Development and Validation of a Coping With Discrimination Scale: Factor Structure, Reliability, and Validity

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Four studies were conducted to develop and validate the Coping With Discrimination Scale (CDS). In Study 1, an exploratory factor analysis \((N = 328)\) identified 5 factors: Education/Advocacy, Internalization, Drug and Alcohol Use, Resistance, and Detachment, with internal consistency reliability estimates ranging from .72 to .90. In Study 2, a confirmatory factor analysis \((N = 328)\) provided cross-validation of the 5-factor model as well as evidence for validity of the scale. The validity evidence was similar across racial groups and for males and females. In Study 3, the estimated 2-week test–retest reliabilities \((N = 53)\) were between .48 and .85 for the 5 factors. Education/Advocacy, Internalization, Drug and Alcohol Use, and Detachment were positively associated with active coping, self-blame, substance use, and behavioral disengagement, respectively, providing further support for validity of the CDS. Finally, incremental validity evidence was obtained in Study 4 \((N = 220)\), where it was shown that the CDS explained variance in outcome variables (i.e., depression, life satisfaction, self-esteem, and ethnic identity) that could not be explained by general coping strategies.

Keywords: coping, discrimination, racism, minority, scale development

Living with the stress of racial discrimination involves learning how to cope with it. A growing body of literature has suggested that discrimination experiences are related to negative psychological and physical consequences, such as depression, psychological distress, and heart disease (e.g., Alvarez & Juang, 2010; Brandolo, Halen, Pencille, Beatty, & Contrada, 2008; Fischer & Shaw, 1999; Hwang & Goto, 2008; Lee, 2003, 2005; Liang, Alvarez, Juang, & Liang, 2007; Noh, Beiser, Kaspar, Hou, & Rummens, 1999; Noh & Kaspar, 2003; Pascoe & Smart Richman, 2009; Utsey, Giesbrecht, Hook, & Stanard, 2008; Yoo & Lee, 2005). Unfortunately, racial discrimination continues to be a pervasive problem in the lives of many ethnic minorities (Ponterotto, Utsey, & Pedersen, 2006; Sellers & Shelton, 2003). Studies have consistently indicated that approximately 80% of minority respondents report having experienced racial discrimination during their lives (e.g., Krieger, 1990). Thus, it is important for minorities to learn how to cope with discrimination to decrease the negative impact of discrimination on mental health outcomes. However, research in this area is limited. Indeed, Pascoe and Smart Richman (2009) found only nine studies on coping in their meta-analysis of 134 studies on perceived discrimination.

The need to assess how individuals cope with racial discrimination reflects the uniqueness of discrimination as a stressor (Miller & Kaiser, 2001). Unlike other stressors, the context in which racial discrimination occurs is pervasive, as are its outcomes—thereby increasing the chronicity of the stress. As Jones (1997) observed, racial discrimination not only occurs between individuals but is also embedded within institutional systems (i.e., legislation, education, health) and cultural norms (i.e., standards of beauty, communication). Thus, racial stressors can encompass a wide spectrum of events, ranging from major life events, such as losing a job or physical assault, to microaggressions, such as differential treatment and verbal harassment. Moreover, racial discrimination is unique in that it targets both the individual and the group and has implications for one’s personal and collective identities (Miller & Kaiser, 2001). As a result, being the target of racial discrimination has the potential to undermine both one’s self-perceptions and one’s sense of identification with a larger
community—a form of social isolation that can be a significant source of stress.

Insofar as racial discrimination can be considered a unique form of stress, it stands to reason that a stress-specific, rather than general, measure of coping would facilitate an understanding of how individuals cope with racial discrimination. Indeed, Lazarus and Folkman (1984) argued that “we must move away from global assessments toward specifics so that we can learn what it is that is being coped with” (p. 317). To this end, the development of a scale to assess how individuals cope with racial discrimination is consistent with recent efforts to develop stress-specific measures of coping, such as instruments to assess coping with colorectal cancer (Rinaldis, Pakenham, Lynch, & Aitken, 2009) and domestic violence (Benight, Harding-Taylor, Midboe, & Durham, 2004). To understand how people cope with discrimination specifically, it would be beneficial to first examine the results obtained from the literature.

Mellor (2004) conducted a qualitative study and found that strategies discussed in the general coping literature, such as ignoring the racist behavior, reinterpreting the situation, seeking revenge, or using social support, were also employed in coping with discrimination. However, unique coping methods specific to racial discrimination were also reported. For example, people experiencing discrimination may educate the racists, attempt to achieve so as to prove racists wrong, assert pride in their racial ethnic identity, deny their identity for self-protection, attempt to make children strong, challenge others’ ignorant beliefs, or assert their right to equal treatment. Miller and Kaiser (2001) observed that coping with racial discrimination may also be manifested in collective as well as individual actions, such as educational, advocacy, and lobbying efforts. Similarly, racial socialization theorists have argued that knowledge about and pride in one’s race and culture can serve as a coping resource in response to racism (Hughes et al., 2006) by preparing individuals for the realities of facing such events. Thus, racial discrimination may elicit coping strategies that are not used in coping with other types of stressors and that may not be reflected in general coping measures.

Indeed, in a review of the major instruments used to assess coping—COPE Inventory (Carver, Scheier, & Weintraub, 1989), Ways of Coping Questionnaire (Folkman & Lazarus, 1988), Coping Strategies Inventory (Tobin, Holroyd, & Reynolds, 1984)—none addressed the role of education, advocacy, cultural pride, or cultural knowledge as means of coping. As a result, existing measures of general coping fail to measure particular coping strategies such as self-education or cultural knowledge that may be central to dealing with racial discrimination. Moreover, while general coping measures may be effective in assessing higher order coping strategies such as active coping or problem-focused coping, they lack the precision to measure specific forms of these strategies that are unique to racial discrimination; for instance, forms of active coping such as advocacy and educational efforts are not assessed. Therefore, if researchers use only general coping measures, they are likely to miss unique coping strategies that are used in response to racial discrimination.

In the absence of a coping scale specific to discrimination, researchers have had to improvise by creating their own measures (for Asian Americans, see Kuo, 1995; Noh et al., 1999; Noh & Kaspar, 2003; for Mexican immigrants, see Finch & Vega, 2003). Other researchers have adapted existing well-developed coping scales and changed the referent stressor to racial discrimination. For instance, the Coping Strategies Inventory (Tobin et al., 1984) was used by Yoo and Lee (2005), and the COPE Inventory (Carver et al., 1989) was used by Alvarez and Juang (2010) and Liang et al. (2007) for Asian Americans; the Coping Responses Inventory (Moos, 1993) was used by Thompson Sanders (2006) for African Americans, Asian Americans, and Hispanic Americans. Recently, Umaña-Taylor, Vargas-Chanes, Garcia, and Gonzales-Backen (2008) created a three-item scale of proactive coping with discrimination (α = .60 to .63) for Latino adolescents based on Phinney and Chavira’s (1995) qualitative work. Although the goal of Umaña-Taylor et al.’s study was not to develop a sound psychometric instrument, their work provides a good starting point for developing a psychometrically sound coping with discrimination scale.

Thus, the need to develop a coping with discrimination scale is clear. Development of such a scale would make it possible to understand how minority individuals cope with discrimination. After such a scale is developed, researchers can examine how coping with discrimination strategies influence the association between perceived discrimination and mental health outcomes. Thus, the goals of the studies presented here were to (a) develop a coping with discrimination scale and (b) examine the factor structure, reliability, and validity of this new scale. We conducted four studies to develop the Coping With Discrimination Scale (CDS). Study 1 generated items for the CDS and examined the factor structure and reliability of the scale. Study 2 examined whether the factor structure of this measure could be replicated and provided evidence of construct validity for the measure. Study 3 evaluated the test–retest reliability of the measure and further examined construct validity, whereas Study 4 examined the incremental validity of the measure in predicting different outcomes over and above a general measure of coping and social desirability.

**Study 1: Scale Development and Exploratory Factor Analysis**

The purpose of Study 1 was to (a) develop items reflecting how minority individuals cope with discrimination, (b) examine the initial factor structure of the scale, and (c) evaluate the reliability (internal consistency) of scales representing the factors that were identified.

