Online Racial Discrimination and the Protective Function of Ethnic Identity and Self-Esteem for African American Adolescents

Brendesha M. Tynes
University of Southern California

Adriana J. Umaña-Taylor
Arizona State University

Chad A. Rose
Sam Houston State University

Johnny Lin
University of California, Los Angeles

Carolyn J. Anderson
University of Illinois at Urbana-Champaign

A growing body of literature has shown that being victimized online is associated with poor mental health. Little is known about the factors that protect youth from the negative outcomes that may result from these victimization experiences, particularly those related to race. Using a risk and resilience framework, this study examined the protective function of ethnic identity and self-esteem among African Americans who experience online racial discrimination. For the sample of 125 adolescents, hierarchical regression results revealed that higher levels of ethnic identity and self-esteem significantly moderated the negative impact of online racial discrimination on anxiety levels. These findings show that ethnic identity and self-esteem can buffer the negative mental health outcomes associated with online racial discrimination, at least with respect to adolescents’ anxiety. Findings from the current study have significant implications for adolescent adjustment given the increased time youth spend doing online activities.

Keywords: Internet, protective factor, ethnic identity, self-esteem, online racial discrimination

Perceived racial discrimination is a daily stressor in the lives of youth, especially those who are members of minority groups in the United States (Brody et al., 2006; Fisher, Wallace, & Fenton, 2000). These experiences have been associated with psychological distress (Sellers, Caldwell, Schmeelk-Cone, & Zimmerman, 2003), decreased psychological well-being (Sellers, Copeland-Linder, Martin, & Lewis, 2006; Umaña-Taylor & Uddegraff, 2007), and declines in grades, academic curiosity, and persistence (Alfaro, Umaña-Taylor, Gonzales-Backen, Bámaca, & Zeiders, 2009; Neblett, Philip, Cogburn, & Sellers, 2006; Wong, Eccles, & Sameroff, 2003). Moreover, it appears that the impact of discrimination may be particularly deleterious for African American youth. Not only do they experience the steepest increases in discrimination across adolescence (Greene, Way, & Pahl, 2006), but as a result of racial bias, they also experience poorer mental health in the form of emotional problems when compared with their White counterparts (DuBois, Burk-Braxton, Swenson, Tevendale, & Hardesty, 2002). However, aspects of the self-concept, including racial–ethnic identity and self-esteem, can protect adolescents from these outcomes (Mossakowski, 2003; Shelton et al., 2005). These findings have been noted in education, peer, and community contexts; but given the increase in time that youth spend in online contexts (Rideout, Foehr, & Roberts, 2010), it is important to understand whether these protective factors hold for experiences in online contexts.

Research on discrimination and adolescent adjustment has given scant attention to the nature and health consequences of exposure to racial discrimination in online contexts. This situation has occurred despite the fact that Internet usage among youth has been increasing over the past decade, and as such, it has become an increasingly central element in the lives of children and adolescents (Rideout et al., 2010). Figures from 2006 indicate that 93% of adolescents in the United States are Internet users—up from 87% in 2004 and 73% in 2000 (Lenhart, Madden, Macgill, & Smith, 2007). Youth are also using the Internet more intensely, with an increase in the percentage reporting daily use from 42% in 2000 and 51% in 2004 to 61% in 2006. Although there have been reports of a persistent (albeit narrowing in some cases) digital
divide, in which Blacks are less likely than other ethnic groups to have access to computing or broadband technology (Attewell, 2001; Horrigan, 2009; Lenhart, Madden, & Hitlin, 2005), even African American youth who report not having Internet access in the home find ways to access it through alternative means such as in schools and in their communities (Watkins, 2010). Moreover, a recent reanalysis by Rideout, Lauricella, and Wartella (2011) of data from the Kaiser Family Foundation’s nationally representative study shows that African American (along with Asian and Latino) youth ages 8–18 consume an average of 13 hr of media per day. This is 4.5 hr more than that of their White counterparts (Rideout et al., 2011). This is also consistent with early reports that show that similar to their media use patterns with television (Roberts, 2000), African Americans with access to the Internet can spend an average of 5 hr per day surfing the web as compared with just less than 3 hr per day for the general population (Burns, 2005). Little is known about how this heavy media consumption impacts psychosocial development.

The literature on online victimization has tended to focus on risks associated with these online experiences (Mitchell, Finkelhor, & Wolak, 2001, 2007a, 2007b). By contrast, this study uses a risk and resilience theoretical framework (Rutter, 1987; Zimmerman & Arunkumar, 1994) to understand the links between African American adolescents’ online experiences and their mental health. This approach focuses on the strengths, both internal and external, individuals possess that help them to avoid negative trajectories typically associated with risks (Fergus & Zimmerman, 2005). Of the various models of resilience, this study specifically uses a protective factor model to determine whether two aspects of the self-concept (i.e., self-esteem and ethnic identity) moderate or reduce the negative effects of online racial discrimination, a form of online victimization, on adolescents’ psychological functioning (i.e., depressive symptoms and anxiety).

Examining racial discrimination has never been more critical than at this historical moment. Although the election of the nation’s first African American president has brought about claims of a postracial America, there has been a concomitant rise in hate activity since the campaign and election. The Federal Bureau of Investigation (2009) reported a spike in bias-motivated incidents in 2008, with 7,783 being committed. This was the highest number since 2001, including the highest number of crimes directed at African Americans. There has also been a rise in hate groups, topping 1,000 for the first time since they have been recorded by the Southern Poverty Law Center (Potok, 2011). In addition, according to the Simon Wiesenthal Center (2009), the numbers of extremist and hate sites rose from 6,000 to 10,000 from 2006 to 2009.

Not only do these online hate group members engage in what has been called online racial discrimination, but average Americans may be more likely to engage in discriminatory acts on the Internet, particularly when their identity is unknown (Glaser & Kahn, 2005). This is also the case in the absence of social controls such as a monitor, Tynes, Reynolds, and Greenfield (2004) found that 19% of 16 half-hour monitored teen chat transcripts included racist comments and 59% of the 22 unmonitored. In addition, the number of youth who reported they had made rude or nasty comments to someone online increased from 14% in 2000 to 28% in 2005 (Wolak, Mitchell, & Finkelhor, 2006), although it is unclear whether these comments were racially motivated. Glaser and Kahn (2005) also noted that although the Internet represents exemplary societal progress, Internet contexts, even prior to the election, often resemble pre–Civil Rights race relations in which prejudice is overtly expressed and discrimination practices are common.

