

# Psychometric Evaluation of Data From the Race-Related Events Scale

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## Abstract

Using exploratory factor analysis, we examined the factor structure of data collected from the Race-Related Events Scale, which assesses perceived exposure to race-related stress. Our sample ( $N = 201$ ) consisted of diverse caregivers of Head Start preschoolers. Three factors explained 81% of the variance in the data and showed sound reliability.

## Keywords

race-related stress, racism, traumatic events, exploratory factor analysis

Over the past two decades, researchers have evaluated the extent to which racism—defined as “beliefs, attitudes, institutional arrangements, and acts that tend to denigrate individuals or groups because of phenotypic characteristics or ethnic group affiliation” (Clark, Anderson, Clark, & Williams, 1999, p. 805)—may be related to negative health outcomes. Racial or ethnic discrimination, which is one form of racism, is the differential treatment of members of racial or ethnic minority groups by individuals and by social institutions (Williams & Mohammed, 2009). Perceived discrimination refers to subjective experiences of discrimination and is viewed as a class of stressors that could have consequences for health-related outcomes and for an understanding of long-evidenced health disparities (Williams & Mohammed, 2009).

From a stress theory perspective, perceived discrimination is conceptualized as a chronic and accumulative stressor that exceeds an individual’s ability to cope and places demands on the individual’s biological, psychological, and emotional systems; and thus becomes a risk factor for poor health (Pearlin,

Schieman, Fazio, & Meersman, 2005; Piet-erse, Todd, Neville, & Carter, 2012; Schulz et al., 2006).

Perceived and self-reported racial discrimination is insidious and highly prevalent in the United States for all racial groups (Kessler, Mickelson, & Williams, 1999) and throughout the world (Harris et al., 2006), and particularly for racial and ethnic minorities and indigenous peoples (Harris et al., 2006; Karlsen & Naz-roo, 2002; Kessler et al., 1999; Landrine & Klonoff, 1996; Mustillo et al., 2004; Paradies, Harris, & Anderson, 2008). Given this prevalence and the proliferation of research evaluating its impact on health processes and outcomes, investigations to evaluate the psychometric properties of measures and the scores derived from measures used in the field

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are needed so that potentially traumatic race-related events and associated symptoms can be assessed.

The present study evaluated the psychometric properties of the Race-Related Events Scale (RES; Waelde et al., 2010), a relatively new measure to assess race-related stress, using exploratory factor analysis.

### **Limitations of Measures of Perceived Racial Discrimination**

The impact of perceived racial discrimination on health is an expanding area of research. Therefore, valid and reliable measures are needed to study the link between perceived racial discrimination and health processes and outcomes. Although numerous measures to assess exposure to racism exist, researchers have discussed three significant limitations evidenced with these measures: (a) the measures typically do not assess multiple racial groups (see Bastos, Celeste, Faerstein, & Barros, 2010 and Utsey, 1998, for review; Waelde et al., 2010); (b) the measures include questions that ask about global experiences of racism (see Kressin, Raymond, & Manze, 2008, for a review); and (c) the measures contain few items that would meet the criteria for traumatic experiences as outlined in the *Diagnostic and Statistical Manual of Mental Disorders* (5th edition, *DSM-5*; American Psychiatric Association, 2013). The significance of these reported limitations cannot be overstated. Moreover, the limitations constrain the current knowledge base regarding the experiences of racially and ethnically diverse populations, as well as the assessments of self-reports regarding the extent to which these experiences are traumatic in nature.

### **Race-Related Event Scale: Original Instrument**

To address the above-mentioned limitations in the measurement of racism, Waelde et al. (2010) developed the RES. This brief screening measure assesses perceived exposure to

stressful and potentially traumatizing race-related experiences and was designed to be both consistent with standard diagnostic definitions of traumatic events and applicable to diverse racial and ethnic groups. Individuals indicate whether they have experienced each of 22 different types of events as a result of their race or ethnicity. In addition to the 22 items that make up the measure, one open-ended item allows respondents to indicate if they have experienced an "other" type of event not included in the 22 items and invites them to describe the nature of that event. A total scale score is derived from the sum of the items that were positively endorsed.

