimination as evidence of concurrent validity, and the subscales of the IRRS demonstrated adequate reliability. The results are consistent with previous research indicating that adolescent responses to perceived racial discrimination are distinct from adults'. Future research should consider the assessment of racial discrimination among African American adolescents to understand the relationship between perceptions of racial discrimination and indexes of mental and physical health.

There is a burgeoning literature suggesting that perceived racism and racial discrimination are detrimental to the physical and mental health of African Americans (Krieger, 1990; Williams, Neighbors, & Jackson, 2003). Previous research has indicated that African American adolescents perceive incidents of racial discrimination (Romero & Roberts, 1998), and they are detrimental to their well-being (Gibbons, Gerrard, Cleveland, Wills, & Brody, 2004). However, one major issue concerns validation of racial discrimination measures (Williams et al., 2003), particularly among adolescent populations. The present study provides empirical evidence that a revised version of the Index of Race-Related Stress (Utsey & Ponterotto, 1996) assesses perceptions of racial discrimination among African American adolescents.

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Previous literature has argued that racism and racial discrimination are constant stressors for African Americans (Anderson, 1991). *Racism* is a system of dominance and power based on the beliefs, behaviors, and institutional arrangements that corroborate the superiority of certain racial/ethnic groups and denigrate others because of certain phenotypic characteristics (Clark, Anderson, Clark, & Williams, 1999). *Racial discrimination* consists of those practices and actions of dominant groups that have a differential and negative effect on subordinate ethnic groups (Feagin & Eckberg, 1980).

Previous research among African American adults has indicated that perceptions of racial discrimination are associated with hypertension (Krieger & Sidney, 1996) and a disinclination to maintain one's cultural heritage (Ruggiero, Taylor, & Lambert, 1996). Additional research has indicated that perceptions of racial discrimination are linked to depressive symptoms, anxiety, psychological distress, and somatic complaints (Bowen-Reid & Harrell, 2002). Furthermore, longitudinal research has indicated that perceptions of racial discrimination are related to subsequent changes in psychological distress among African American college students (Sellers & Shelton, 2003).

Surprisingly, few studies have investigated perceptions of racial discrimination among adolescent populations. Among immigrant adolescents in Finland, the majority attributed discriminatory acts to their ethnicity (Verkuyten, Kinket, & Wielen, 1997), and those who perceived higher levels of discrimination had lower levels of self-esteem (Verkuyten, 1998). Similarly, previous research has indicated that 91% of pre-adolescent African Americans reported experiencing at least one discriminatory experience in their lifetime (Gibbons et al., 2004).

Fisher, Wallace, and Fenton (2000) concluded that a majority of African American youth reported feeling harassed, being viewed as dangerous, being perceived as unintelligent, or being wrongly disciplined. Also, Romero and Roberts (1998) reported that African American adolescents perceived more racial discrimination than did their European American, Mexican American, and Vietnamese American peers (Romero & Roberts, 1998). Previous research has suggested that the majority of African American youth perceive that they are being discriminated against, though not all African American adolescents perceive that they are the victims of racial discrimination. However, one issue in the racial discrimination literature that needs to be addressed concerns instrumentation.

Williams et al. (2003) reviewed studies investigating the relationship between racial discrimination and health, and suggested that improvements were necessary in the assessment of racial discrimination. While the reviewed studies were conducted mainly among adults, this issue also applies to adolescent studies. For example, Romero and Roberts (1998) used two items

to assess perceptions of racial discrimination and did not report psychometric analyses for the items. Likewise, Fisher et al. (2000) created a measure of perceived racial discrimination and reported the results of an exploratory factor analysis, but additional psychometric analyses (e.g., confirmatory factor analyses) were not indicated.

In order to assess perceptions of racial discrimination and represent individuals' experiences adequately, psychometric analyses of measures are necessary. This is particularly true among populations that scarcely have been studied in the discrimination literature (e.g., adolescents; Williams et al., 2003). Although several instruments have been developed to assess perceptions of racial discrimination among African American adults (for a review, see Utsey, 1998), very few have been examined psychometrically among African American adolescents.