Online racial discrimination involves denigrating or excluding an individual on the basis of race through the use of symbols, voice, video, images, text, and graphic representations. It occurs in social networking sites, chat rooms, discussion boards, through text messaging, web pages, online videos, music, and online games. For example, an African American female student from the prestigious Stuyvesant High School in New York was sent a video on Facebook in which White fellow students performed a 5 min 40 s rap calling her ni**er and ignorant (see http://www.youtube.com/watch?v=GSYMNhD_84c). Images and text also construct racial minorities as inferior and unintelligent, as criminals and, in many cases, animals (see Figure 1). Exposure may occur through inadvertent web searches. Although both online and offline experiences denigrate the victim, the perpetrator and victim often know one another in offline discrimination. In contrast, perceived online racial discrimination is often text based, anonymous (Glaser & Kahn, 2005; Kang, 2000), or pseudoanonymous where a user name is known but may not identify the true identity of the perpetrator. Further, online racial discrimination is often interpersonal but can also resemble offline discrimination and racism experienced by groups of color in its structural and pervasive nature (Bonilla-Silva, 1997).

Figure 1. Example of online racial discrimination through images. From “Celebrating Nigger History,” by Nomesane, 2010 (http://niggermania.com). Copyright 2010 by Tom Shelly. Reprinted with permission.
Relationship Between Adjustment and Perceived Racial Discrimination in Online and Offline Contexts

In both concurrent and prospective studies, discrimination has been established as a significant risk factor for individuals’ psychological adjustment. Researchers have found that discrimination is related to decreased psychological well-being, increased depressive symptoms, psychological distress, anxiety, and perceived stress for adolescents (Sellers et al., 2003, 2006; Umaña-Taylor & Updegraff, 2007). Brody et al. (2006) also showed that this begins in childhood and that discrimination is related to conduct problems and depressive symptoms into early adolescence. In addition, higher levels of discrimination distress in educational and peer contexts are related to lower self-esteem for mid- to late adolescents (Fisher et al., 2000). This research was conducted in the late 1990s, during the time that many adolescents were gaining access to the Internet. Since this time, there has been a growing need to understand the prevalence and impact of online racial discrimination, particularly given that the Internet is an additional context in which many teens may interact with racial others upward of 5–6 hr daily (Tynes, 2007).

In a study of online racial discrimination and psychological adjustment, Tynes, Giang, Williams, and Thompson (2008) found that 71% of African American youth experience vicarious online racial discrimination (or witness same-race peers being victimized) and 29% experience individual racial discrimination. Furthermore, findings indicated that adolescents’ experiences with online racial discrimination explained 47% of the variance in depressive symptoms. Higher levels of online racial discrimination were significantly related to higher levels of depression, after accounting for the variance explained by adolescents’ background characteristics (i.e., race, gender, and age), perceived stress, and experiences with offline discrimination. In this same study, online racial discrimination explained 20% of the variance in adolescents’ anxiety (Tynes, Giang, Williams, & Thompson, 2008). This previous work underscores the salience of discrimination experiences for the adjustment of African American youth and, importantly, the unique impact that online discrimination can have on youths’ mental health.

The Protective Function of Racial and Ethnic Identity

A risk and resilience framework suggests that individuals with certain strengths will either not be negatively affected by risk or be affected to a lesser degree than those who do not possess these strengths. Consistent with this framework, racial and ethnic identity has been noted to be protective for ethnic minority youth. Indeed, racial and ethnic identity is arguably one of the most protective assets for minority youth (Phinney, 2003). Although discrimination can have significant negative repercussions for adolescents’ adjustment, racial and ethnic identity can minimize the potentially negative impact of this stressor and help youth avoid internalizing negative stereotypes about their racial group (Mandara, Gaylor-Harden, Richards, & Ragsdale, 2009; Mcloyd, Cauce, Takeuchi, & Wilson, 2000; Spencer, 1995). Defining racial identity in terms of its centrality, and private or public regard (i.e., an individual’s own attitudes about what it means to be Black vs. others’ attitudes about Blacks), studies have shown that positive attitudes about an individual’s racial group are associated with better psychological functioning and minimize the negative impact of discrimination on depression and anxiety (Bynum, Best, Barnes, & Burton, 2008; Sellers et al., 2006).

Using other conceptualizations of ethnic identity, often defined as one’s sense of belonging to an ethnic group, researchers have also found that this construct is related to increased well-being and fewer mental health problems, particularly among those who have experienced discrimination. Moreover, a lack of belonging to one’s ethnic group is associated with being more likely to be at risk for negative adjustment (Yasui, Dorham, & Dishion, 2004). More specifically, an achieved ethnic identity or being connected to and having positive attitudes toward one’s group, like racial identity, can provide access to a repertoire of strategies for managing discriminatory experiences (McMahon & Watts, 2002; Shelton et al., 2005; Wong et al., 2003). In keeping with this prior theoretical and empirical work, we hypothesize that the negative association between African American youths’ experiences with online racial discrimination and their adjustment will be significantly weaker among youth who report higher levels of ethnic identity compared with their counterparts with relatively lower levels of ethnic identity.