The RES was developed for racially and ethnically diverse populations. Its items range from daily hassles related to racism (such as being treated rudely or coldly because of one's race or ethnicity) to potentially traumatizing race-related events (such as being beaten or hurt because of one's race or ethnicity). Findings from the initial validation study with 408 racially diverse college students suggested sound internal consistency ( $\alpha = .86$ ) and adequate 1-month test-retest reliability ( $r_s = .66$ ). With respect to the discriminant validity of the RES, participants who self-identified as racial minorities in the validation study reported significantly more race-related stress than White Americans. African Americans reported more race-related stress than Asian Americans. Furthermore, respondents who met *DSM-IV-TR* criteria for exposure to trauma (i.e., criterion A1, exposure to a stressor, and criterion A2, subjective emotional response to the stressor) reported significantly more race-related stressors and more severe symptoms of posttraumatic stress disorder (PTSD) than respondents who did not meet *DSM-IV-TR* criteria for trauma exposure (Waelde et al., 2010). This initial validation study was an important first step in examining the utility of the RES and the extent to which it may be used with a range of racial and ethnic groups.

The original authors of the RES do not provide a discussion of the theory that informed the conceptualization of their measure. The authors indicate that RES was designed to include a range of items from daily hassles to

potentially traumatic events, and although the initial validation study (Waelde et al., 2010) supported the utility of the RES, it did not assess the underlying factor structure of the measure. Although the RES was reported to be a screening instrument, an exploration of the underlying structure of the measure is needed to establish the construct validity and to lend support to the reliability of the instruments' scale scores. Additionally, the identification and use of RES factors will allow researchers and clinicians to conduct fine-grained studies on the differential effects of different types of discrimination events. Thus, the present study serves as the first and essential step in exploring the construct validity and reliability of the scores derived from the RES. A factor analysis and preliminary construct validity of the RES performed by outside researchers with a diverse community sample (i.e., race, ethnicity, socioeconomic status, and age) is warranted. The present study fills this important gap.

### **Present Study**

In the present study, we expand the preliminary validation of the RES by evaluating the psychometric properties of the scores derived from the measure. Although many measures of racism that document initial attempts at scale development have been published, few studies on scale refinements have been reported. Additionally, while many of the original developers have evaluated the psychometric properties of their measures, independent researchers have not always evaluated or contributed to the ongoing validation of the measures (Bastos et al., 2010; Utsey, 1998). Thus, we conducted an exploratory factor analysis of the RES to examine the underlying structure of the measure and to establish preliminary evidence of construct validity in a racially and ethnically diverse community sample.

## **Method**

### **Participants**

Data used for the exploratory factor analysis were generated from a larger study examining

social processes, including parent-reported perceptions of perceived racial or ethnic discrimination, and their impact on young children's health. To be eligible for the study, a participant had to meet the following criteria: (a) be a caregiver of a child ages three through five years who was attending a Head Start program; (b) be a caregiver of a child of Black American or White American racial background and of any ethnic origin; (c) person without a thought disorder (e.g., schizophrenia), active psychosis or mania, or cognitive impairment that would limit his or her ability to accurately report personal experiences; and (d) be 16 years or older. Only one caregiver per child was allowed to participate in the study.

The total study sample comprised 201 caregivers of children attending Head Start (Table 1). Participants were 92.5% ( $n = 186$ ) women and 7.5% ( $n = 15$ ) men, with a median age of 30 years. Most caregivers were biological mothers (84.1%;  $n = 169$ ). The sample was 44.8% ( $n = 90$ ) Black American, 11.9% ( $n = 24$ ) White American, and 39.3% ( $n = 79$ ) other or multiracial. With regard to ethnicity, approximately one half of the total sample (48.8%;  $n = 98$ ) identified as having a Latino/Latina ethnic background. Ninety percent of the sample reported a household income of under \$50,000 per year.