Recently, the properties of the Index of Race-Related Stress (IRRS; Utsey & Ponterotto, 1996) were examined psychometrically among an adolescent sample (Seaton, 2003b). The IRRS is a multidimensional measure of racial discrimination for African American adults with four dimensions: individual, cultural, collective, and institutional racism (Utsey & Ponterotto, 1996). *Individual racism* consists of personal and degrading actions experienced by minorities, which promote the belief that they are inferior (Jones, 1997). *Cultural racism* occurs when the beliefs and practices of the dominant group are regarded as superior to those of subordinate groups (Jones, 1997). *Institutional racism* constitutes differential access to societal goods, services, and opportunities, which results in racial inequities for minority-group members (Jones, 2000). Essed (1991) articulated that *collective racism* exists when dominant group members work to restrict or deny minority-group members their basic rights and privileges.

The IRRS (Utsey & Ponterotto, 1996) examines perceptions of racial discrimination and reactions to incidents of racial discrimination. Although the IRRS is a 46-item instrument, 36 items were utilized in the exploratory study among African American adolescents. Ten items were deleted because they were believed to be inappropriate for an adolescent sample. Examples of the deleted items include "Whites/non-Black people have been apologetic about the Japanese internment, Jewish Holocaust, and other violations of human rights, but would prefer to forget about slavery, Jim Crowism, and other abuses of Black people" and "You were refused an apartment or other housing; you suspect it was because you are Black." The first example was considered too sophisticated for early adolescents (i.e., 13–15 years), but more appropriate for older adolescents (i.e., 16–18 years). Yet, the questionnaire was revised for utilization with the entire range of adolescence. The second example could not be modified in a way to be more relevant for African American adolescents. Similarly, some of the questions were changed

in order to make them more relevant for adolescent experiences. An example of a changed item is “You did not receive a school award [originally “promotion”] you deserved; you suspect it was because you are Black.”

The 36-item revised IRRS (Utsey & Ponterotto, 1996) was administered to a sample of urban, African American adolescents ranging in age from 13 to 18 years. An exploratory factor analysis indicates that adolescent responses were consistent with a three-factor structure corresponding to individual, cultural, and collective/institutional racism (Seaton, 2003b). The results of the exploratory factor analysis also indicate that four items failed to meet statistical criteria, resulting in a 32-item measure among African American adolescents (Seaton, 2003b).

The purpose of the present study is to examine additional forms of validity for the revised IRRS (Utsey & Ponterotto, 1996) among African American adolescents. The first objective is to examine construct validity and to conduct a confirmatory factor analysis. A second objective is to examine concurrent validity of the revised IRRS with an additional measure of racial discrimination, the Perceived Racism Scale (PRS). Specifically, the subscales of the IRRS are examined in relation to the subscales of the PRS. The final objective is to examine the IRRS’s internal consistency and subscale intercorrelations.

## Method

### *Participants*

The participants in this study were 258 (153 female, 59%; 105 male, 41%) urban, African American adolescents ranging in age from 13 to 19 years. The sample had a mean age of 15.5 years ( $SD = 1.3$ ). As an indicator of family environment, the participants reported that their parent/guardian (usually the mother) was either married/cohabitating (44%), separated (10%), divorced (16%), never married (24%), or widowed (6%). The participants also reported that their parent/guardian had the following educational levels: less than a high school diploma (9%), high school diploma (43%), 1 year of college or an associate’s degree (28%), a bachelor’s degree (13%), or a graduate degree (7%).

### *Measures*

*Demographic questionnaire.* All adolescents completed questions requesting information about their gender, age, parental marital status, and educational level.

*Index of Race-Related Stress (IRRS)*. The IRRS is designed to assess African American perceptions of racial discrimination (Utsey, 1999). The index examines lifetime prevalence on a 5-point scale ranging from 0 (*this has never happened to me*) to 4 (*this event happened and I was extremely upset*). An exploratory factor analysis of the IRRS among African American adolescents resulted in 32 items with three factors: individual racism, cultural racism, and collective/institutional racism (Seaton, 2003b).