Self-Esteem and Its Protective Function

Based on a risk and resilience framework, individuals’ concepts and feelings about themselves can play a role in their ability to negotiate risk (Rutter, 1987; Zimmerman, Ramirez-Valles, & Maton, 1999). Self-esteem, in particular, is argued to be protective against risks. One mechanism by which this takes place is that those with high self-esteem are likely to have control or mastery over their environment and are more likely to use adaptive coping strategies, such as engaging in instrumental efforts (e.g., searching for information that will help deal with the problem), to reduce or manage stress (Rector & Roger, 1996). In addition, once an individual encounters a potentially stressful event, self-esteem may influence whether the person sees the event as something positive and to be used for personal enrichment or as a negative threat. The degree of the threat can then trigger a psychological and physiological response that, if prolonged, can lead to illness (Rector & Roger, 1997). Those with high self-esteem, however, are better able than those with low self-esteem to detach and positively reframe events (Rector & Roger, 1996). This ultimately diminishes the stress–illness association. In line with these conceptual notions, and with our hypotheses regarding ethnic identity as a moderator, we hypothesize that self-esteem will moderate the negative association between online racial discrimination experiences and youth adjustment such that the association will be significantly weaker among those who report relatively higher versus lower self-esteem.

Interestingly, a number of studies have consistently found a positive association between ethnic identity and self-esteem (Carlson, Uppal, & Prosser, 2000; Phinney, Cantu, & Kurtz, 1997; see Umaña-Taylor, Diversi, & Fine, 2002). Moreover, African Americans have reported the highest levels of global self-esteem in samples including White and Latino youth (Carlson et al., 2000). As such, for African Americans, a positive sense of themselves

---

1 The terms racial and ethnic identity are used to reflect both literatures and the fact that they are sometimes used interchangeably.
ethnically and a strong sense of belonging to their ethnic group may be particularly important in promoting an overall positive sense of self. Existing research has provided strong evidence of a positive concurrent association between ethnic identity and self-esteem; however, we know relatively little about their unique contribution to adjustment outcomes, particularly among African American youth. The current study will contribute to this gap in the literature by examining the unique role ethnic identity and self-esteem play in African American youths’ psychological adjustment. Specifically, we will examine our hypotheses regarding ethnic identity as a moderator while controlling for self-esteem and, conversely, examine the moderating effects of self-esteem while controlling for ethnic identity.

The Present Study

This study uses a risk and resilience framework (Rutter, 1987; Zimmerman & Arunkumar, 1994) to examine the potentially protective role of aspects of the self-concept (i.e., ethnic identity and self-esteem) as related to online racial discrimination. This framework calls for a focus on the factors that minimize the negative effects of risk (Masten, Best, & Garmezy, 1990). Because ethnic identity is argued to provide youth with a unique set of strategies with which to deal with discrimination (e.g., Shelton et al., 2005), and because self-esteem is one of the most oft-cited predictors of resilience for youth (e.g., Masten & Coatsworth, 1998), we hypothesize that both will minimize the negative impact discrimination has on African American adolescents’ depressive symptoms and anxiety. Put differently, we expect that the association between online racial discrimination and youth adjustment will be significantly weaker among youth with relatively higher levels of self-esteem and ethnic identity. Importantly, in an effort to understand the unique contribution of self-esteem and ethnic identity on youths’ adjustment, we will examine whether the hypothesized protective function of self-esteem emerges after controlling for ethnic identity and, similarly, whether the protective function of ethnic identity emerges after controlling for self-esteem.

Finally, a number of studies have noted significant gender differences in the associations between discrimination and youth adjustment (e.g., Delgado, Updegraff, Roosa, & Umaña-Taylor, 2011). For instance, in a study of Latino adolescents, perceived discrimination was significantly associated with poorer academic outcomes among male adolescents, but not their female counterparts (Alfaro et al., 2009). Findings such as these have prompted scholars to question whether discrimination may be more consequential for boys than girls; as such, we examined potential moderation by gender in all analyses. All analyses controlled for adolescent age, given previous work that has noted considerable changes in ethnic identity processes during the course of adolescence (e.g., Umaña-Taylor, Gonzales-Backen, & Guimond, 2009). Although the ideal analytic approach would be to examine age as a moderator, we were unable to do so in the current study due to sample size limitations.

Method

Participants

Participants were 125 African American students between the ages of 14 and 19 years ($M = 16.1, SD = 1.09; 55% female) from three small urban high schools in the Midwest. The sample was drawn from a larger sample of 476 White, Latino, Asian, and multiracial youth. We focused on African Americans because the literature shows that people of color are acutely impacted by discriminatory experiences and because the sample of Latinos and Asians in the current study was too small for reliable analyses. A majority of youth reported that their mother’s highest level of education was high school (64.6%), whereas 25% reported college and 10.4% reported graduate school. Youths’ reports of fathers’ highest education level was 72.3% high school, 17% college, and 10.6% graduate school. Note that approximately half the current sample of African American adolescents was included in the African American sample used in Tynes, Giang, Williams, and Thompson (2008).

Schools were chosen for participation if they had a minimum of 25% African American population. Participating schools included a range from 26% to 50% African American student body. A majority of the sample (81%) came from School A, where the response rate was 50%, which is well above the 20% response rate found in web-based surveys sent via e-mail (Kaplowitz, Hadlock, & Levine, 2004). Schools B and C represented 13% and 6%, respectively, of the larger sample; Schools B and C had a response rate of 13% and 10%, respectively. The differing response rates may be attributed to principal and teacher buy-in to the study. We have noted in our recruitment and data collection that principals and teachers place more value on research projects they feel directly relate to the curriculum. The same procedures were followed for each of the schools.

Procedure

Researchers introduced the study at high school faculty meetings and provided teachers a script to read verbatim and fliers to hand out to their students. Homeroom teachers were instructed to read the script aloud while students read the flier on their own. Teachers instructed students to complete the voluntary surveys online, on their own, and without consultation from peers. Fliers included a website address for the study and instructions regarding how to log on.

SurveyMonkey.com was used as the online survey tool because of its simplicity and user-friendly interface. Students completed the surveys either on school computers during lunch time or after school. Incentives for participation consisted of being entered into a drawing to win an iPod and a $5 donation per student provided directly to the schools. The settings for the online survey were set to ensure that participants completed the survey only once. Online assent was obtained from participants prior to participation. Per approval from the institutional review board at the principal investigator’s institution, parental consent was waived. The institutional review board allowed research staff to waive parental consent because no personal identifying information was connected to student data. The decision to waive parental consent was made due to the concern that parental consent would dramatically decrease the response rate and the quality of the data because participants

\footnote{Parent education was reported for approximately 40% of the sample because this question was mistakenly omitted during data collection for the remainder of the sample.}
may be less likely to report victimization experiences for fear that their Internet access would be taken away from them by their parents. Participants were assured that they could discontinue the study at any time if they felt discomfort and that their participation was completely voluntary.