### **Procedure**

We conducted this study over a 23-month period with the collaboration of a community-based agency that operates several early care and education centers, in an urban city in the Northeastern United States. In partnership with the staff at 10 centers, families were recruited through (a) distribution of informational letters and fliers at the centers and to children's homes through the mail, (b) attendance at monthly parent meetings held at the centers, and (c) attendance at health fairs sponsored by the community partner. We used a cross-sectional research design in which caregivers reported their experience of racial and ethnic discrimination and completed several measures assessing the health and well-being of their children.

**Table 1.** Demographic Characteristics (N = 201).

		n	%
Gender	Female	186	92.5
	Male	15	7.5
Age (median = 30.0)	20	3	1.5
	21-25	45	22.4
	26-30	55	27.4
	31-35	47	23.4
	36-40	25	12.4
	41-45	13	6.5
	46-50	5	2.5
	51-55	4	2.0
Race	56-60	2	1.0
	61-65	1	0.5
	66-70	1	0.5
	Black American or African American	90	44.8
	White American or Caucasian	24	11.9
	American Indian	1	0.5
	Other	79	39.3
Hispanic (n = 98)	Unreported	7	3.5
	Mexican	22	10.9
	Puerto Rican	55	27.4
	Cuban	1	0.5
	Dominican	3	1.5
	Central American	4	2.0
	South American	5	2.5
Foreign born	Other (Hispanic)	8	4.0
	Yes	73	36.3
	No	126	62.7
Education	Undisclosed	2	1.0
	Less than high school	59	29.3
	High school diploma or GED	79	39.3
	Some college	31	15.4
	Associate's degree	16	8.0
	Bachelor's degree	11	5.5
	Master's degree	5	2.5
Household income	Less than \$5,000	20	10.0
	\$5,000-\$9,999	29	14.4
	\$10,000-\$14,999	29	14.4
	\$15,000-\$19,999	23	11.4
	\$20,000-\$24,999	26	12.9
	\$25,000-\$34,999	29	14.4
	\$35,000-\$49,999	25	12.4
	\$50,000-\$74,999	7	3.5
	\$75,000-\$99,999	3	1.5
	\$100,000 and over	1	0.5
	Undisclosed	9	4.5

(continued)

**Table 1. (continued)**

		n	%
Number of people in household	2	19	9.5
	3	45	22.4
	4	47	23.4
	5	46	22.9
	6	22	10.9
	7	11	5.5
	8	4	2.0
	9	6	3.0
	10	1	0.5
	Relationship to the child	Biological mother	169
Biological father		15	7.5
Stepparent		2	1
Grandmother		10	5
Primary language spoken in the home	Aunt/uncle	5	2.5
	Spanish	31	15.4
	Other (Portuguese, French)	2	1
	Other (Portuguese, French)	2	1

Note. GED = general educational development

Interested caregivers signed a consent-to-contact form, allowing the university-based research team to call the caregivers to provide more information about the study. Interested caregivers were screened for eligibility through telephone interviews. If a caregiver was found eligible, a semistructured interview at a location of the caregiver's choosing (e.g., home, child care center, public library) was scheduled. The interviews took approximately two hours to complete, and respondents were compensated for their time with a \$45 gift card. All study materials were in English and Spanish and were orally administered. Of the 201 caregiver interviews, 49 (24.4%) were conducted in Spanish. Institutional review board approval was established at the first author's university prior to the start of the study. In addition, the institutional review board approved all study procedures and provided oversight for the protection of human research participants.