**Method**

**Item development.** Several steps were employed in the process of developing items for the scale. First, a research team generated initial items through interviewing minority college students from different ethnic groups regarding how they coped with discrimination. Also, a focus group of seven minority college students (three Asian Americans, two African Americans, and two Latino/a Americans, with at least one male and one female in each group) was formed to discuss the appropriateness of the items, and based on their feedback, revisions to the items were made. Next, two stages of pilot studies were conducted to examine the factor structure of the scale. In the first stage, 36 items were developed based on the interviews with minority students and the literature on coping with discrimination (e.g., Mellor, 2004). We collected data from a sample of 400 ethnic minority students (38% men and 62%...
women; 22% African American, 35% Asian American, 21% Latino/a American, 3% Native American, 13% multiracial American, and 6% other) at a Midwest university. A principal axis factor (PAF) analysis was performed to explore four-factor and five-factor solutions. The results from this pilot study revealed that a four-factor solution included factors representing Education, Internalization, Focusing on Strengths/Resilience, and Confrontation, and a five-factor solution added an Avoidance factor. However, the Confrontation factor had only two items with high loadings.

In the second stage, we continued to refine items by adding three new dimensions (i.e., Support Seeking, Reaction, and Disengagement) to the above factors. The Confrontation factor was combined with the Reaction dimension, and the Avoidance factor was combined with the Disengagement dimension. All of the added dimensions were based on professional clinical experiences, additional qualitative data, and knowledge of the racial/cultural identity development model developed by Sue and Sue (2003). They proposed a five-stage racial/cultural identity development model (i.e., conformity, dissonance, resistance/immersion, introspection, and integrative awareness). The model hypothesizes that minorities in the earlier stages of racial identity development tend to prefer the dominant culture over their own ethnic culture. As a result, they may feel ashamed because they are being discriminated against by others and attribute the cause of discrimination to their own inferiority (e.g., Internalization) or have no idea about how to deal with discrimination (e.g., Disengagement). In the middle stages of racial identity development, minorities may start to realize that racial discrimination exists, struggle with their inconsistent experiences (e.g., preferring dominant culture vs. realization of racial discrimination), and begin to endorse their own culture and view their psychological problems as products of oppression and racial discrimination. It seems reasonable to expect that minorities in these stages may become aware of their emotions, react directly to others (e.g., Reaction), or seek support from others for validation and advice regarding how to deal with discrimination (e.g., Support Seeking). In the later stages of racial identity development, minorities may engage in more introspection and self-exploration, have more resources to deal with discrimination, and commit themselves to stopping racial discrimination. They may rely on their self-capacity to grow and learn from these experiences (e.g., Resilience) and dedicate themselves to educating people both within and outside their community to become better prepared to deal with discrimination (e.g., Education or Advocacy).

We developed six items to assess each of the six dimensions (i.e., Internalization, Focusing on Strengths/Resilience, Education, Disengagement, Reaction, and Support Seeking). We also asked five experts in the areas of discrimination, coping, and ethnic studies to evaluate the appropriateness and match between the items and dimensions. On the basis of this information, we made additional revisions to the items. The revised 36-item measure was used to collect a second independent pilot data set (N = 824; 38% men and 61% women; 15% African American, 43% Asian American, 25% Latino/a American, 5% Native American, 8% multiracial American, and 5% other) from public universities in the Midwest and on the West coast. A PAF analysis was used, and the results suggested that the Reaction factor should be divided into Drug and Alcohol Use and Resistance factors. Also, some items with low factor loadings were reworded. Three different experts were invited to judge the match between the items and the dimensions, and necessary revisions were made to the items. This analysis led to a new revised scale consisting of 41 items (with 10 items negatively worded) that assessed seven dimensions: Internalization (six items [four positive and two negative]), Disengagement (five negative items), Drug and Alcohol Use (five items [three positive and two negative]), Support Seeking (five items [two positive and three negative]), Resistance (six items [three positive and three negative]), Resilience (six positive items), and Education/ Advocacy (eight positive items).

This version of the measure was administered to participants. The instructions to individuals who completed the scale were as follows:

- This is a list of strategies that some people use to deal with their experiences of discrimination. Please respond to the following items as honestly as possible to reflect how much each strategy best describes the ways you cope with discrimination. There are no right or wrong answers.

Participants were asked to respond to these items using six response options (1 = never like me, 2 = a little like me, 3 = sometimes like me, 4 = often like me, 5 = usually like me, and 6 = always like me).

**Participants and procedure.** A total of 656 minority students from public universities in the Midwest and on the West coast participated in this study. We randomly divided this sample into two groups. The first group was used in Study 1 for conducting exploratory factor analyses of the measure and evaluating the reliability of scores reflecting the factors, whereas the second group was used in Study 2 for conducting confirmatory factor analyses and evaluating the validity of the measure.

Students from the Midwest were recruited through an e-mail invitation letter that was sent to potential participants. Students from the West coast were recruited from psychology courses. A flyer described the study, and a website address was distributed to students. Participants were informed that they must be at least 18 years old and identify themselves as Asian American, African American, Native American, or Latino/a American to participate in the study. Completion of the survey indicated their consent to participate in the study. Participants were told that this study was designed to develop a coping with discrimination scale and that it would take approximately 15–20 min to complete the questionnaire. To keep the surveys anonymous, no identifiable demographic information (e.g., name, ID number, or e-mail address) was collected. Also, students from the Midwest could provide their contact information, which would be stored in a separate data file, to receive a $5 check for their participation. Students from the West coast could print a participation certificate to obtain research credits for their class. In total, there were 600 participants from the Midwest and 201 participants from the West coast. Among the 801 participants, 117 did not complete the survey, and 28 incorrectly answered one validity item (i.e., “Please click #1 for this item”). Thus, a final sample of 656 participants (516 from the Midwest and 140 from the West coast) was employed in the analyses.

The first sample included 328 participants (129 [39%] males and 197 [60%] females; two did not report their sex) with ages ranging from 18 to 59 years (M = 21.69 years, SD = 5.85 years). Participants were Asian American (41%), Latino/a American (25%), African American (17%), multiracial American (15%), and Native American (2%). Forty-nine percent of the participants
identified their socioeconomic status as middle class, followed by lower middle class (22%) and upper middle class (20%). Approximately half of the participants were freshmen (24%) or sophomores (27%), with the remaining participants being juniors (17%), seniors (18%), and graduate students (11%).

Results and Discussion

**Exploratory factor analysis.** A PAF analysis was conducted on the 41 CDS items. We used a parallel analysis to determine the number of factors to extract (Brown, 2006; Horn, 1965; Kahn, 2006; Russell, 2002). The rationale of a parallel analysis is that the factors underlying the measures should account for more variance than is expected by chance based on factor extractions using multiple sets of random data (Brown, 2006). The guideline for factor selection is to retain factors derived from the data with higher eigenvalues than the average values for the corresponding factors in the random data sets. Based on 1,000 random data sets, the results from the parallel analysis indicated that five factors should be extracted (see Figure 1). One limitation of parallel analysis is that the eigenvalue from the actual data can fall just above or below the eigenvalue from the corresponding factor in the random data sets. As indicated in Figure 1, the eigenvalue for the sixth factor (i.e., 1.438) is just below the average eigenvalue for the sixth factor from the 1,000 random data sets (i.e., 1.447).

Therefore, the five- and six-factor solutions were explored using both orthogonal (i.e., varimax) and oblique (i.e., promax) rotations of the extracted factors. The five-factor solution with an oblique rotation was found to be the most interpretable. Items were selected for the measure based on the factor pattern matrix using the following criteria: (a) a factor loading above .45 on the factor, (b) cross-loadings on other factors of less than .30, and (c) no more than five items representing each factor (e.g., Brown, 2006; Tabachnick & Fidell, 2007). On the basis of these criteria, 25 items out of the original 41 items were retained. A second exploratory factor analysis using PAF extraction was conducted on this set of 25 items. A five-factor solution accounted for 51.73% of the total variance in the items before rotation. Following an oblique rotation, loadings of the items on the respective factors all exceeded .42, and no item was found to have a cross-loading exceeding .30 on the other factors. This indicates that our five-factor solution provides simple structure (Thurstone, 1947), where each item has high loadings on one factor and low loadings on the other factors. The five factors and their respective items, factor loadings, communality estimates, means, and standard deviations are presented in Table 1.

Factor 1 was labeled Education/Advocacy (five items, accounting for 16.11% of the total variance before rotation; four items from the education/advocacy dimension and one item from the resilience dimension). These items reflected efforts to deal with discrimination through educational or advocacy efforts at individual and societal levels. The highest loading items were “I educate others about the negative impact of discrimination” and “I help people to be better prepared to deal with discrimination.”

Factor 2 was labeled Internalization (five items, accounting for 13.03% of the total variance before rotation; four items from the education/advocacy dimension and one item from the resilience dimension). Internalization is defined as the tendency to attribute the cause or responsibility of a discriminatory incident to oneself. The highest loading items were “I wonder if I did something to provoke this incident” and “I wonder if I did something to offend others.”