**Measures**

For all measures described below, composite scores were created across items to create mean scores, which were used in all analyses (see Table 1 for descriptive statistics).

**Online racial discrimination.** The four-item individual online racial discrimination subscale from the Online Victimization Scale (Tynes, Rose, & Williams, 2010) was used to assess online racial discrimination. Individual online racial discrimination refers to derogatory text, images, and symbols that directly target an individual because of his or her race. These experiences are related to but differ from vicarious experiences that target same- and cross-race peers. Items (e.g., “People have said mean or rude things about me because of my race or ethnic group online”) were coded on a 4-point Likert scale with response options ranging from never (0) to everyday (5). The measure is designed to be used on adolescents ages 11–18 in research, clinical, and educational settings (α = .87).

**Ethnic identity.** Phinney’s (1992) 12-item Multigroup Ethnic Identity Measure was used to assess participants’ level of ethnic identity, including self-identification, affirmation and belonging, and ethnic identity achievement. Items (e.g., “I have a strong sense of belonging to my own ethnic group”) were scored on a 4-point Likert scale with response options ranging from strongly disagree (1) to strongly agree (4). A composite score was created by averaging scores across all subscales, wherein higher scores indicated greater ethnic identity (α = .91). Reliability for the Multigroup Ethnic Identity Measure in a previous sample of African American high school students was .83 (Phinney et al., 1997).

**Depressive symptoms.** The Children’s Depression Inventory—Short Form (Kovacs, 1992) was used to assess depressive symptoms. This 10-item self-report measure assesses cognitive, affective, and behavioral signs of depression in school-age children and adolescents ages 7–17. Each item is composed of three choices, with each given a score ranging from I am never sad (1) to I am sad all the time (3); respondents are instructed to think about their feelings over the past 2 weeks (α = .83). In previous studies of African American adolescents, this measure exhibited good internal consistency with an alpha of .88 (Janicke et al., 2007).

**Anxiety.** The Profile of Mood States—Adolescents (Terry, Lane, Lane, & Keohane, 1999) is a shortened version of the Profile of Mood States and assesses six mood states of adolescents: anger, confusion, depression, fatigue, tension, and vigor. To assess anxiety in the current study, we used four items from the Tension-Anxiety subscale. Each item (e.g., anxious) is rated on a 5-point Likert scale ranging from not at all (0) to extremely (4; α = .68). Previous studies have yielded an alpha of .79 (Nguyen-Rodriguez, Unger, & Spruijt-Metz, 2009).

**Self-esteem.** The Rosenberg Self-Esteem Scale (Rosenberg, 1965) is a 10-item measure used to assess global self-esteem. Items (e.g., “I feel that I am a person of worth, at least on an equal plane with others”) are scored on a 4-point Likert scale with response options ranging from strongly agree (1) to strongly disagree (4; α = .84). This measure has been used in numerous studies of African American youth with an alpha of .80 and above (Carlson et al., 2000; Phinney et al., 1997).

**Analytic Approach**

The moderating effect of self-esteem and ethnic identity on the relation between online racial discrimination and both depressive symptoms and anxiety across male and female adolescents was investigated through a series of hierarchical regression models. Using SPSS 19.0, we tested four regression models with ethnic identity and self-esteem serving as moderators across depressive symptoms and anxiety. Specifically, Models 1 and 2 examined the predictive nature of ethnic identity, online racial discrimination, and gender on depressive symptoms (Model 1) and anxiety (Model 2), while controlling for self-esteem and age. Models 3 and 4 tested the predictive nature of self-esteem, online racial discrimination, and gender on depressive symptoms (Model 3) and anxiety (Model 4), while controlling for ethnic identity and age. At Stage 1 of each hierarchical regression model, moderating effects were tested by identifying self-esteem (Models 1 and 2) and ethnic identity (Models 3 and 4) as covariates and controlling for these variables at each subsequent stage.

In addition to single-level predictors, interaction terms for the predictor variables were created and examined. First, all variables, with the exception of gender, were mean centered prior to constructing the interaction term. Two-way (i.e., ethnic identity by online racial discrimination, ethnic identity by gender, and online racial discrimination by gender for Models 1 and 2; self-esteem by online racial discrimination, self-esteem by gender, and online racial discrimination by gender for Models 3 and 4) and three-way (i.e., ethnic identity by online racial discrimination by gender for Models 1 and 2; self-esteem by online racial discrimination by gender for Models 3 and 4) interactions were examined for each of the four models. Follow-up analyses involved probing and graphing significant interactions at ± 1 standard deviation of the moderator and testing the significance of simple slopes (Aiken & West, 1991). For analytic purposes, gender was coded as 1 (male) and 2 (female).

**Results**

**Descriptive Statistics**

The maximum self-reported score across the four items from the Online Victimization Scale was taken as an indicator of the frequency of individual online racial discrimination. With this approach, 68.0% of adolescents in the current sample had never experienced online racial discrimination, 12.8% had experienced some form of online racial discrimination once in their lives, 8.8% had experienced it a few times a year, 4.8% had experienced it a few times a month, 3.2% had experienced it a few times a week, and 1.6% had experienced some form of online racial discrimination every day. To examine the mean-level differences between boys and girls, we calculated analyses of variance with gender as the independent variable and online racial discrimination, ethnic identity, self-esteem, depressive symptoms, and anxiety as dependent variables. No significant differences emerged between male
and female adolescents on online racial discrimination, $F(1, 112) = 0.03, p > .05$; ethnic identity, $F(1, 111) = 0.49, p > .05$; and self-esteem, $F(1, 113) = 0.00, p > .05$. However, girls reported significantly higher depressive symptoms ($M = 1.44$), $F(1, 113) = 10.07, p < .01$, and levels of anxiety ($M = 0.85$), $F(1, 111) = 6.89, p = .01$, when compared with boys ($M = 1.21$ and 0.43, respectively).