The revised individual racism subscale ( $\alpha = .87$ ) contains 10 items and assesses the perception that dominant group members engage in behaviors that feel denigrating to minority-group members. A sample item is "Security people have followed you while shopping in some stores." The revised cultural racism subscale ( $\alpha = .82$ ) contains nine items and assesses the perception that the history and practices of the dominant group are considered superior to those of other groups. A sample item is "You seldom hear or read anything good about Black people on radio, TV, newspapers, or in history books." The revised collective/institutional racism subscale ( $\alpha = .84$ ) contains 13 items and assesses the perception that dominant group members' negative attitudes are embedded in social institutions, such as the educational system. A sample item is "You think you did not receive a school award you deserved because you are Black."

*Perceived Racism Scale (PRS; McNeilly et al., 1996)*. The PRS assesses the frequency of exposure to racist incidents. Items on the PRS are rated on a 6-point scale ranging from 0 (*not applicable*) to 5 (*several times a day*). The subscales were modified appropriately for use with adolescents. Items intended for use in employment domains were modified for school settings (e.g., "Racial jokes or harassment are directed at me at school").

Yet, some items were not used because they could not be modified for non-employment domains (e.g., "A White co-worker with less experience and qualifications got promoted before me"). As such, the subscales consisted of racism in the school, racism in the public realm, and responses to racist statements. The racism in school subscale contains 17 items, and a sample item is "When I get good grades, I am looked upon as an exception to my race." The racism in the public realm subscale includes nine items, and a sample item is "I hear comments from Whites expressing surprise at my or other minority individuals' intelligence." The response to racist statements subscale contains six items, and a sample item is "Black people are generally not as smart as Whites."

### *Procedure*

The participants were recruited from high schools in a large northeastern city. Approval was obtained from the school district, and 51 public high schools were targeted for recruitment. Schools were selected on the basis of

the principals' willingness to participate in the study. The principals identified specific classrooms where participants could be recruited, and these were visited by the researcher and assistants to explain the study and to distribute parental consent forms. Participation in the study was granted only if parental consent forms were returned.

Administration of the questionnaire occurred in small groups in the school libraries. Prior to administration of the questionnaire, the participants signed assent forms explaining the study. The participants were reminded that their participation was voluntary and that their results would remain confidential. The interview time ranged from 30 min to 1 hr, and the participants were debriefed and allowed to ask questions upon completion of the questionnaire. Volunteers were paid \$10 for their participation and were treated in accordance with the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 2002).

### *Data Analysis*

In order to assess the construct validity of the revised IRRS, a confirmatory factor analysis (CFA) was performed using AMOS (Arbuckle, 1999). Confirmatory factor analysis is a powerful method for investigating the construct validity of a measure (Rahim & Manger, 1995). In presenting differences in chi-square results, goodness-of-fit indexes are utilized from Type 2 and 3 indexes (Hoyle & Panter, 1995). The Tucker–Lewis index (TLI) compares the model to the independence model, and values greater than .90 are considered good fitting models (Tucker & Lewis, 1973). The Bentler comparative fit index (CFI) uses a noncentral chi square to analyze reduction in fit between the model and the independence model and also should be greater than .90 (Kline, 1998).

Additional measures of fit include the ratio between the chi square and degrees of freedom, and the root mean square error of approximation (RMSEA). Generally, ratios of chi square to degrees of freedom less than 3.0 and RMSEAs less than .05 indicate good fitting models (Floyd & Widaman, 1995; Tabachnick & Fidell, 1996). In order to assess concurrent validity, correlations were calculated between the revised IRRS and the revised PRS. Finally, the reliability coefficients were examined for internal consistency.

## Results

### *Confirmatory Factor Analysis*

A confirmatory factor analysis (CFA) was conducted on the revised IRRS. In the three-component measurement model, each of the 32 items was

Table 1

*Goodness-of-Fit Indicators for Competing Models of the Index of Race-Related Stress*

Model	$\chi^2$	<i>df</i>	$\chi^2/df$	TLI	CFI	RMSEA
Null	5416**	496	10.92	.00	.00	.20
Global	1594**	464	3.43	.75	.77	.10
3-component orthogonal	1681**	464	3.62	.74	.75	.10
3-component oblique	1148**	461	2.49	.85	.86	.08
4-component orthogonal	2092**	464	4.51	.64	.66	.12
4-component oblique	1484**	460	3.23	.77	.79	.09

*Note.* TLI = Tucker–Lewis index; CFI = Bentler comparative fit index; RMSEA = root mean square error of approximation.