Factor 3 was labeled Drug and Alcohol Use (five items, accounting for 9.59% of the total variance before rotation; all items from the internalization dimension). Internalization is defined as the tendency to attribute the cause or responsibility of a discriminatory incident to oneself. The highest loading items were “I wonder if I did something to provoke this incident” and “I wonder if I did something to offend others.”

Factor 4 was labeled Other Coping Strategies (four items, accounting for 8.24% of the total variance before rotation; two items from the education/advocacy dimension and two items from the resilience dimension). These items reflected efforts to cope with discrimination through other strategies, such as seeking support or using humor. The highest loading items were “I seek support from others” and “I use humor to cope with discrimination.”

Factor 5 was labeled Resilience (five items, accounting for 7.70% of the total variance before rotation; five items from the resilience dimension). These items reflected the ability to cope with discrimination through positive thoughts, strategies, and actions. The highest loading items were “I have positive thoughts about discrimination” and “I take action to cope with discrimination.”

Figure 1. The results for the parallel analysis and scree plot.
Table 1

Items, Factor Loadings, Communalities Estimates, Mean, and SD for the Coping With Discrimination Scale

<table>
<thead>
<tr>
<th>Education/Advocacy</th>
<th>Factor loading</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>(h^2)</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. I educate others about the negative impact of discrimination.</td>
<td>.91</td>
<td>-.08</td>
<td>.02</td>
<td>.01</td>
<td>-.03</td>
<td>.83</td>
<td>3.12</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>16. I help people to be better prepared to deal with discrimination.</td>
<td>.81</td>
<td>-.07</td>
<td>.07</td>
<td>-.10</td>
<td>-.12</td>
<td>.67</td>
<td>2.91</td>
<td>1.37</td>
<td></td>
</tr>
<tr>
<td>11. I try to stop discrimination at the societal level.</td>
<td>.79</td>
<td>-.05</td>
<td>-.01</td>
<td>.02</td>
<td>.00</td>
<td>.63</td>
<td>3.22</td>
<td>1.43</td>
<td></td>
</tr>
<tr>
<td>1. I try to educate people so that they are aware of discrimination.</td>
<td>.77</td>
<td>-.02</td>
<td>-.06</td>
<td>.08</td>
<td>-.06</td>
<td>.66</td>
<td>3.34</td>
<td>1.49</td>
<td></td>
</tr>
<tr>
<td>6. I educate myself to be better prepared to deal with discrimination.</td>
<td>.74</td>
<td>.01</td>
<td>.01</td>
<td>-.03</td>
<td>.03</td>
<td>.53</td>
<td>3.56</td>
<td>1.50</td>
<td></td>
</tr>
</tbody>
</table>

Internalization

| 5. I wonder if I did something to provoke this incident. | .03 | .83 | .04 | .04 | .02 | .71 | 2.02 | 1.19 |
| 10. I wonder if I did something to offend others. | .09 | .80 | -.03 | -.04 | .00 | .66 | 2.36 | 1.28 |
| 15. I wonder if I did something wrong. | .07 | .79 | -.05 | -.08 | .06 | .67 | 2.16 | 1.20 |
| 20. I believe I may have triggered the incident. | -.04 | .73 | -.11 | .17 | .04 | .54 | 1.70 | .89 |
| 25. I do not think that I caused this event to happen. | .21 | -.50 | -.17 | .00 | .24 | .32 | 3.13 | 1.70 |

Drug and Alcohol Use

| 8. I use drugs or alcohol to take my mind off things. | .08 | .04 | .83 | -.04 | .10 | .71 | 1.25 | 0.73 |
| 18. I do not use alcohol or drugs to help me deal with it. | .03 | .06 | -.69 | -.04 | .08 | .47 | 1.78 | 1.60 |
| 23. I use drugs or alcohol to numb my feelings. | .05 | .06 | .63 | .01 | .05 | .42 | 1.17 | 0.65 |
| 13. I do not use drugs or alcohol to help me forget about discrimination. | .03 | .12 | -.58 | -.01 | .04 | .34 | 1.82 | 1.65 |
| 3. I try to stop thinking about it by taking alcohol or drugs. | .01 | .02 | .53 | .06 | .13 | .32 | 1.13 | 0.52 |

Resistance

| 24. I directly challenge the person who offended me. | .14 | -.03 | -.06 | .81 | .09 | .72 | 2.61 | 1.33 |
| 9. I get into an argument with the person. | -.01 | .06 | -.06 | .79 | .07 | .62 | 2.58 | 1.32 |
| 4. I respond by attacking others’ ignorant beliefs. | .15 | .02 | .04 | .55 | .10 | .37 | 2.37 | 1.38 |
| 19. I try not to fight with the person who offended me. | .29 | -.03 | -.10 | -.53 | .15 | .32 | 2.38 | 1.54 |
| 14. I do not directly challenge the person. | .07 | -.01 | -.12 | -.53 | .20 | .33 | 3.86 | 1.40 |

Detachment

| 12. It’s hard for me to seek emotional support from other people. | .02 | -.05 | .10 | .06 | .76 | .58 | 2.38 | 1.41 |
| 2. I do not talk with others about my feelings. | -.10 | -.08 | -.04 | .07 | .67 | .46 | 2.62 | 1.45 |
| 17. I do not have anyone to turn to for support. | .06 | .06 | .05 | -.01 | .57 | .34 | 1.59 | 0.97 |
| 7. I’ve stopped trying to do anything. | -.17 | -.02 | .01 | -.10 | .55 | .38 | 1.85 | 1.09 |
| 22. I have no idea what to do. | -.12 | .22 | .02 | -.14 | .42 | .33 | 2.06 | 1.14 |

Note. \(N = 328\). Reversed items are 13, 14, 18, 19, and 25. Participants respond to these items using six response options (1 = never like me, 2 = a little like me, 3 = sometimes like me, 4 = often like me, 5 = usually like me, and 6 = always like me). The instructions to participants are as follows: “This is a list of strategies that some people use to deal with their experiences of discrimination. Please respond to the following items as honestly as possible to reflect how much each strategy best describes the ways you cope with discrimination. There are no right or wrong answers.”
(2003) racial identity development model, minorities who dedicate themselves to educating people to become better prepared to deal with discrimination (e.g., education or advocacy) are likely to have stronger racial/ethnic identities. For this reason, in testing construct validity, we expected a moderate positive association between Education/Advocacy and ethnic identity. Also, when minorities are in the middle stage of developing their racial identity, they may become more aware of racial discrimination events and more likely to feel injustice and directly challenge others for the racial discrimination events (e.g., confronting the person who offended them). We expected a positive but small association between Resistance and ethnic identity. Those who tend to use the internalization coping strategy (e.g., wondering if they did something to offend others) in dealing with racial discrimination may be more likely to feel depressed and have low self-esteem. Thus, we expected Internalization to have a moderate positive association with depression and a moderate or small negative association with self-esteem. From the coping literature, substance use has a small positive association with helplessness (Voth & Sirois, 2009). We therefore expected Drug and Alcohol Use to have a small positive association with depression. The use of behavioral disengagement has moderate positive associations with depression (Catanzaro & Greenwood, 1994) and hopelessness (Voth & Sirois, 2009) and a small negative association with self-esteem. From the discrimination literature, substance use has a small positive association with helplessness (Voth & Sirois, 2009). We therefore expected Drug and Alcohol Use to have a small positive association with depression. The use of behavioral disengagement has moderate positive associations with depression (Catanzaro & Greenwood, 1994) and hopelessness (Voth & Sirois, 2009) and a small negative association with self-esteem. From the coping literature, substance use has a small positive association with helplessness (Voth & Sirois, 2009) and a small negative association with job satisfaction (Grant & Langan-Fox, 2007). From the discrimination literature, coping with discrimination through social support was positively associated with positive affect among Asian Americans (Yoo & Lee, 2005). On the basis of the above indirect evidence, we expected Detachment to have a moderate positive association with depression along with a small negative association with life satisfaction.

Although limited, the existing literature suggests that coping strategies are likely to lessen the negative impact of racial discrimination (e.g., depression) and enhance the positive gains from dealing with racial discrimination across ethnic groups and between men and women. For example, the use of cognitive avoidance coping to deal with racial discrimination was positively related to reexperiencing symptoms (e.g., unwanted thoughts and images about racial discrimination) and avoidance symptoms (e.g., awareness of emotional numbness about racial discrimination) for African Americans (Thompson Sanders, 2006). The coping strategy of social support was associated with self-reported health among Mexican Americans (Finch & Vega, 2003) and reduced levels of depression among Korean immigrants (Noh & Kaspar, 2003). Therefore, we expected that the construct validity of the coping strategies, as demonstrated by the associations between scores on the five CDS subscales and scores on the four outcome variables, would be similar across different racial/ethnic groups and between males and females.