An examination of correlations between study variables suggested differential patterns of associations for boys and girls (see Table 1). For girls, ethnic identity was positively associated with self-esteem ($r = .49, p < .01$) and negatively associated with online racial discrimination ($r = -.30, p < .05$), depressive symptoms ($r = -.40, p < .05$), and anxiety ($r = -.26, p < .05$). As girls reported more online racial discrimination, more depressive symptoms, and greater anxiety, they reported lower ethnic identity. Self-esteem was negatively associated with online racial discrimination ($r = -.29, p < .05$) and depressive symptoms ($r = -.62, p < .01$), such that girls reporting greater depressive symptoms and online racial discrimination reported lower self-esteem. Online racial discrimination was positively associated with depressive symptoms ($r = .52, p < .01$) and anxiety ($r = .38, p < .01$), indicating that girls reporting higher online racial discrimination also reported greater depressive symptoms and anxiety. Finally, among girls, depressive symptoms were positively associated with anxiety ($r = .40, p < .01$). In contrast to the number of significant associations that emerged for girls, for boys, only three significant bivariate associations emerged: Anxiety was positively associated with depressive symptoms ($r = .49, p < .01$) and online racial discrimination ($r = .63, p < .01$) and negatively associated with self-esteem ($r = -.36, p < .01$) for boys. Thus, as boys reported more depressive symptoms, more online racial discrimination, and lower self-esteem, they tended to report higher levels of anxiety.

Using Fisher’s $r$ to $z$ transformation, we examined significant correlations to determine differences between boys and girls. Significant gender difference associations included self-esteem and ethnic identity ($z = 2.45, p < .01$), depressive symptoms and ethnic identity ($z = -3.01, p < .01$), self-esteem and depressive symptoms ($z = -2.33, p < .05$), and depressive symptoms and online racial discrimination ($z = 2.31, p < .05$). Consequently, online racial discrimination was related to higher anxiety levels for both boys and girls, but only girls exhibited a positive relation between online racial discrimination and depressive symptoms, and only boys exhibited a negative association between self-esteem and anxiety.

**Assessing the Moderating Role of Ethnic Identity on Online Racial Discrimination and Adolescents’ Psychological Functioning**

Two hierarchical regression models were conducted to examine the unique moderating role of ethnic identity on the association between (a) online racial discrimination and depressive symptoms and (b) online racial discrimination and anxiety, after controlling for the effect of self-esteem and age. The purpose of these analyses was to examine whether ethnic identity would significantly moderate each association beyond the effects of self-esteem, and to determine whether the strength of the association was invariant between boys and girls. For each model, Step 1 included the control variables (i.e., age, self-esteem), Step 2 examined the main effects (i.e., ethnic identity, online racial discrimination, gender), Step 3 added three two-way interactions (ethnic identity by gender, ethnic identity by online racial discrimination, online racial discrimination by gender), and Step 4 added a three-way interaction (ethnic identity by online racial discrimination by gender).

**Depressive symptoms.** The first model examined the moderating role of ethnic identity on online racial discrimination as a predictor of depressive symptoms, while accounting for self-esteem and age. The final significant step in the model, based on significant changes in the $F$ statistic ($p < .05$), accounted for 42% of the variance in depressive symptoms and demonstrated main effects for gender, above and beyond the effects of self-esteem and age (see Table 2). These findings suggested that boys reported significantly lower levels of depressive symptoms ($M = 1.21$) than girls ($M = 1.44$). It should be noted, however, that self-esteem also served as a significant predictor of depressive symptoms, where students who reported higher levels of self-esteem also reported significantly lower levels of depressive symptoms.

In addition to the main effects, a two-way interaction between online racial discrimination and gender was found to be a significant predictor of depressive symptoms. The significant interaction was probed and graphed based on male versus female responses, and the simple slopes were evaluated by gender (see Figure 2). Simple slopes analyses for both boys, $t(123) = -0.78, p > .05$, and girls, $t(123) = 1.61, p > .05$, revealed nonsignificant slopes.

### Table 1

**Correlations, Means, and Standard Deviations by Gender**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Boys</th>
<th>Girls</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>16.00 (51)</td>
<td>16.20 (63)</td>
<td>1.00</td>
<td></td>
<td>.01</td>
<td>.06</td>
<td></td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Ethnic identity</td>
<td>3.10 (51)</td>
<td>3.00 (62)</td>
<td>0.60</td>
<td></td>
<td>.08</td>
<td>.08</td>
<td></td>
<td>.14</td>
<td></td>
<td>.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Self-esteem</td>
<td>3.00 (52)</td>
<td>3.00 (63)</td>
<td>0.69</td>
<td></td>
<td>.08</td>
<td>.08</td>
<td></td>
<td>.14</td>
<td></td>
<td>.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Online racial</td>
<td>0.72 (52)</td>
<td>0.61 (62)</td>
<td>0.89</td>
<td></td>
<td>.09</td>
<td>.09</td>
<td></td>
<td>.14</td>
<td></td>
<td>.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Depressive symptoms</td>
<td>1.21 (52)</td>
<td>1.44 (63)</td>
<td>0.29</td>
<td></td>
<td>.01</td>
<td>.01</td>
<td></td>
<td>.14</td>
<td></td>
<td>.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Anxiety</td>
<td>0.43 (50)</td>
<td>0.85 (63)</td>
<td>0.81</td>
<td></td>
<td>.05</td>
<td>.05</td>
<td></td>
<td>.14</td>
<td></td>
<td>.21</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. Boys presented above the diagonal; girls presented below the diagonal. Raw scores (nontransformed) were used to calculate values. Sample size presented in parentheses varies based on number of respondents.*
indicating that although the linear association between online racial discrimination and depressive symptoms was significantly different for boys and girls, the strength of the association was not significant. Therefore, interpretations of the directionality of effect for gender cannot be made. No other interactions emerged as significant, and specifically, our hypothesis that ethnic identity would moderate the association between online discrimination and depressive symptoms, and that this association would be stronger for girls than boys, was not supported.