**Planned Analysis**

Exploratory factor analysis (EFA) is a useful tool for examining the underlying dimensions

of an instrument designed to measure a single construct and for identifying items that may not be measures of the construct (Nunnally & Bernstein, 1994). Furthermore, a factor analysis that shows a well-defined simple solution for an instrument supports the validity of a construct (Kim & Mueller, 1978; Nunnally, 1978). EFA is best used with instruments consisting of continuous item-level data and not binary item-level data (Tabachnick & Fidell, 2007). Woods (2002) outlined the range of issues often encountered when using classical factor analytic techniques with binary data. Woods described these issues as: (a) a violation of the assumption of item linearity and item by factor linearity, (b) an underestimation of factor loadings due to attenuated Pearson correlation coefficients, and (c) the inability of binary items to be normally distributed. A suggested method to account for these issues with classical EFA is to replace the Pearson coefficients with tetrachoric correlations and to extract factors using a weighted least squares estimator (Woods, 2002). Tetrachoric correlations of binary data estimate continuous correlation coefficients by assuming that the responses demonstrate an underlying pattern of continuous response (Cohen & Cohen, 1983). The phi correlation coefficient can also be used to assess the relationship of two bivariate variables and, traditionally, does not assume an underlying continuous response pattern but rather an underlying bivariate discreet response pattern (Pearson, 1900; Yule, 1912). Ekstrom (2008) demonstrated that both the phi and the tetrachoric correlation coefficients can be computed using the underlying assumptions of each. Therefore, both approaches are appropriate and may be used to explore bivariate data.

Because the items in the RES are binary and we chose to follow Woods' (2002) suggestion on analytical method, we employed the weighted least squares extraction method using a matrix of tetrachoric correlations to estimate factor loadings. A geomin oblique rotation method was used to examine the underlying factor structure. The oblique rotation method was chosen over an orthogonal

method in anticipation of between-factor correlations. All analyses were conducted using the *Mplus* (ver. 6.12) program (Muthén & Muthén, 1998-2010).

A sample size of 201 is considered "fair," according to Comrey and Lee (1992). Tabachnick and Fidell (2007) concur with Comrey and Lee but also indicate that samples of 150 should be sufficient as long as there are several factor loadings above .80. Based on these conventions, the sample size of the present study is adequate.

The number of optimal factors for the RES was determined based on the following criteria: (a) use of parallel analysis, (b) an examination of the root mean square error of approximation value, and (c) an examination of the resultant simple solution.

## Results

As a first step, we explored the optimal number of factors in our data set using parallel analysis. Parallel analysis, first proposed by Horn (1965), is a statistical procedure based on generating random eigenvalues and comparing these with eigenvalues computed from the data derived from the instrument. The theory behind parallel analysis suggests that eigenvalues from the data that are greater than the average of a large number of randomly generated eigenvalues should be considered nontrivial and representative of an actual dimension in the data. In the present study, eigenvalues generated from 1,000 randomly drawn data sets were compared with the RES eigenvalues using an SPSS procedure developed by O'Connor (2000). The upper point of the 95th percentile for the 1,000 randomly generated data sets was lower than the eigenvalues for the first three factors (Table 2), indicating the nontrivial nature of three components. The root mean square error of approximation for the three-factor solution was .021, indicating a good model fit (Muthén & Muthén, 1998-2010). Taken together, the three factors that emerged explained 81% of the variance in the study sample.

Assuming the three-factor model as the best solution based on our previously outlined

**Table 2.** Results of Parallel Analysis.

Root	Raw Data	Random Data	
		Mean	95th Percentile
1	7.1703 <sup>a</sup>	1.6507	1.7606
2	2.6879 <sup>a</sup>	1.5328	1.6115
3	1.6749 <sup>a</sup>	1.4460	1.5138
4	1.3932	1.3733	1.4331
5	1.0355	1.3077	1.3618
6	0.9274	1.2470	1.2950
7	0.8881	1.1897	1.2359
8	0.8645	1.1374	1.1788
9	0.6451	1.0867	1.1304
10	0.6184	1.0371	1.0785
11	0.5823	0.9897	1.0306
12	0.5334	0.9457	0.9840
13	0.4863	0.9022	0.9396
14	0.4570	0.8572	0.8934
15	0.4430	0.8142	0.8526
16	0.3229	0.7723	0.8104
17	0.3088	0.7311	0.7700
18	0.2662	0.6878	0.7265
19	0.2506	0.6444	0.6868
20	0.1934	0.5990	0.6422
21	0.1324	0.5528	0.5956

a. Raw data eigenvalues larger than random data eigenvalues.

criteria, we labeled factors according to common meanings of the shared items. We labeled the three factors: Everyday Discrimination (12 items), Direct Race-Related Events (7 items), and Indirect or Vicarious Race-Related Events (3 items).