\*\* $p < .01$ .

allowed to load on the associated factor identified from the exploratory factor analysis (see Seaton, 2003b). Analyses also were conducted for the four-component measurement model, which has been identified from the adult samples (Utsey & Ponterotto, 1996). For comparative purposes, fit indexes are presented for a null model (i.e., no relations between the observed variables), a one-factor model, a three-component oblique model (correlated factors), a three-component orthogonal model (uncorrelated factors), a four-component oblique model, and a four-component orthogonal model (see Table 1).

The results indicate that the chi-square statistics for all six models were significant, suggesting unsatisfactory fits. However, previous researchers have noted that significant chi squares occur with models that have high degrees of freedom and numerous variables (Bryant & Yarnold, 1995). Furthermore, the chi-square statistic also is affected by large sample sizes and may be significant, despite reasonably fitting the data (Cattell, 1966). An examination of the models indicates that the three-component oblique model was the best fit because it had the lowest  $\chi^2/df$  ratio (2.49), the highest TLI (.85), the highest CFI (.86), and the lowest RMSEA (.08). However, an examination of this model suggests a poor fit, because desirable models generally have TLIs and CFIs greater than .90 (Gorsuch, 1983; Kline, 1998).

Bagozzi and Heatherton (1994) reported that measurement models tend to have an unsatisfactory fit when the sample size is large and five or more items represent each construct. The unsatisfactory fit may be related to model complexity and the large number of estimated parameters. One recommended method (see Bagozzi & Heatherton, 1994; Rahim & Manger,

Table 2

*Goodness-of-Fit Indicators for Competing Models of the Index of Race-Related Stress Based on Aggregate Variables*

Model	$\chi^2$	<i>df</i>	$\chi^2/df$	TLI	CFI	RMSEA
Null	2730**	66	41.36	.00	.00	.40
Global	524**	54	9.71	.78	.82	.18
3-component orthogonal	639**	54	11.85	.73	.78	.21
3-component oblique	141**	51	2.77	.96	.97	.08

*Note.* TLI = Tucker–Lewis index; CFI = Bentler comparative fit index; RMSEA = root mean square error of approximation.

\*\* $p < .01$ .

1995) entails summing items within factors to create aggregate variables of the latent constructs. Typically, items with the highest factor pattern coefficients are paired with items that have the lowest factor pattern coefficients in sequential order. Once the items have been paired to form fewer indicators of the latent variables, additional CFAs are conducted. This aggregate item procedure was conducted in the original development and validation study of the IRRS (Utsey & Ponterotto, 1996).

Given the unsatisfactory fit of the three-component oblique model, this approach was adopted. The aggregate variables were created, and additional CFAs were conducted. The results of the second CFA are reported in Table 2. A review indicates that the three-component oblique model provided the best fit to the data. The TLI (TLI = .96) and the Bentler CFI (CFI = .97) were within the recommended ranges.

Although it is preferable for the RMSEA (RMSEA = .08) to be less than .05, the primary objective of this study was to find the best fit for the data among competing models. Bryant and Yarnold (1995) argued that the primary purpose of a CFA is to determine if a particular model fits the data better than competing models. As such, the three-component oblique model provided the best overall fit among the competing models. It is noteworthy that the adolescent responses were not consistent with a four-factor model, which is consistent with the exploratory study (Seaton, 2003b).

*Concurrent Validity*

Pearson correlation coefficients were computed for the IRRS and the PRS subscales to assess concurrent validity (see Table 3). The results

Table 3

*Means and Correlations of Study Variables*

Subscale	<i>M</i>	<i>SD</i>	$\alpha$	1	2	3	4	5
1. Individual racism	1.22	1.01	.89	—				
2. Collective/Institutional racism	0.91	1.02	.94	.83**	—			
3. Cultural racism	1.50	1.04	.89	.78**	.59**	—		
4. Racism in school	0.91	1.10	.96	.30**	.38**	.18*	—	
5. Racism in public realm	0.87	0.98	.90	.31**	.35**	.20**	.83**	—
6. Responses to racist statements	1.44	1.15	.82	.34**	.31**	.29**	.60**	.68**