Anxiety. The second model examined the moderating role of ethnic identity on online racial discrimination as a predictor of anxiety, while accounting for self-esteem and age. The final significant step in the model (i.e., Step 3) accounted for 38% of the variance in anxiety and demonstrated main effects for gender, above and beyond the effects of self-esteem and age (see Table 2). These findings suggested that boys reported significantly lower levels of anxiety ($M = 0.43$) than girls ($M = 0.85$).

In addition to the main effect of gender, a two-way interaction between online racial discrimination and ethnic identity was found to be a significant predictor of anxiety. The significant interaction was probed and graphed based on ± 1 standard deviation of ethnic identity, and simple slopes were evaluated based on the interaction between high/low ethnic identity and high/low online racial discrimination (see Figure 3). The simple slope for the association between online racial discrimination and anxiety was not signifi-

![Figure 2](image2.png)

Figure 2. Depressive symptoms as a function of online racial discrimination for boys and girls while holding the moderating effects of self-esteem and age constant.

![Figure 3](image3.png)

Figure 3. Anxiety as a function of online racial discrimination and ethnic identity while holding the moderating effects of self-esteem and age constant.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Depressive symptoms</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$ ($SE$)</td>
<td>$\beta$</td>
</tr>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-0.01 (.03)</td>
<td>-0.02</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>-0.27 (.05)</td>
<td>-0.45**</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic identity</td>
<td>-0.01 (.05)</td>
<td>-0.01</td>
</tr>
<tr>
<td>Online racial discrimination</td>
<td>0.12 (.04)</td>
<td>0.24**</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.23 (.06)</td>
<td>-0.30**</td>
</tr>
<tr>
<td><strong>F(3, 108)</strong> change</td>
<td>13.31**</td>
<td>.20</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic Identity $\times$ Gender</td>
<td>0.13 (.10)</td>
<td>0.15</td>
</tr>
<tr>
<td>Ethnic Identity $\times$ Online Racial Discrimination</td>
<td>-0.08 (.05)</td>
<td>-0.20</td>
</tr>
<tr>
<td>Online Racial Discrimination $\times$ Gender</td>
<td>-0.16 (.08)</td>
<td>-0.21*</td>
</tr>
<tr>
<td><strong>F(3, 102)</strong> change</td>
<td>4.80*</td>
<td>.42</td>
</tr>
<tr>
<td><strong>Step 4</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic Identity $\times$ Online Racial Discrimination $\times$ Gender</td>
<td>0.08 (.12)</td>
<td>0.09</td>
</tr>
<tr>
<td><strong>F(1, 101)</strong> change</td>
<td>0.46</td>
<td>.42</td>
</tr>
</tbody>
</table>

Note. Male = 1, female = 0. All variables except gender were centered at the mean.

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

Table 2: Summary of Hierarchical Regression Predicting Depressive Symptoms and Anxiety From Ethnic Identity, Online Racial Discrimination, and Gender Controlling for Age and Self-Esteem
cant among individuals with high ethnic identity, $t(123) = -0.24, p > .05$, but it was positive and significant among individuals with low ethnic identity, $t(123) = 0.75, p < .01$. As hypothesized, after controlling for self-esteem and age, ethnic identity emerged as a significant protective factor, such that among individuals who reported higher levels of ethnic identity, the negative effects of online racial discrimination on anxiety were not evident, whereas higher levels of online racial discrimination were associated with increased anxiety among individuals with low ethnic identity. The three-way interaction tested in Step 4 (online racial discrimination by ethnic identity by gender) was not significant, indicating that the moderation effect of ethnic identity on the association between online racial discrimination and anxiety was consistent across boys and girls.

### Assessing the Moderating Role of Self-Esteem on Online Racial Discrimination and Adolescents’ Psychological Functioning

Two additional hierarchical regression models were conducted to examine the unique moderating role of self-esteem on the association between (a) online racial discrimination and depressive symptoms and (b) online racial discrimination and anxiety, after controlling for the effect of ethnic identity and age. The purpose of these analyses was to examine whether self-esteem would significantly moderate each association beyond the effects of ethnic identity, and to determine whether the strength of the association was invariant between boys and girls. For each model, Step 1 included the control variables (i.e., age, ethnic identity), Step 2 examined the main effects (i.e., self-esteem, online racial discrimination, gender), Step 3 added three two-way interactions (self-esteem by gender, self-esteem by online racial discrimination, online racial discrimination by gender), and Step 4 added a three-way interaction (self-esteem by online racial discrimination by gender).

### Depressive symptoms

The third model examined the moderating role of self-esteem on online racial discrimination as a predictor of depressive symptoms, while accounting for ethnic identity and age. The final significant step in the model (i.e., Step 3) accounted for $44\%$ of the variance in depressive symptoms and demonstrated main effects for self-esteem, online racial discrimination, and gender, above and beyond the effects of ethnic identity and age (see Table 3). These findings suggested that individuals who reported higher levels of self-esteem also reported significantly lower levels of depressive symptoms, and individuals who reported higher levels of online racial discrimination also reported significantly higher levels of depressive symptoms. These findings also suggested that boys reported significantly lower levels of depressive symptoms ($M = 1.21$) than girls ($M = 1.44$) when accounting for age and ethnic identity.

In addition to the three main effects, two two-way interactions were found to be significant. First, self-esteem interacted with gender to predict depressive symptoms. This significant interaction was probed and graphed based on male versus female responses, and the simple slopes were evaluated by gender (see Figure 4). The simple slope for boys’ depressive symptoms by self-esteem was not significant, $t(123) = -0.11, p > .05$, indicating that high or low levels of self-esteem did not impact levels of depressive symptoms for boys. However, the simple slope for girls, $t(123) = -0.415, p < .01$, was significant, demonstrating that as levels of self-esteem increased, levels of depressive symptoms decreased for girls, accounting for the effect of ethnic identity and age.