Within each factor, items cohered well, and thus had similar qualitative relationships. For example, the 12 items that compose Factor 1, Everyday Discrimination, all have a common thread of general harassment, rude treatment, or secondhand knowledge of race-based cruelty. The seven items that compose Factor 2, Direct Race-Related Events, are associated with firsthand physical confrontation or violence based on one's race. Factor 3, Indirect or Vicarious Race-Related Events, is composed of three items that are all associated with observing injury of another person because of race or ethnicity. Factor 1 explained 36% of the variance, Factor 2 explained 25% of the

variance, and Factor 3 explained 20% of the variance (Table 2). Items 17 and 19 in Factor 2, Direct Race-Related Events, and Items 9 and 16 in Factor 3, Indirect or Vicarious Race-Related Events, have high loadings on more than one factor (Table 3). Loading of these items on multiple factors indicates complex items that may need to be examined in additional samples and possibly discarded from the instrument (Tabachnick & Fidell, 2007).

In addition to exploring the structure of the RES, we examined the stability of subscale scores or factors. The resultant three RES factors are reliable in the context of the racially and ethnically diverse sample in this study. Cronbach's alpha coefficients were .881 for Factor 1 (Everyday Discrimination), .789 for Factor 2 (Direct Race-Related Events), and .833 for Factor 3 (Indirect or Vicarious Race-Related Events). Test-retest reliability was not assessed in the current study.

## Discussion

Our study examined the underlying structure of the RES and established preliminary evidence of construct validity in a racially and ethnically diverse sample of low-income individuals in the same community. Based on an EFA of the constructs on the RES, a three-factor structure offered the clearest delineation of exposure to race-related stressful and traumatic experiences.

Our results provide empirical support for the factor structure of the RES. Specifically, the three factors we analyzed explain 81% of the variance in the study sample. Furthermore, all three factors are reliable based on Cronbach's alpha values ranging from .79 to .88.

Identifying an Everyday Discrimination subscale has the potential to inform future research on the relation between the aftereffects of race-related events and physical, psychological, and emotional health outcomes. Sellers and Shelton (2003) found that more than 50% of a sample of Black American college students reported 13 daily racial hassles that they experienced as discrimination. Sellers and Shelton also found that discrimination has a dosage effect, in that the more frequently