Method

Participants and procedure. The second randomly selected set of data was used in Study 2. There were 328 participants (130 [40%] males and 198 [60%] females) with ages ranging from 18 to 67 years (M = 21.30 years, SD = 5.71 years). Participants were Asian American (n = 129; 39%), African American (n = 74; 23%), Latino/a American (n = 72; 22%), multiracial American (n = 41; 13%), and Native American (n = 3; 1%). Forty-seven percent of participants reported their socioeconomic status as middle class, followed by lower middle class (23%) and upper middle class (20%). Approximately half of the participants were freshmen (28%) or sophomores (27%), with the remaining participants being juniors (14%), seniors (19%), and graduate students (10%).

The procedures used in Study 2 were the same as those used in Study 1.

Measures.

Depression. Depression was assessed by the Depression subscale (seven items) of the Depression Anxiety and Stress Scales (DASS)—Short Form (Lovibond & Lovibond, 1995). Participants rated the extent to which each statement applied to them over the past week on a scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much or most of the time). Higher scores indicate greater levels of depression. In a previous study, coefficient alphas were .88 (95% CI [.85, .90]) for Asian Americans, .81 (95% CI [.76, .85]) for African Americans, and .88 (95% CI [.85, .91]) for Hispanic Americans (Wei, Russell, Mallinckrodt, & Zakalik, 2004); coefficient alpha was .91 (95% CI [.89, .92]) in this study. Construct validity was supported by a positive association with anxiety among minority college students (Wei et al., 2004).

Life satisfaction. Life satisfaction was measured by the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). The SWLS is a five-item scale measuring general life satisfaction. Each item is rated on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree); higher scores reflect greater satisfaction with life. The coefficient alpha was .87 (95% CI [.84, .89]).
CI [.84, .89]) for this measure among minority college students (David, Okazaki, & Saw, 2009). In the present study, the coefficient alpha was .88 (95% CI [.87, .91]). The construct validity of the SWLS was supported by negative associations with anxiety, depression, and general distress (David et al., 2009).

**Self-esteem.** Self-esteem was assessed by the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). The RSES (10 items) is a popular measure of global self-esteem. Each item is rated using a 4-point response format ranging from 1 (strongly disagree) to 4 (strongly agree); higher scores indicate greater self-esteem. The coefficient alphas for the RSES ranged from .86 (95% CI [.83, .87]) to .92 (95% CI [.89, .94]) for Asian Americans (Lee, 2005; Liu & Iwamoto, 2006) and was .91 (95% CI [.90, .93]) in this study. Construct validity has been supported by a negative association with psychological distress among Asian Americans (Liu & Iwamoto, 2006).

**Ethnic identity.** Ethnic identity was measured by the Multidimensional Ethnic Identity Measure—Revised (MEIM–R; Phinney & Ong, 2007). The six-item MEIM–R was developed from the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992) to measure ethnic identity. Participants are asked to rate the items on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating stronger ethnic identity. The coefficient alpha for the MEIM–R was .81 (95% CI [.76, .85]) for diverse university students (Phinney & Ong, 2007) and .92 (95% CI [.90, .93]) in the present study. Construct validity was supported by a positive association with life satisfaction and a negative association with depression for the 12-item MEIM among minority college students (David et al., 2009).

### Results and Discussion

**Confirmatory factor analysis.** We conducted a confirmatory factor analysis on the 25-item CDS using the maximum-likelihood estimation method available in LISREL 8.54. As suggested by Hu and Bentler (1999), three fit indices were used to evaluate the fit of the model to the data: the comparative fit index (CFI; a value of .95 or greater suggests adequate model fit), the root-mean-square error of approximation (RMSEA; a value of .06 or less suggests adequate model fit), and the standardized root-mean-square residual (SRMR; a value of .08 or less suggests adequate model fit). We also tested several alternative models. In addition to the five-factor oblique model found in Study 1, we also tested (a) a one-factor model with all 25 items loading on the factor, (b) a five-factor orthogonal model, and (c) a five-factor oblique model created by adding two method factors (see details below).

The fit indices for the four models are presented in Table 3. Because the five-factor oblique model and the five-factor orthogonal model are nested models (i.e., the oblique model adds correlations among the factors to the orthogonal model, with the nature of the factors being unchanged), a chi-square difference test was used to compare the fit of these two models to the data. The significant chi-square difference, \( \chi^2(10, N = 328) = 93.30, p < .001 \), suggested that there were some statistically significant correlations among the factors; therefore, the five-factor oblique model provided a better fit to the data. In addition, the one-factor model is nested within the five-factor oblique model, with the difference being that the one-factor model sets the correlations among the factors at 1.0. Thus, a chi-square difference test was used to compare these two models. The significant chi-square difference, \( \chi^2(10, N = 328) = 2,049.40, p < .001 \), also indicated that the five-factor oblique model provided a better fit to the data.

Finally, we modified the five-factor oblique model by adding two method factors that were designed to capture the possible influence of systematic errors in the items due to the direction of item wording. In other words, participants may have a systematic way of responding to the positively or negatively worded items irrespective of the construct that is being assessed. We followed Russell’s (1996) recommendation of removing this systematic error by specifying two orthogonal method factors, with the positively worded items loading on the first factor and the negatively worded items loading on the second factor. Because the five-factor oblique model and the five-factor oblique model with the two method factors are not nested models, one is unable to conduct a chi-square difference test. However, as can be seen in Table 3, the five-factor oblique model that included the two method factors provided an excellent fit to the data, \( \chi^2(240, N = 328) = 458.82, p < .001 \), CFI = .96, RMSEA = .04 (90% CI [.03, .05]), SRMS = .06. All three fit indices met the criteria (i.e., CFI > .95, RMSEA < .06, and SRMR < .08) proposed by Hu and Bentler (1999). Therefore, we concluded that the five-factor oblique model with the two method factors appeared to provide the best fit to the data.

**Reliability.** As in Study 1, the results indicated an adequate level of reliability for all five subscales: Education/Advocacy (\( \alpha = .90, 95\% \text{ CI}[.88, .91] \)), Internalization (\( \alpha = .77, 95\% \text{ CI}[.73, .81] \)), Drug and Alcohol Use (\( \alpha = .80, 95\% \text{ CI}[.76, .83] \)), Resistance (\( \alpha = .72, 95\% \text{ CI}[.67, .77] \)), and Detachment (\( \alpha = .73, 95\% \text{ CI}[.68, .77] \)). The correlations among scores on the scales ranged from −.25 to .24 (see Table 4). There was a small negative association between Education/Advocacy and Detachment, a small

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>( \chi^2 )</th>
<th>CFI</th>
<th>RMSEA [CI]</th>
<th>SRMR</th>
</tr>
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<tbody>
<tr>
<td>1. Oblique five factors</td>
<td>265</td>
<td>684.11</td>
<td>.91</td>
<td>.06 [.05, .07]</td>
<td>.07</td>
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<tr>
<td>2. Orthogonal five factors</td>
<td>275</td>
<td>777.41</td>
<td>.90</td>
<td>.06 [.05, .07]</td>
<td>.11</td>
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<tr>
<td>3. One first-order</td>
<td>275</td>
<td>2,733.51</td>
<td>.50</td>
<td>.17 [.17, .18]</td>
<td>.18</td>
</tr>
<tr>
<td>4. Oblique five factors + two method factors</td>
<td>240</td>
<td>458.82</td>
<td>.96</td>
<td>.04 [.03, .05]</td>
<td>.06</td>
</tr>
</tbody>
</table>

*Note. N = 328. CDS = Coping With Discrimination Scale; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; CI = confidence interval for RMSEA; SRMR = standardized root-mean-square residual.*
positive association between Internalization and Drug and Alcohol Use, and a small positive association between Internalization and Detachment. Once again, the correlations among the scales accounted for 6% or less of the variance in the measures, indicating the distinctiveness of scores on each measure.

Validity. Table 4 presents the correlations of scores on the five subscales from the CDS with the other variables that were assessed in Study 2. As expected, results indicated that Education/Advocacy scores had a moderate positive association with MEIM scores (ethnic identity), Internalization scores had a small positive association with DASS scores (depression) but a moderate negative association with RSES scores (self-esteem), Drug and Alcohol Use scores had a moderate association with DASS scores (depression), Resistance scores had a small positive association with MEIM–R scores (ethnic identity), and Detachment scores had a moderate positive association with DASS scores (depression) but a negative association with SWLS scores (life satisfaction). Such results suggest that greater use of education/advocacy and resistance is related to higher levels of ethnic identity, greater use of internalization is related to higher levels of depression and lower levels of self-esteem, greater use of drugs and alcohol is related to higher levels of depression, and greater use of detachment is related to higher levels of depression and lower levels of life satisfaction. All of these results support the construct validity of the CDS.