Similar to the interaction of self-esteem and gender, online racial discrimination interacted with gender to significantly predict depressive symptoms. As with the previous interaction, this sig-

### Summary of Hierarchical Regression Predicting Depressive Symptoms and Anxiety From Self-Esteem, Online Racial Discrimination, and Gender Controlling for Age and Ethnic Identity

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>Depressive symptoms</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Age</td>
<td>-$0.00 (0.03)$</td>
<td>-$0.28 (0.13)$</td>
</tr>
<tr>
<td></td>
<td>Ethnic identity</td>
<td>-$0.11 (0.06)$</td>
<td>0.08 (0.07)</td>
</tr>
<tr>
<td></td>
<td>$F(2, 109)$</td>
<td>1.92</td>
<td>0.03</td>
</tr>
<tr>
<td>Step 2</td>
<td>Self-esteem</td>
<td>-$0.24 (0.05)$</td>
<td>-$0.12 (0.12)$</td>
</tr>
<tr>
<td></td>
<td>Online racial discrimination</td>
<td>0.12 (0.04)</td>
<td>0.52 (0.09)</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>-$0.23 (0.06)$</td>
<td>-$0.42 (0.14)$</td>
</tr>
<tr>
<td></td>
<td>$F(3, 106)$ change</td>
<td>15.95**</td>
<td>0.34</td>
</tr>
<tr>
<td>Step 3</td>
<td>Self-Esteem $\times$ Gender</td>
<td>0.30 (0.09)</td>
<td>-$0.36 (0.22)$</td>
</tr>
<tr>
<td></td>
<td>Self-Esteem $\times$ Online Racial Discrimination</td>
<td>-$0.05 (0.08)$</td>
<td>-$0.39 (0.20)$</td>
</tr>
<tr>
<td></td>
<td>Online Racial Discrimination $\times$ Gender</td>
<td>-$0.18 (0.08)$</td>
<td>-$0.24$</td>
</tr>
<tr>
<td></td>
<td>$F(3, 103)$ change</td>
<td>6.76*</td>
<td>0.44</td>
</tr>
<tr>
<td>Step 4</td>
<td>Online Racial Discrimination $\times$ Gender $\times$ Self-Esteem</td>
<td>0.26 (0.15)</td>
<td>-$0.06 (0.37)$</td>
</tr>
<tr>
<td></td>
<td>$F(1, 102)$ change</td>
<td>2.98</td>
<td>0.46</td>
</tr>
</tbody>
</table>

*Note.* Male = 1, female = 0. All variables except gender were centered at the mean.

*p < .05.  **p < .01.
significant interaction was probed and graphed based on male versus female responses, and the simple slopes were evaluated by gender (see Figure 5). Once again, the simple slope for boys’ depressive symptoms by online racial discrimination was not significant, \( t(123) = -0.22, p > .05 \), indicating that high or low levels of online racial discrimination did not impact levels of depressive symptoms for boys. However, the simple slope for girls, \( t(123) = 2.61, p < .01 \), was significant, demonstrating that as levels of online racial discrimination increased, levels of depressive symptoms also increased for girls. A significant three-way interaction did not emerge, indicating that gender did not interact with self-esteem and online racial discrimination to predict depressive symptoms when accounting for ethnic identity and age.

### Anxiety

The final model examined the moderating role of self-esteem on online racial discrimination as a predictor of anxiety, while accounting for ethnic identity and age. The final significant step in the model (i.e., Step 3) accounted for 37% of the variance in anxiety and demonstrated main effects for gender, above and beyond the effects of ethnic identity and age (see Table 3). These findings suggested that boys reported significantly lower levels of anxiety \( (M = 0.43) \) than girls \( (M = 0.85) \).

In addition to a main effect for gender, a two-way interaction between online racial discrimination and self-esteem was found to be a significant predictor of anxiety. The significant interaction was probed and graphed based on ±1 standard deviation of self-esteem, and simple slopes were evaluated based on the interaction between high/low self-esteem and high/low online racial discrimination (see Figure 6). The simple slope for the association between online racial discrimination and anxiety was not significant among individuals with high self-esteem, \( t(123) = -0.38, p > .05 \), but the slope was positive and significant among individuals with low self-esteem, \( t(123) = 3.18, p < .01 \). This demonstrated that after accounting for the effect of ethnic identity, self-esteem emerged as a protective factor such that the negative effects of online racial discrimination on adolescents’ anxiety were not evident among individuals with high self-esteem, whereas among individuals with low self-esteem, high levels of online racial discrimination were associated with significantly higher levels of anxiety. The three-way interaction (online racial discrimination by ethnic identity by age) was not significant, indicating that gender did not further moderate this association and, thus, the protective benefits of self-esteem were similar across boys and girls.

### Discussion

The current study examined the potential protective function of self-esteem and ethnic identity on the association between African American adolescents’ experiences with online racial discrimination and their mental health. In support of our hypotheses, we found that the negative effects of online racial discrimination on African American adolescents’ anxiety were significantly minimized for those who reported higher ethnic identity and self-esteem. We did not find support for moderation by ethnic identity...
or self-esteem when examining the effects of online racial discrimination on depressive symptoms.

Our descriptive data indicated that a third of the current sample of African American adolescents had experienced some form of individual online racial discrimination (this number jumps to two thirds if vicarious experiences are included), with almost 20% of these youth reporting such experiences at least a few times per year. Many of adolescents’ developmental tasks are being transferred to online contexts (see Subrahmanyam, Greenfield, & Tynes, 2004; Tynes et al., 2004). This high frequency of exposure, coupled with previous findings linking online racial discrimination with youths’ depressive symptoms and anxiety (Tynes, Giang, Williams, & Thompson, 2008), confirms that these experiences are a significant developmental concern for youth of this age group.

Findings from the current study replicate this previous work, but contribute uniquely to the emerging literature on the mental health consequences of online victimization (Mitchell, Ybarra, & Finkelhor, 2007; Wang, Iannotti, Luk, & Nansel, 2010; Ybarra, 2004) by identifying self-esteem and ethnic identity as protective factors that buffer the negative impact of online experiences on African American adolescents’ mental health.