**Table 3.** Factor Loadings for Three-Factor Solution.

#	Item	Factor 1	Factor 2	Factor 3	M (SD)
<i>Factor 1: Everyday Discrimination (n = 12 items)</i>					
10	Someone hurt my family member because of his or her race or ethnicity	<b>0.933</b>	-0.198	0.068	0.03 (0.18)
3	Treated unfairly by teacher or boss because of my race or ethnicity	<b>0.928</b>	-0.183	-0.022	0.17 (0.38)
2	Ignored because of my race or ethnicity	<b>0.898</b>	0.252	-0.157	0.27 (0.45)
8	Verbal conflict with someone because of my race or ethnicity	<b>0.829</b>	0.166	0.132	0.17 (0.38)
1	Treated rudely or coldly because of my race or ethnicity	<b>0.817</b>	0.265	-0.020	0.26 (0.44)
6	Followed by someone because of my race or ethnicity	<b>0.809</b>	-0.044	0.172	0.15 (0.36)
4	Insulted or called an insulting name because of my race or ethnicity	<b>0.767</b>	0.131	0.166	0.20 (0.40)
7	Harassed by police or security guards because of my race or ethnicity	<b>0.753</b>	-0.088	0.113	0.14 (0.35)
11	Someone threw something at me because of my race or ethnicity	<b>0.750</b>	0.002	-0.125	0.04 (0.21)
18	Heard about someone getting injured or killed because of their race or ethnicity	<b>0.681</b>	-0.104	0.152	0.40 (0.49)
5	Told to leave a place and not come back because of my race or ethnicity	<b>0.655</b>	0.334	-0.010	0.10 (0.31)
19	Saw someone get treated in a racist or prejudiced way	<b>0.643</b>	0.020	0.500	0.32 (0.47)
<i>Factor 2: Direct Race-Related Events (n = 7 items)</i>					
15	Someone beat me because of my race or ethnicity	-0.027	<b>0.998</b>	0.029	0.02 (0.14)
14	Someone chased me because of my race or ethnicity	0.070	<b>0.898</b>	0.120	0.03 (0.18)
12	Someone pushed or shoved me because of my race or ethnicity	0.370	<b>0.766</b>	0.038	0.04 (0.20)
13	Someone stole something from me because of my race or ethnicity	0.116	<b>0.653</b>	-0.094	0.03 (0.18)
16	Threatened with a knife, gun, or other weapon because of my race or ethnicity	0.000	<b>0.623</b>	0.551	0.03 (0.18)
17	Someone threatened to kill me because of my race or ethnicity	-0.008	<b>0.587</b>	0.674	0.03 (0.18)
9	Physical fight with someone because of my race or ethnicity	0.522	<b>0.533</b>	-0.020	0.07 (0.26)
<i>Factor 3: Indirect or Vicarious Race-Related Events (n = 3 items)</i>					
20	Saw someone almost get seriously injured or killed because of their race or ethnicity	0.449	-0.004	<b>0.756</b>	0.14 (0.35)
22	Saw someone get killed because of their race or ethnicity	0.406	-0.155	<b>0.740</b>	0.06 (0.24)
21	Saw someone seriously injured because of their race or ethnicity	0.439	0.093	<b>0.732</b>	0.11 (0.31)
Cronbach's alpha values		.881	.789	.833	

Note. Items with high loadings on more than one factor: 19, 16, 17, 9. Salient structure coefficients indicated in bold.

a person experiences discrimination, the more negative the psychological outcomes are for that person.

The present study adds to the preliminary validation study of the RES (Waelde et al., 2010). Specifically, the use of the three-factor

RES presented here will allow researchers and clinicians to conduct fine-grained studies on the differential effects of daily or everyday racial discrimination, as well as on direct and indirect race-related events. Thus, the present study serves as the first and essential step in

exploring the construct validity and reliability of the scores derived from the RES.

### *Clinical Implications*

Being a racial and ethnic minority may increase stress as well as negative reactions to stress because of the potential to experience race-related events. Racism and potentially traumatizing race-related events are linked to many negative physical and mental health outcomes, including to PTSD (Ford, 2008; Khaylis, Waelde, & Brice, 2007), depression and anxiety (Banks, Kohn-Wood, & Spencer, 2006; Schulz et al., 2006), as well as to behavior that places individuals at risk for HIV (Kalichman et al., 2006), and substance use (Terrell, Miller, Foster, & Watkins, 2006). Clinicians and researchers who work with racial and ethnic minority populations need to understand the additional complications that individuals from these populations may have experienced compared with racial majority populations. Therefore, it is essential that mental health and physical health clinicians as well as researchers systematically screen individuals for potentially traumatic race-related events and associated symptoms. Our findings show that the RES can help clinicians and researchers do so, because it is consistent with standard diagnostic definitions of traumatic events and can be applied to diverse racial and ethnic groups (American Psychiatric Association, 2013). Additionally, the three-factor structure of the RES may be useful in elucidating additional factors of perceived discrimination and mental health distress within individuals.

### *Limitations and Future Directions*

A number of limitations must be considered in conjunction with the results of our study. First, the extent to which our findings can be generalized to other racial and cultural groups is yet to be determined, given that some racial, ethnic, and socioeconomic groups were underrepresented in this study (e.g., Asian Americans and male participants). Specifically, our sample comprised primarily women

as well as individuals from Black American or Latino/Latina American backgrounds with a median age of 30 years. This reflects the general pattern toward the underrepresentation of father involvement in pediatric psychology research (Phares, Lopez, Fields, Kamboukos, & Duhig, 2005). Additionally, 84% had some college or fewer years of education, and a majority had household incomes of less than \$50,000. As a second, related limitation, we cannot rule out selection bias, because the population studied was voluntary, was chosen for convenience, and therefore may have been uniquely motivated.