We anticipated that the magnitude of the correlations between the five subscale scores from the CDS and the four outcome variables (i.e., depression, life satisfaction, self-esteem, and ethnic identity) would be equivalent for the different ethnic/racial groups and for males and females. Because of the small sample sizes for Native Americans (n = 3) and multiracial Americans (n = 41), the comparisons among ethnic groups were limited to the Asian American, African American, and Latino/a American groups. In a multiple-group structural equation modeling analysis, the unconstrained model (i.e., the associations between the five CDS subscales and four outcome variables were allowed to vary across the three groups; the saturated model with a chi-square value of zero) was compared with the constrained model (i.e., the associations among these variables were set to be identical across the three groups). The result for the constrained model was χ²(40, N = 275) = 44.75, p = .28. This nonsignificant result indicated that no differences were detected in the population correlations among these variables across the three ethnic/racial groups. In Table 5, the correlations among the scales across the three ethnic groups were reported. Contrary to popular belief, a nonsignificant result does not indicate that all correlations are similar across the three ethnic populations. To examine the similarity of correlations across ethnic/racial populations, all possible pairwise confidence intervals were examined for all 5 (CDS subscales) × 4 (outcome variables) = 20 correlations (i.e., a total of 60 comparisons). We used 99% confidence intervals rather than 95% confidence intervals to reduce the familywise error rate. All of the 99% confidence intervals for the correlation differences included zero, and about 8% of the intervals were narrow enough (i.e., lower limit above − .20 and upper limit below .20, where .20 is a value that we believe represents a small difference) to support a claim of similarity across the three ethnic/racial conditions.
The same procedure was used for testing whether the relationships among these variables varied for males and females. The 25-item CDS appears to possess sound psychometric properties in terms of factor structure, reliability, and validity. Validity of the CDS was also found to be similar across the three racial/ethnic groups and between males and females.

**Study 3: Examination of Test–Retest Reliability and Validity**

The purpose of Study 3 was to provide additional reliability and validity evidence for the CDS. Specifically, test–retest reliability of scores on the instrument was assessed over a 2-week period of time. We hypothesized that each subscale from the CDS would show a high level of test–retest reliability over this time period. Regarding validity, we examined the extent to which scores on the CDS were influenced by social desirability. We also further examined validity of the CDS by testing its relationship with established coping measures (i.e., the subscales of Active Coping, Self-Blame, Substance Use, and Behavioral Disengagement from the Brief COPE; Carver, 1997). It is reasonable to expect that those who are more likely to use the education or advocacy strategies may be more likely to engage in active coping. Hence, it was expected that scores on the Education/Advocacy subscale of the CDS would be moderately and positively associated with scores on the Active Coping subscale of the Brief COPE. Similarly, those who are more likely to use the internalization strategy, use drugs and alcohol, and detach themselves from others may be more likely to use the self-blame, substance use, and behavioral disengagement coping strategies, respectively. Thus, we expected that scores on the Internalization, Drug and Alcohol Use, and Detachment subscales of the CDS would be moderately and positively associated with scores on the Self-Blame, Substance Use, and Behavioral Disengagement subscales of the Brief COPE, respectively.
Method

Participants. There were 67 participants (33 women, 33 men; one participant did not respond to this question) in Study 3. Their ages ranged from 18 to 34 years ($M = 21.58$ years, $SD = 3.39$ years). Forty percent of the participants were Asian American, followed by African American (24%), Latino/a American (22%), and multiracial American (10%). Regarding socioeconomic status, 5% reported being lower class, 19% reported lower middle class, 51% reported middle class, and 24% reported upper middle class. One third of the participants were graduate students (33%), followed by sophomores (31%), juniors (21%), seniors (9%), and freshmen (6%).

Procedure. One hundred and fifty minority students (50 Asian Americans, 50 African Americans, and 50 Latino/a Americans) from a Midwest university were called and agreed to participate in Study 3. They were told that this study was examining the reliability and validity of a coping with discrimination scale. All students were asked to participate in this study twice, with students receiving $5 after completion of each survey.

For the first assessment, 67 students participated and completed the CDS, the Impression Management (IM) subscale of the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984, 1994), and subscales (i.e., Active Coping, Self-Blame, Substance Use, and Behavioral Disengagement) of the Brief COPE (Carver et al., 1989). Two weeks later participants were asked to complete the CDS a second time. Fifty-four participants (81%) completed the second assessment. We removed one participant due to an incorrectly answered validity item. Therefore, a sample of 67 participants who completed the first assessment was used for the additional validity analyses, and a sample of 53 participants who completed the first and second assessments was used for the test–retest analyses.¹

Instruments.

Social desirability. The IM subscale of the BIDR (Paulhus, 1984, 1994) was used to assess social desirability. The IM was developed based on the assumption that some people tend to underreport undesirable behaviors and overreport desirable behaviors in an attempt to manage their impression and receive social approval. The IM is a 20-item scale where participants are asked to respond to the questions using a 7-point scale ranging from “not true” to “very true.” Sample items from this subscale are “I never cover up my mistakes” and “I sometimes tell lies if I have to” (reverse item). Regarding scoring, one point is given for a rating of 6 or 7 (i.e., very true) on an item. Thus, scores on the IM scale can range from 0 to 20. In a previous study, the alpha coefficient for the IM measure was .67 (95% CI [.59, .74]) among minority college students (David et al., 2009); the coefficient alpha was .74 (95% CI [.63, .82]) in the current study. Validity of the IM has been demonstrated by the positive association between scores on the IM and scores on the Marlowe-Crone Social Desirability scale (Paulhus, 1991).

Coping strategies. General coping strategies were assessed by the subscales of Active Coping (two items), Self-Blame (two items), Substance Use (two items), and Behavioral Disengagement (two items) from the Brief COPE (Carver, 1997). Participants were instructed to respond to the items in terms of difficult or stressful racial events. Each item is rated on a 4-point scale ranging from 1 (I haven’t been doing this at all) to 4 (I’ve been doing this a lot). A higher score indicates a greater use of the corresponding coping strategy. Carver (1997) reported that the coefficient alpha was .68 (95% CI [.57, .76]) for Active Coping, .69 (95% CI [.58, .77]) for Self-Blame, .90 (95% CI [.86, .93]) for Substance Use, and .65 (95% CI [.53, .74]) for Behavioral Disengagement. In the present study, the coefficient alpha was .64 (95% CI [.40, .79]) for Active Coping, .79 (95% CI [.66, .88]) for Self-Blame, .81 (95% CI [.68, .89]) for Substance Use, and .69 (95% CI [.49, .81]) for Behavioral Disengagement. Regarding validity evidence, Fairley, Galves, Dickinson, and Perez (2005) reported that mental health functioning was negatively associated with Self-Blame, Substance Use, and Behavioral Disengagement. Also, perceived general stress was negatively associated with Active Coping but positively associated with Self-Blame, Substance Use, and Behavioral Disengagement.

Results and Discussion

Reliability. The internal consistencies of the five subscales of the CDS in Study 3 (see Tables 6 and 7) were very similar to those found in Studies 1 and 2. The 2-week test–retest reliability estimates for the five subscales of the CDS were as follows: Education/Advocacy, $r = .85$, 95% CI [.75, .91]; Internalization, $r = .82$, 95% CI [.71, .89]; Drug and Alcohol Use, $r = .48$, 95% CI [.24, .66]; Resistance, $r = .70$, 95% CI [.53, .82]; and Detachment, $r = .73$, 95% CI [.57, .84]. A paired-samples $t$ test was also conducted to test whether there was a change in the mean score for each subscale over time. There were no statistically significant mean differences, $t(52) = 1.02$ to $-1.34$, $p = .19$ to .91. Moreover, all 95% confidence intervals for mean differences were narrow and included zero, indicating that the average score on each subscale was similar over time. The largest absolute lower or upper interval estimate for the mean difference between two time points was 0.36 (on a 1–6 scale), suggesting a very small difference in population means over time. Therefore, the results from both the test–retest reliability estimates and the paired-samples $t$-test confidence intervals indicated that scores on the CDS appeared to be relatively stable over a 2-week period of time.

Regarding correlations among the five subscales, as shown in Tables 6 and 7, results indicated a moderate positive association between Education/Advocacy and Resistance at Times 1 and 2. There was also a moderate positive association between Detachment and Internalization at Times 1 and 2. Similar to Studies 1 and 2, all the correlations accounted for 27% or less (Time 1) and 11% (Time 2), all the correlations accounted for 27% or less (Time 1) and 11% (Time 2).