\* $p < .05$ . \*\* $p < .01$ .

indicate that individual racism was correlated with racism in school ( $r = .30$ ,  $p < .01$ ), racism in the public realm ( $r = .31$ ,  $p < .01$ ), and responses to racist statements ( $r = .34$ ,  $p < .01$ ). Cultural racism was associated significantly with racism in school ( $r = .18$ ,  $p < .05$ ), racism in the public realm ( $r = .20$ ,  $p < .01$ ), and responses to racist statements ( $r = .29$ ,  $p < .01$ ). Furthermore, collective/institutional racism was correlated significantly with racism in school ( $r = .38$ ,  $p < .01$ ), racism in the public realm ( $r = .35$ ,  $p < .01$ ), and responses to racist statements ( $r = .31$ ,  $p < .01$ ).

*Internal Consistency and Intercorrelations*

In accordance with the exploratory study, internal consistency coefficients were determined to be adequate (see Table 3). Pearson correlation coefficients also were calculated among the IRRS subscales. Individual racism was associated with cultural racism ( $r = .78$ ,  $p < .01$ ) and collective/institutional racism ( $r = .83$ ,  $p < .01$ ). Cultural racism also was related to collective/institutional racism ( $r = .59$ ,  $p < .01$ ). The subscales are highly correlated and suggest that the revised IRRS subscales are assessing separate, yet related constructs of racial discrimination among African American adolescents.

## Discussion

The purpose of the present study was to examine additional forms of validity for the revised IRRS (Utsey & Ponterotto, 1996) among African

American adolescents. The results of the CFA suggest three discernible factors: individual racism, cultural racism, and collective/institutional racism. The present study supports previous research indicating that the IRRS assesses three distinct, yet related dimensions of racial discrimination. An additional objective was to examine concurrent validity of the revised IRRS with the PRS, and the subscales of the IRRS were associated significantly with the subscales of the PRS. Also, the reliability coefficients and inter-correlations of the IRRS were examined.

The results of the present study provide empirical evidence that the IRRS examines African American adolescents' perceptions of and reactions to racial discrimination. Similar to the exploratory study, adolescents' responses were not consistent with the four-factor structure in the adult studies. Adolescents' responses were consistent with a three-factor structure, and the following factors were evident: individual racism, cultural racism, and collective/institutional racism.

The results suggest that urban, African American adolescents perceive experiences of individual racism (personal behaviors designed to denigrate African Americans) and cultural racism (when the cultural practices of the dominant group are lauded as superior to those of another), as assessed by the IRRS. However, the results also suggest that adolescents are unable to distinguish between experiences of collective and institutional racism, resulting in a combination of the two.

The IRRS subscales also were related to the subscales of an additional measure of racial discrimination, the Perceived Racism Scale, which is indicative of concurrent validity. The IRRS subscales also demonstrated adequate internal consistency and were highly correlated. Yet, the IRRS subscale intercorrelations were higher in the present study than what was reported in the exploratory study. The highest subscale correlation was between cultural and collective/institutional racism ( $r = .83$ ,  $R^2 = .69$ ), suggesting that *collinearity*, the idea that the subscales are not distinct, may be an issue. In examining bivariate collinearity, this association is not problematic because collinearity would be an issue with  $r > .90$ ,  $R^2 = .81$  (Kline, 1998). As such, the subscales of the IRRS were examining distinct, yet related dimensions of perceived racial discrimination.

The present study provides empirical evidence that the revised IRRS is an appropriate measure of racial discrimination among African American adolescents. Similar to Williams et al. (2003), the author believes that measures of racial discrimination necessitate psychometric analyses. Although the present research initiated the study of a racial discrimination measure among adolescents, additional analyses are required. Future research should assess the temporal stability of the IRRS with longitudinal samples of African American adolescents. Additionally, other existing

measures of racial discrimination that have been developed and validated among African American adults may require examination among adolescent samples.

Miller (1999) suggested that incidents of racial discrimination may predispose African American adolescents to psychopathology during a time when they are discovering their identities. Zayas (2001) argued that perceptions of racism and racial discrimination hinder adolescents of color from attaining an achieved racial identity. As such, it seems necessary to study the effects of racism and racial discrimination among African American adolescents.