Although the RES was originally developed to screen for stressful and potentially traumatizing race-related events to determine the impact of racism (Waelde et al., 2010), the present study did not explicitly measure exposure to trauma. Future research using the three-factor structure of the RES along with measures of trauma exposure and symptoms would help further inform direct links between perceived race-related events and trauma in racially and ethnically diverse samples.

Given the cross-sectional nature of our study in which we collected data only at one time point, we were unable to address an original limitation of the measure described in the validation study (see Waelde et al., 2010), which is the inconsistent evidence of temporal stability of the measure with some items showing significant differences between Time 1 and Time 2.

Another limitation pertains to one issue that cannot be avoided in a discussion of psychometric assessment, particularly when assessing individuals' perception of racial discrimination: the possibility of bias based on self-report. The items on the RES require individuals to rate their own subjective experience of prejudice or discrimination. Thus, our measures are subject to the same social and cognitive limitations as other self-report measures regarding perception, interpretation, and disclosure (Kressin et al., 2008; Stone et al., 2000). Future research should examine the extent to which RES subscale scores are related to scores on a social desirability measure.

Finally, the 22-item, three-factor model produced several complex items that may need to be removed from the RES. Given that this study was exploratory, informed by an EFA, and serves as a first step in the construct validation process, we chose to retain the complex Item 19 (“Saw someone who is the same race or ethnicity as me get treated in a racist or prejudiced way”) in Factor 1, Everyday Discrimination; and Items 9 (“Physical fight with someone because of my race or ethnicity”), 16 (“Threatened with a knife, gun, or other weapon because of my race or ethnicity”), and 17 (“Someone threatened to kill me because of my race or ethnicity”) in Factor 2, Direct Race-Related Events, which all have high loadings on more than one factor. Additionally, Item 17 (“Someone threatened to kill you because of your race or ethnicity”), which loaded on Factor 2 and Factor 3, was retained on Factor 3 because of its clear coherence and salience with the other items that compose Factor 3. Future studies informed by both exploratory and confirmatory factor analytic approaches with nonoverlapping samples should clarify whether the need exists to remove such factors from the measure.

## Conclusion

The current investigation adds to the measurement literature on the assessment of race-related events. Specifically, our study is the first assessment of the RES factor structure. Additional research related to the factor structure is needed to replicate and validate the scale scores produced in this study. Although our study provides preliminary evidence that the RES scores are valid and reliable, construct validity should be continuously evaluated, even for widely used instruments. Additionally, because reliability and validity are context-dependent (Schmidt & Hunter, 2003), it is important to continue accumulating evidence related to cultural validity and generalization of studies of diverse populations. Validity and reliability of the scores of an instrument when used in one culture or population do not necessarily indicate validity and reliability when the instrument is used in

another culture (Bravo, 2003). Additional studies may offer data from diverse samples and regions of the United States to allow comparisons among sample groups and thereby help refine the assessment.

Future studies may also determine if the three factors in this RES relate to other constructs in theoretically expected ways, such as PTSD. Research evaluating the revised PTSD criteria and symptomatology (American Psychiatric Association, 2013) using the three RES factors identified here would be warranted, given that Waelde et al. (2010) found that assessment of PTSD symptoms is linked to the potentially traumatic race-related stressors measured by the RES. We recommend that researchers continue to examine the cross-cultural, linguistic, and translational equivalence of the RES across languages and cultures.

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## Authors' Note

The content of this article is the responsibility of the authors and does not necessarily represent the views of the National Institute on Minority Health and Health Disparities or the National Institutes of Health. Dr. Roberts is now at Casey Family Programs. Dr. Hooper is now at The University of Louisville.

## Declaration of Conflicting Interests

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