¹ Individuals who participated in the first and second assessments were compared with those who only participated in the first assessment for the studied variables (i.e., five subscales from the CDS, the IM subscale of the BIDR, and four subscales from the Brief COPE). There were no statistically significant mean differences between the two groups based on independent-sample $t$ tests, $t(65) = -1.76$, $p = .08$ to .17. Furthermore, all 95% confidence intervals for mean differences included zero and were narrow, suggesting that there were no important differences between those who participated in the first and second assessments and those who only participated in the first assessment. Also, we compared the rate of participation in the second assessment for the different ethnic groups and males and females. A chi-square test indicated that there were no significant differences in the participation rate for the different ethnic groups, $X^2(4, N = 67) = 1.76$, $p = .78$, or males and females, $X^2(1, N = 66) = 3.45$, $p = .06$. Therefore, it appears that there is no detectable bias in the sample due to lack of participation in the second assessment.
Table 6

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
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<th>7</th>
<th>8</th>
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<td>.10</td>
<td>—</td>
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<td>.52**</td>
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<td>—.13</td>
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<td>.00</td>
<td>—.34**</td>
<td>—.13</td>
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<td>7. Active Coping</td>
<td>.35**</td>
<td>—.16</td>
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<td>.03</td>
<td>.22**</td>
<td>—.10</td>
<td>.08</td>
<td>—.04</td>
<td>.52**</td>
<td>.34**</td>
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<td>10. Behavioral Disengagement</td>
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<td>.13</td>
<td>—.06</td>
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<td>—.15</td>
<td>—.04</td>
<td>.52**</td>
<td>.34**</td>
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</tbody>
</table>

M: 3.18 2.28 1.28 2.55 2.28 0.33 2.89 1.94 1.14 1.51
SD: 1.17 1.04 0.64 1.07 0.87 0.18 0.73 0.93 0.38 0.58

α (Time 1) [95% CI] .88 [.83, .93] .87 [.83, .93] .78 [.64, .85] .83 [.71, .88] .73 [.56, .82] .74 [.63, .82] .64 [.40, .79] .79 [.66, .88] .81 [.68, .89] .69 [.49, .81]

Note. N = 67. CI = confidence interval for alpha.
*p < .05.  **p < .01.  ***p < .001.

The purpose of Study 4 was to examine the validity of the CDS relative to several other measures. Specifically, we examined whether the CDS (i.e., Education/Advocacy, Internalization, Drug and Alcohol Use, and Behavioral Disengagement from the Brief COPE [Carver, 1997]) in predicting different outcomes (i.e., depression, life satisfaction, self-esteem, and ethnic identity) over and above general coping measures (i.e., the subscales of Active Coping, Self-Blame, Substance Use, and Behavioral Disengagement from the Brief COPE). As indicated in Table 6, the results, as expected, indicated that scores on the subscales of Active Coping, Self-Blame, Substance Use, and Behavioral Disengagement were significantly and positively associated with scores on the subscales of the CDS. However, this is not true for the other subscales where the relationship between social desirability and these outcomes is small to large according to Cohen (1988). This suggests that social desirability has an effect on Resistance scores but not for the other subscales where the relationship is non-significant. As indicated in Table 6, the results, as expected, indicated that scores on the subscales of Active Coping, Self-Blame, Substance Use, and Behavioral Disengagement were significantly and positively associated with scores on the subscales of the CDS. However, this is not true for the other subscales where the relationship between social desirability and these outcomes is small to large according to Cohen (1988). This suggests that social desirability has an effect on Resistance scores but not for the other subscales where the relationship is non-significant.
Students were recruited from a Midwestern university through an e-mail invitation letter to potential participants. Participants were informed that they must be at least 18 years old and identify themselves as a minority to participate. They were told that this study was examining the reliability and validity of a coping with discrimination scale and that it would take approximately 15 to 25 min to complete the survey. Completion of the survey provided their consent to participate in the study. No identifiable demographic information (e.g., name or e-mail address) was collected. However, students could provide their contact information, which was stored in a separate data file, to receive a $5 check for their participation.

**Instruments.** The 25-item CDS developed in the previous studies was used in Study 4. Also, coping strategies, life satisfaction, self-esteem, ethnic identity, and social desirability were measured by the scales used in Studies 2 and 3. Only depression was measured by another popular scale, the short version of the Center for Epidemiological Studies—Depression Scale (CES-D short version; Kohout, Berkman, Evans, & Cornoni-Huntley, 1993). The CES-D short version (11 items) assesses the current level of depressive symptoms. Participants were asked to rate how often they had experienced each symptom during the previous week on a scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time). Scores range from 0 to 33, with higher scores indicating a higher level of depressive symptoms. Wei, Heppner, Ku, and Liao (in press) reported a coefficient alpha of .85 (95% CI [.82, .88]) for the CES-D short version and demonstrated construct validity through a positive association with perceived general stress among Asian Americans.

**Results and Discussion**

As in Studies 1 through 3, the results indicated an adequate level of reliability for all five CDS subscales (see Table 8): Education/Advocacy, α = .86, 95% CI [.83, .89]; Internalization, α = .88, 95% CI [.85, .90]; Drug and Alcohol Use, α = .75, 95% CI [.69, .80]; Resistance, α = .80, 95% CI [.75, .84]; and Detachment, α = .76, 95% CI [.70, .81]. The correlations among scores on the scales ranged from −.07 to .44 (see Table 8). Regarding correlations among the five CDS subscales, there was a small positive association between Education/Advocacy and Resistance, a moderate positive association between Internalization and Detachment, and a moderate positive association between Resistance and Drug and Alcohol Use. Similar to Studies 1 through 3, these correlations accounted for 19% or less of the variance in the measures, indicating the distinctiveness of each factor.

**Incremental validity.** Hierarchical regression analyses were conducted to examine the incremental validity of the CDS. All four coping strategies (i.e., active coping, self-blame, substance use, and behavioral disengagement) assessed by the Brief COPE were entered in Step 1 of the regression analysis, with the five CDS subscales (i.e., Education/Advocacy, Internalization, Drug and Alcohol Use, Resistance, and Detachment) entered in Step 2. As can be seen in Table 9, the five CDS subscales accounted for an additional 5% of variance, ∆F(5, 209) = 3.05, ∆R² = .05, p = .011, in depression over and above the Brief COPE. The CDS subscale was found to significantly predict depression after controlling for the other measures of coping. For life satisfaction, the five CDS subscales accounted for 6% of the variance over and above the general coping measure, ∆F(5, 209) = 3.30, ∆R² = .06, p = .007. The Internalization and Resistance subscales uniquely and significantly predicted life satisfaction. Similarly, all five CDS subscales added 5% incremental variance in predicting self-esteem, ∆F(5, 210) = 3.09, ∆R² = .05, p = .01, over and above the Brief COPE. The subscales of Internalization and Detachment uniquely and significantly predicted self-esteem. Finally, all five CDS subscales added a significant 6% incremental variance in predicting ethnic identity beyond the general coping measure, ∆F(5, 210) = 3.08, ∆R² = .06, p = .011. The Education/Advocacy subscale was found to uniquely predict ethnic identity. These results demonstrate the incremental validity of the CDS over and above the general coping strategies.

**Social desirability.** Hierarchical regression analyses were conducted to examine whether social desirability plays a role in the associations between the CDS and the outcome variables (i.e., depression, life satisfaction, self-esteem, and/or ethnic identity). Social desirability was entered in Step 1, with the five CDS subscales (i.e., Education/Advocacy, Internalization, Drug and Alcohol Use, Resistance, and Detachment) entered in Step 2. The five CDS subscales accounted for an additional 24% of variance, ∆F(5, 194) = 12.92, ∆R² = .24, p < .001, in depression over and above social desirability. The Internalization and Detachment subscales were found to uniquely and significantly predict depression. The five CDS subscales added a significant 17% of incremental variance in predicting life satisfaction, ∆F(5, 194) = 8.19, ∆R² = .17, p < .001, over and above social desirability. The subscales of

**Table 7**

Intercorrelations Among Measured Variables at Time 2 and Test–Retest Reliability

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
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<td>Education</td>
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<tr>
<td>Detachment</td>
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<td>.33*</td>
<td>.23</td>
<td>.09</td>
<td>.73</td>
</tr>
<tr>
<td>M</td>
<td>3.29</td>
<td>2.32</td>
<td>1.32</td>
<td>2.69</td>
<td>2.18</td>
</tr>
<tr>
<td>SD</td>
<td>1.17</td>
<td>1.14</td>
<td>0.64</td>
<td>0.98</td>
<td>0.74</td>
</tr>
</tbody>
</table>

α (Time 2) [95% CI] .91 [.87, .94] .91 [.86, .94] .64 [.46, .77] .80 [.71, .88] .63 [.45, .77]

* p < .05.
Education/Advocacy, Internalization, Resistance, and Detachment uniquely and significantly predicted life satisfaction. Similarly, the five CDS subscales accounted for an additional 19% of the variance in self-esteem, $\Delta F(5, 194) = 9.87, \Delta R^2 = .19, p < .001$, over and above social desirability. Once again, Education/Advocacy, Internalization, and Detachment uniquely and significantly predicted self-esteem. Finally, the five CDS subscales added a significant 11% to the explained variance in ethnic identity, $\Delta F(5, 194) = 4.71, \Delta R^2 = .11, p < .001$, over and above social desirability. The Education/Advocacy subscale was unique in predicting ethnic identity. These results suggest that social desirability does not account for the association of scores on the CDS with these dependent outcome variables. Therefore, social desirability is not a third variable that is responsible for the associations between the CDS and the outcome variables.