Ethnic Identity and Self-Esteem as Protective Resources for African American Youth

Consistent with a risk and resilience framework (Rutter, 1987), and with scholars’ suggestions that cultural resources can minimize the negative effects of risk factors on minority youths’ adjustment (García Coll, Akerman, & Cicchetti, 2000; Umaña-Taylor, Updegraff, & Gonzales-Backen, 2011), ethnic identity emerged as a significant protective factor by minimizing the strength of the positive association between online racial discrimination and African American adolescents’ levels of anxiety. Specifically, among adolescents with the relatively lowest levels of ethnic identity, greater experiences with online racial discrimination were associated with greater anxiety. Among adolescents with the highest levels of ethnic identity, however, the association between online racial discrimination experiences and adolescents’ anxiety was not significant. This finding was consistent across gender groups, suggesting that ethnic identity may be an adaptive aspect of culture that protects both male and female African American adolescents from the negative effects of stress. Existing work has found that adolescents at advanced stages of ethnic identity development report fewer symptoms of anxiety (Yasui et al., 2004). As previously noted, scholars suggest that individuals’ positive sense of themselves in terms of their ethnic group may create a frame of reference that prevents African American adolescents from internalizing messages of inferiority (Mandara et al., 2009; McLoyd et al., 2000; Sellers et al., 2006; Spencer, 1995). This frame of reference may allow them to deflect the messages and/or modulate the fear and anger that may lead to increased anxiety.

Interestingly, the same protective function emerged with self-esteem, such that the association between online racial discrimination and adolescents’ anxiety was not significant among youth with high self-esteem; however, among those with low self-esteem, experiences with online discrimination were associated with increased anxiety. Self-esteem has been noted to be especially beneficial in helping individuals negotiate risk and have better control over what happens to them (Rutter, 1987). Youth with high self-esteem may have more adaptive coping strategies and may be better able to detach and reframe events to their advantage (Rector & Roger, 1996). These conceptual notions are consistent with the current findings, in which high self-esteem protected African American youth from the negative effects of online discrimination on their anxiety. It is important to note that the moderating effects of self-esteem were consistent after controlling for ethnic identity, and vice versa. Thus, both ethnic identity and self-esteem appear to offer unique protection for African American adolescents’ mental health, in terms of anxiety.

In contrast to our findings regarding African American youths’ anxiety, ethnic identity and self-esteem did not emerge as protective factors in the association between online racial discrimination and African American adolescents’ depressive symptoms. This association was significantly moderated, however, by adolescent gender such that online racial discrimination was significantly associated with depressive symptoms among female African American adolescents, but not among boys. This may be due to the fact that girls are more susceptible to depressive symptoms both in the face of victimization and more broadly once they reach puberty (Cryanowski, Frank, Young, & Shear, 2000; Wang et al., 2010). Girls also reported more depressive symptoms in interpersonal contexts than boys (Hankin, Mermelstein, & Roesch, 2007). Although we did not find evidence that online racial discrimination predicted boys’ depressive symptoms, it does predict other indicators of mental health.

Limitations and Directions for Future Research

Although the current study focuses on a timely and relevant topic for African American youth, there are a number of limitations to consider that provide direction for future research. First, it is possible that lack of statistical power due to a small sample size contributed to the inability to detect the protective function of ethnic identity and self-esteem with respect to depressive symptoms. Moreover, although consistent with previous studies on this topic (e.g., Bynum et al., 2008), the small sample size of the current study limits the ability to broadly generalize our findings. Somewhat related, the sample was drawn from the Midwest and may not be representative of youth in eastern, western, or southern regions of the United States. Furthermore, it is important to note that these findings are particularly relevant to youth who have access to online resources and less relevant to youth who may not have any exposure to online activity. Nonetheless, the findings linking online racial discrimination, depression, and anxiety are consistent with existing research that has used samples from single regions (Sellers et al., 2006) as well as nationally representative studies of online victimization (Mitchell et al., 2001) and, importantly, point to the public health significance of this topic.

Another limitation to consider involves the cross-sectional nature of the current study, which limits the ability to discern the potential causal associations among self-esteem, ethnic identity, and depressive and anxiety symptoms. Future studies would benefit from a longitudinal design that would lend itself better to examining the long-term association between online racial discrimination and youths’ psychological functioning, as well as the mediating and/or moderating functions of self-esteem and ethnic identity over time. Examining whether ethnic identity and self-
estem are mediators of the associations between online racial discrimination and mental health will be an important question for future research, to refine our understanding of the processes by which ethnic identity and self-esteem offer protection in the face of adversity. With the rising numbers of hate groups and hate activity online, further research outlining the risk and protective factors for these experiences and ways to decrease online racial discrimination is needed. Finally, the current study focused on anxiety and depressive symptoms as indices of youth adjustment; because female adolescents tend to exhibit more internalizing behaviors in reaction to stress, whereas male adolescents tend to exhibit more externalizing behaviors (Kempton, Armistead, Wierson, & Forehand, 1991; Martinez & Semrud-Clikeman, 2004), it will be important for future studies to extend the current findings to indices of adjustment that capture youths’ externalizing behaviors.

Conclusion

This study is the first to explore whether aspects of the self-concept protect youth against experiences with racial discrimination in online contexts. Although research has consistently shown that online victimization is associated with depressive symptoms, behavior problems, self-esteem, and other indicators of adjustment, few researchers have used a risk and resiliency framework to understand what factors protect youth from these negative outcomes. Our findings suggest that, indeed, aspects of the self can protect youth from the negative effects of online racial discrimination. Self-esteem has been identified as a protective resource for youth in prior work, and our findings extend this notion to protection against negative experiences in online settings. Similarly, our findings suggest that ethnic identity is a cultural asset youth possess that can be used as a tool in online settings, and they highlight the need to help African American youth to develop a positive, strong ethnic identity. This study underscores the fact that race may be even more important now than ever. This is because youth are spending increasing amounts of time with media. Rather than pursuing a faceless America, understanding the history and contributions of their ethnic and racial groups may help youth develop a stronger ethnic identity, which our findings suggest may have protective effects and can help buffer against online racial discrimination.

References


Tynes, B. M. (2007). Role-taking in online “classrooms”: What adole-
cents are learning about race and ethnicity. *Developmental Psychology*, 43, 1312–1320. doi:10.1037/0012-1649.43.6.1312


Received September 28, 2010
Revision received December 8, 2011
Accepted December 12, 2011