Previous research has suggested that African American adolescents frequently perceive that they are the victims of racial discrimination (Fisher et al., 2000; Gibbons et al., 2004; Romero & Roberts, 1998). Given the complexity of racism and racial discrimination (Utsey & Ponterotto, 1996), it is possible that adolescent perceptions of racial discrimination are affected by cognitive development. Formal reasoning (i.e., the ability to think abstractly) develops during the adolescent period and may be related to perceptions of racial discrimination (Piaget, 1972).

In a previous study, the IRRS and a test of formal reasoning were administered to a sample of urban, African American adolescents. The results indicated that responses to perceptions of racial discrimination were not affected by inability to think abstractly (Seaton, 2003a). As such, cognitive development is not related to adolescents' ability to perceive incidents of racial discrimination. However, more research on perceptions of racial discrimination must be conducted among adolescent populations.

Future research should consider if demographic variables (e.g., gender, age, socioeconomic status) and contextual factors (e.g., school and neighborhood racial composition) affect perceptions of racial discrimination among African American adolescents. For example, are males more likely to perceive racial discrimination than are females? Are older adolescents more likely to perceive racial discrimination than are early adolescents? Does socioeconomic status affect adolescent perceptions of racial discrimination? This may be an important factor since African American adults were more likely to attribute experiences of racial discrimination to race and low socioeconomic status (Ren, Amick, & Williams, 1999). Are adolescents in predominantly African American schools less likely to perceive racial discrimination than are their counterparts in integrated schools? Additionally, future research should continue examining the relationship between perceptions of racial discrimination and indexes of development among African American adolescents. Previous research has indicated that perceptions of racial discrimination are linked to lower grade-point average, lower self-esteem, problem behaviors, and depression (Powell & Arriola, 2003; Prelow,

Danoff-Burg, Swenson, & Pulgiano, 2004; Wong, Eccles, & Sameroff, 2003). More empirical research is necessary to understand the effects of racial discrimination on African American adolescents, given the ubiquity of racial discrimination in the lives of African Americans (Anderson, 1991).

There are several limitations in the present study that should be noted. One limitation concerns the instrument, since the IRRS measures perceptions and reactions to racial discrimination. Among adolescent populations, it may be necessary to distinguish awareness of racial discrimination from perceptions of racially discriminatory experiences. Harrell (2000) proposed that *vicarious racism*, or racially discriminatory experiences that happen to family members and friends, is harmful to well-being. This may be especially true for African American adolescents, who have less experience with racial discrimination compared to African American adults. As such, awareness and experience of racial discrimination may affect well-being among adolescent populations differentially. Yet, the combination of perception and reaction prevents the differential assessment of both among adolescent populations.

Another limitation concerns the selection bias that may have resulted from recruitment methods. The study sample represented a convenience sample, and the results cannot be generalized to other African American adolescents in urban, rural, or suburban settings. In addition, volunteer bias (i.e., volunteer subjects responding differently from the general population) may have affected the outcome in that the participants who volunteered for the study may have reported higher levels of racial discrimination. Volunteers have been shown to differ on self-disclosing ability (Rosnow & Rosenthal, 1997).

A further limitation concerns the lack of testing within the developmental age periods. There may be differences in the perception of racial discrimination for early adolescents, as opposed to older adolescents. Future psychometric analyses may need to consider examining perceptions of racial discrimination across developmental periods.

The fact that the study variables were based on adolescent self-reports is another limitation of the present study. Given the sensitive topic of the study, this raises the issue of social desirability. There is no way to know whether individual variation in social desirability differentially impacted perceptions of racial discrimination. However, past research has illustrated that adolescent self-report data have shown high levels of consistency and accuracy (Taylor & Roberts, 1995).

The present study expands the racial discrimination literature with empirical evidence of a racial discrimination measure among African American adolescents. Although research has been conducted on racial discrimination among African American adults, hardly any research has been conducted

among African American adolescents. One explanation for this dearth of research concerns the lack of psychometric analyses of racial discrimination measures among African American adolescents. The present study provides empirical evidence that the IRRS is a valid and reliable instrument that can be used to assess perceptions and reactions to racial discrimination among African American adolescents.

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