### General Discussion

Four studies were conducted to examine the factor structure, reliability, and validity of the CDS. An exploratory factor analysis in Study 1 provided evidence for a five-factor oblique model underlying the 25 items that were included in the scale. Confirmatory factor analyses in Study 2 replicated these results, indicating that a five-factor oblique model that also included two method factors reflecting the direction of item wording provided a good fit to the data.

Findings across studies suggested that the psychometric properties of the 25-item CDS are adequate for research purposes, with the measure found to have good internal consistency reliability and 2-week test–retest reliability. Regarding validity, Education/Advocacy had a moderate positive association with ethnic identity. Internalization, Drug and Alcohol Use, and Detachment had small to moderate positive associations with depression. Internalization had moderate negative associations with life satisfaction and self-esteem. These results provide support for the construct validity of the CDS. Also, many of the associations between scores on these five subscales and the four outcome variables (i.e., depression, life satisfaction, self-esteem, and ethnic identity) appeared to be similar across three ethnic/racial groups and for both males and females. Our results indicated that the construct validity of the CDS is similar across ethnic/racial groups and males and females.

Moreover, Education/Advocacy, Internalization, Drug and Alcohol Use, and Detachment from the CDS had moderate positive associations with Active Coping, Self-Blame, Substance Use, and Behavioral Disengagement from the Brief COPE, respectively, providing additional support for the validity of the CDS. Furthermore, the CDS predicted an additional 5% to 6% of the variance in each of the four outcome variables over and above the influence of the general coping strategies assessed by the Brief COPE on these outcome measures. These results provide evidence for the incremental validity and the uniqueness of the CDS.

Results demonstrated that social desirability did not explain more than 2% of variance for the subscales of the CDS except for the Alcohol and Drug Use and Resistance subscales. This may imply that participants wishing to make a good impression may be less likely to report the use of alcohol and drugs or resistance as

### Table 8

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
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<tbody>
<tr>
<td>Education/Advocacy</td>
<td>0.48</td>
<td>0.01</td>
<td>0.09</td>
<td>-0.28</td>
<td>-0.07</td>
<td>0.32</td>
<td>0.17</td>
<td>0.08</td>
<td>0.04</td>
<td>-0.03</td>
<td>-0.01</td>
<td>0.03</td>
<td>0.14</td>
<td>0.28</td>
</tr>
<tr>
<td>Internalization</td>
<td>-0.39</td>
<td>-0.34</td>
<td>-0.30</td>
<td>0.14</td>
<td>0.23</td>
<td>-0.04</td>
<td>-0.06</td>
<td>-0.17</td>
<td>0.04</td>
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<td>0.05</td>
<td>-0.15</td>
<td>-0.24</td>
<td>-0.12</td>
</tr>
<tr>
<td>Alcohol and Drug Use</td>
<td>0.01</td>
<td>-0.08</td>
<td>0.04</td>
<td>-0.04</td>
<td>-0.01</td>
<td>0.02</td>
<td>0.02</td>
<td>-0.03</td>
<td>0.01</td>
<td>0.03</td>
<td>0.02</td>
<td>-0.18</td>
<td>-0.03</td>
<td>-0.09</td>
</tr>
<tr>
<td>Resistance</td>
<td>-0.28</td>
<td>0.04</td>
<td>0.20</td>
<td>-0.23</td>
<td>-0.17</td>
<td>0.10</td>
<td>0.06</td>
<td>-0.17</td>
<td>0.09</td>
<td>-0.14</td>
<td>-0.06</td>
<td>0.08</td>
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<td>0.03</td>
</tr>
<tr>
<td>Active Coping</td>
<td>0.32</td>
<td>0.44</td>
<td>0.11</td>
<td>0.28</td>
<td>0.36</td>
<td>0.23</td>
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<td>0.12</td>
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<td>0.01</td>
<td>0.09</td>
<td>-0.09</td>
<td>0.09</td>
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<tr>
<td>Self-Blame</td>
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<td>0.21</td>
<td>0.24</td>
<td>0.19</td>
<td>0.20</td>
<td>0.05</td>
<td>0.15</td>
<td>0.14</td>
<td>0.20</td>
<td>0.29</td>
<td>0.01</td>
<td>0.09</td>
<td>0.25</td>
<td>0.21</td>
</tr>
<tr>
<td>Substance Use</td>
<td>0.10</td>
<td>0.21</td>
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<td>0.20</td>
<td>0.05</td>
<td>0.15</td>
<td>0.14</td>
<td>0.20</td>
<td>0.29</td>
<td>0.01</td>
<td>0.09</td>
<td>0.25</td>
<td>0.21</td>
</tr>
<tr>
<td>Detachment</td>
<td>-0.02</td>
<td>0.01</td>
<td>-0.03</td>
<td>0.01</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
<td>0.01</td>
<td>0.03</td>
<td>0.02</td>
<td>0.01</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Behavioral Disengagement</td>
<td>-0.03</td>
<td>0.02</td>
<td>0.03</td>
<td>0.01</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
<td>0.01</td>
<td>0.03</td>
<td>0.02</td>
<td>0.01</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Life Satisfaction</td>
<td>0.06</td>
<td>0.35</td>
<td>0.36</td>
<td>0.25</td>
<td>0.36</td>
<td>0.25</td>
<td>0.18</td>
<td>0.18</td>
<td>0.11</td>
<td>0.20</td>
<td>0.11</td>
<td>0.16</td>
<td>0.23</td>
<td>0.15</td>
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<tr>
<td>Self-Esteem</td>
<td>-0.06</td>
<td>0.26</td>
<td>0.27</td>
<td>0.20</td>
<td>0.30</td>
<td>0.18</td>
<td>0.15</td>
<td>0.13</td>
<td>0.17</td>
<td>0.15</td>
<td>0.15</td>
<td>0.17</td>
<td>0.17</td>
<td>0.14</td>
</tr>
<tr>
<td>Social Desirability</td>
<td>-0.06</td>
<td>0.26</td>
<td>0.27</td>
<td>0.20</td>
<td>0.30</td>
<td>0.18</td>
<td>0.15</td>
<td>0.13</td>
<td>0.17</td>
<td>0.15</td>
<td>0.15</td>
<td>0.17</td>
<td>0.17</td>
<td>0.14</td>
</tr>
<tr>
<td>SD</td>
<td>0.16</td>
<td>0.24</td>
<td>0.24</td>
<td>0.23</td>
<td>0.25</td>
<td>0.19</td>
<td>0.18</td>
<td>0.19</td>
<td>0.19</td>
<td>0.21</td>
<td>0.20</td>
<td>0.21</td>
<td>0.21</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Note: $N = 220$. CI = confidence intervals for alpha. 
$^{**} p < .01$, $^{*} p < .001$. 

2 These results can be obtained from Meifen Wei upon request.
coping strategies. However, on the basis of Hoyt et al.’s (2006) suggestion, we used statistical-control strategies to partial out the influence of social desirability. The results indicated that the CDS explained an additional 11% to 24% of the variance in each of the four outcome variables over and above social desirability. Therefore, social desirability cannot account for the associations between the CDS and the outcome variables.

The development of the CDS has the potential to advance the literature by providing scholars with a psychometrically sound instrument for assessing how individuals cope with discrimination. Indeed, the availability of such an instrument may serve as a catalyst for conducting more research in an intuitively critical area. For instance, it is striking to note that there have been very few published studies on the topic of Asian Americans, racial discrimination, and coping—all of which have used adaptations of general coping measures. Consequently, the creation of a measure specific to discrimination may encourage future researchers in this area to employ this scale rather than relying on general coping measures adapted to assess discrimination as a stressor. A variety of general coping measures (e.g., COPE, Coping Strategies Inventory, etc.) have been adapted to examine responses to discrimination. The development of a coping instrument specific to discrimination may lend methodological rigor to studies on coping and thereby clarify how coping influences the experience of discrimination.

Finally, as a stress-specific measure that is uniquely designed for racial discrimination, the scale is consistent with Lazarus and Folkman’s (1984) call for specificity as well as the emerging trends in the coping literature. As such, the CDS will advance the field by enabling researchers to examine the extent to which individuals utilize coping strategies that are unique to racial discrimination. For instance, when using existing measures of coping, researchers have no means of assessing the frequency and efficacy of Education/Advocacy coping strategies, which obscures a key aspect of how individuals deal with discrimination (Miller & Kaiser, 2001). Although one could argue that Education/Advocacy coping may be captured by existing measures that assess active coping, it is also clear that educating oneself and advocacy at a societal level are distinct forms of active coping that merit direct investigation. In short, the specificity of the CDS provides more precision in examining how individuals cope with discrimination.

In summary, the final 25-item version of the CDS appears to have sound psychometric properties in terms of factor structure, reliability, and validity. It is also important to note that the validity of the CDS appears to be similar across three racial/ethnic groups as well as between males and females, but additional large-sample studies will be needed to confirm this claim.

Limitations

Although the CDS appears to provide the aforementioned contributions to the literature, there are several limitations regarding the development of this scale that should be noted. The present findings indicate that the 25-item CDS is an adequate measure in terms of psychometric characteristics. Researchers should note, however, that participants in our studies were college students from Midwestern and West coast universities. Thus, it is not known if the psychometric properties of this scale would be similar for students residing in other regions of the country or the world. Indeed, the use of students across all studies is an inherent limitation of the scale’s external validity. It is conceivable that the psychometric properties of the CDS might differ for those who are older than the current sample or those with a different educational background. Also, although we successfully recruited Asian Americans, African Americans, Latino/a Americans, and multiracial Americans, only a few Native Americans were included in our sample. In addition, the CDS may not assess all the ways that minority group members deal with discrimination (e.g., culture or religious specific coping). We hope that researchers will continue to work in this area and that our limitations will help guide that work.

In short, we did not assess the reliability or validity of the CDS with community residents of different ages or economic or educational backgrounds, or with younger populations, such as middle school or high school students. Therefore, caution is needed in generalizing results using the CDS until future research can establish the reliability and validity of the CDS for these populations.

### Table 9

**Summary of Hierarchical Multiple Regression for Incremental Validity**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Depression</th>
<th>Life satisfaction</th>
<th>Self-esteem</th>
<th>Ethnic identity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>β</td>
<td>ΔR²</td>
<td>B</td>
</tr>
<tr>
<td>Active Coping</td>
<td>-02</td>
<td>-03</td>
<td>.28***</td>
<td>.27</td>
</tr>
<tr>
<td>Self-Blame</td>
<td>.23</td>
<td>.32***</td>
<td>.28***</td>
<td>-.50</td>
</tr>
<tr>
<td>Substance Use</td>
<td>.29</td>
<td>.18**</td>
<td>.18**</td>
<td>-.23</td>
</tr>
<tr>
<td>Behavioral Disengagement</td>
<td>.22</td>
<td>.24***</td>
<td>.24***</td>
<td>-.46</td>
</tr>
<tr>
<td>Education/Advocacy</td>
<td>.00</td>
<td>.01</td>
<td>.05*</td>
<td>.12</td>
</tr>
<tr>
<td>Internalization</td>
<td>.03</td>
<td>.06</td>
<td></td>
<td>-.18</td>
</tr>
<tr>
<td>Drug and Alcohol Use</td>
<td>-.01</td>
<td>-.01</td>
<td></td>
<td>-.02</td>
</tr>
<tr>
<td>Resistance</td>
<td>.03</td>
<td>.07</td>
<td></td>
<td>-.22</td>
</tr>
<tr>
<td>Detachment</td>
<td>.12</td>
<td>.23**</td>
<td></td>
<td>-.18</td>
</tr>
<tr>
<td>Total R²</td>
<td>.33***</td>
<td></td>
<td>.26***</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** N = 220.

*p < .05.  **p < .01.  ***p < .001.
Nevertheless, since the CDS was validated across different racial samples, it may serve as a stimulus for more research across various communities of different racial groups.

Moreover, it should be noted that students self-selected to participate in these studies after being told that this project involved the development of a coping with discrimination scale. This self-selection may have led to biases in the sample (e.g., a greater interest and concern about issues related to discrimination). Also, in Studies 1, 2, and 4, participants were guaranteed anonymity concerning their responses on the measure. However, although confidentiality was ensured in Study 3, respondents were not anonymous due to the collection of data over time. The reliabilities of the Drug and Alcohol Use (α = .64, 95% CI [.46, .77]) and Detachment subscales (α = .63, 95% CI [.45, .77]) at Time 2 may have been lower in Study 3 due to the lack of anonymity.

**Future Research Directions**

The primary goal of this research was to develop a reliable and valid coping with discrimination scale. This new scale will enable researchers to use a measure with adequate reliability and construct validity to examine how minority individuals cope with discrimination. As we addressed earlier, the existing research on coping with discrimination has tended to use general coping measures and change the referent stressor to racial discrimination. This newly developed instrument (i.e., the CDS) with good psychometric properties will enable researchers to more precisely analyze the role of coping with discrimination strategies. For example, future studies can examine whether the CDS predicts other mental health outcomes (e.g., somatic complaints, anxiety, positive affect, negative affect), whether the CDS can predict changes in mental health outcomes over time, or whether the CDS can serve as a moderator or mediator between discrimination experiences and mental health outcomes over and above the influence of general coping strategies. These results will extend the findings of current studies by potentially providing predictive evidence of the CDS for mental health outcomes. Moreover, Bonett (2008, in press) described new methods for future researchers to assess differential validity and reliability. These future studies may lead to changes in the items and the number of subscales. Also, the original items related to the Resilience dimension did not yield a sound Resilience subscale. Future studies may need to continue to revise the CDS to be more inclusive and useful.

Although we have made efforts to examine the construct validity and incremental validity of the CDS, the methods relied solely on self-report from participants. Future studies can evaluate whether or not scores on dimensions of the CDS are related to actual coping behavior. For example, are individuals who receive high scores on the Education/Advocacy dimension more likely to engage in behaviors related to advocacy against discrimination? Future studies also can further establish the convergent and discriminant validity of the CDS through a multitrait–multimethod matrix analysis. Based on Campbell and Fiske (1959), convergent validity is established when different methods (e.g., a participant’s self-report and informant report from best friends) of measuring the same trait are significantly related (i.e., monotrait–heteromethod). Therefore, future studies can assess convergent validity by examining whether self-reports on each of the five CDS subscales are significantly and positively related with informant reports on each of the corresponding subscales. Conversely, discriminant validity is established if there are higher correlations among different methods (e.g., self- and informant reports) of assessing the same traits as compared with those measuring different traits (either heterotrait–monomethod or heterotrait–heteromethod). Campbell and Fiske indicated that a stringent test of discriminant validity is a comparison between monotrait–heteromethod correlations (i.e., self-report and informant report for the same trait) and correlations with other traits measured by the same method (i.e., heterotrait–monomethod). The rationale is that assessments of the same traits by different methods should be more similar than assessments of different traits by the same method. Thus, discriminant validity can be assessed and supported in future studies if correlations between self- and informant reports for the CDS subscales (i.e., monomethod–heteromethod) are stronger than correlations between self-report for the CDS subscales and vocational identity (i.e., heterotrait–monomethod).

Moreover, from our interviews and clinical experiences in working with minority individuals, we have found that people in different stages of racial identity development (Sue & Sue, 2003) may use different strategies to cope with racial discrimination. For example, in earlier stages of racial identity development, minority individuals may be more likely to wonder whether they did something to offend others (i.e., Internalization) or may have no idea concerning what to do (i.e., Detachment) in situations of discrimination. However, in later stages of racial identity development, minority individuals may be more likely to directly challenge the person who offended them (i.e., Resistance) and help people to be better prepared to deal with discrimination or join others to stop discrimination at the societal level (i.e., Education/Advocacy). Therefore, future studies can explore whether using different strategies for coping with discrimination depends on levels of racial identity. Finally, the CDS is focused on how racial minority groups cope with racial discrimination. Future studies can test how this scale will perform in the context of other types of discrimination, such as discrimination based on sexual orientation or religion.

**References**


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