THE ROLE OF PERCEPTIONS OF DISCRIMINATION IN THE RELATIONSHIP
BETWEEN SKIN TONE, SOCIOECONOMIC STATUS, AND ACADEMIC
OUTCOMES

By

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Abstract
THE ROLE OF PERCEPTIONS OF DISCRIMINATION IN THE RELATIONSHIP BETWEEN SKIN TONE, SOCIOECONOMIC STATUS, AND ACADEMIC OUTCOMES

Desiree Ryan

Lighter-skinned AAs complete more years of education, have jobs that are more prestigious, and earn higher incomes more often than darker-skinned AAs. People’s preferences and biases for lighter skin directly influence these life outcomes. Both AAs and non-AAs prefer lighter skin tones because they more closely resemble the skin tone of European Americans (EAs). As such, darker-skinned AAs report more experiences with discrimination than their lighter skinned racial group members.

In addition to skin tone, a person’s socioeconomic status (SES) is a marker for discrimination. While in college, low SES students report more experiences of discrimination based on their SES than their high SES peers. SES influences the academic trajectory of students, including persistence through undergraduate coursework and enrollment in graduate school.

For the current study, I used a sample of AA students \( n = 1,051 \) from the National Longitudinal Survey of Freshmen to examine the effects of skin tone, SES, and the combined effects of skin tone and SES on experiences of discrimination on campus. I then examined how experiences of discrimination, in turn, affect academic outcomes such as GPA, evaluation of college experiences, and graduate school enrollment plans.
Results show that skin tone is associated with perceptions of prejudice and academic anxiety, while SES is associated with GPA.
Table of Contents

Abstract ........................................................................................................................................................................................................... ii

List of Tables ........................................................................................................................................................................................................ vi

Introduction ............................................................................................................................................................................................................. 1

Literature Review........................................................................................................................................................................................................... 3

Skin Tone ................................................................................................................................................................................................................ 3

  Skin tone history. ........................................................................................................................................................................................................... 3
  Intergroup effects ......................................................................................................................................................................................................... 5
  Intragroup effects ......................................................................................................................................................................................................... 6
  Skin tone and academic outcomes. ........................................................................................................................................................................ 8
  Skin tone and perceptions of discrimination ................................................................................................................................................................ 9

Socioeconomic Status ........................................................................................................................................................................................................... 9

  SES and early education. ....................................................................................................................................................................................................... 10
  SES and college. ......................................................................................................................................................................................................... 11

Skin Tone and SES in Education ........................................................................................................................................................................ 11

Perceptions of Discrimination and Academic Outcomes .................................................................................................................................................................................. 12

  Skin tone. ............................................................................................................................................................................................................... 12
  SES .................................................................................................................................................................................................................... 13

The Current Study ............................................................................................................................................................................................................. 14

Hypotheses ................................................................................................................................................................................................................ 14

  Hypothesis 1 ........................................................................................................................................................................................................... 14
  Hypothesis 2 ........................................................................................................................................................................................................... 15
  Hypothesis 3 ........................................................................................................................................................................................................... 15
  Hypothesis 4 ........................................................................................................................................................................................................... 15

Method .................................................................................................................................................................................................................... 16

Participants .................................................................................................................................................................................................................. 16

Measures ................................................................................................................................................................................................................ 17
List of Tables

Table 1 .............................................................................................................................. 21
Table 2 .............................................................................................................................. 22
Table 3 .............................................................................................................................. 24
Table 4 .............................................................................................................................. 26
Introduction

African American (AA) students’ academic achievement is worse than European American (EA) students (Chavous et al., 2008; DeFreitas, 2012; Steele, 1997; Steele & Aronson, 1995). Though AA students consistently fall behind in the classroom, underlying causes remain unclear (Aronson, Fried, & Good, 2002). Commonly cited explanations include broken families, segregated and isolated communities, poor schools, and lack of economic opportunities (Steele, 2003).

AAs face disparities early in life. AAs and EAs start school with similar standardized test scores, but by the end of elementary school, AAs are two complete letter grades behind EA students. The achievement gap continues through college with 64% of EAs graduating with a 3.0 grade point average or higher but only 18% of African Americans attaining the same grades. Graduation rates also differ. Seventy percent of AA students who enter a four-year institution drop out compared to 45% of EAs. In addition, AAs are less likely to enroll in graduate or professional programs (DeFreitas, 2012; Steele, 2003).

Although AA students suffer poor academic outcomes, outcomes do vary in systematic manners. Within group variations such as hair texture, nose width, and skin tone impact outcomes among AAs. Both EAs and AAs hold preferences for certain physical traits in AAs (Coard, Breland, & Raskin, 2001; Maddox, 2004; Maddox & Gray, 2002). For example, EAs both explicitly and implicitly favor lighter-skinned AAs to darker-skinned AAs (Hagiwara, Kashy, & Cesario, 2012).

Discrimination toward darker-skinned AAs affects academics early on. For
example, school officials suspend darker-skinned female AAs more often than lighter-skinned female AAs (Hannon, DeFina, & Brunch, 2013). People evaluate darker-skinned AAs as less intelligent than lighter-skinned AAs. Teachers influence student achievement by providing more encouragement and opportunities to lighter-skinned AA students (Thompson & McDonald, 2016).

Socioeconomic status (SES) also limits academic success (Brooks-Gunn & Duncan, 1997). In higher education, lower-SES students work more often, study less, are less likely to participate in extracurricular activities, and receive lower grades than higher-SES students (Walpole, 2003). Lower-SES students also face discrimination based on their socioeconomic standing (Langhout, Rosselli, & Feinstein, 2007). Particularly, SES relates to feelings of distress, isolation, and marginalization in the university setting (Karp, 1986; Wentworth & Peterson, 2001).
Literature Review

In this literature review, I address skin tone variations, discrimination toward those with darker skin, and academic outcomes. Next, I review SES, discrimination toward lower SES students, and academic outcomes. Lastly, I review the combined effects of skin tone and SES and how the resulting discrimination mediates the relationship between skin tone and SES and academic outcomes.

Skin Tone

Within any ethnic or racial group, there exists considerable variation in appearance. For example, people commonly distinguish between AAs with lighter skin and those with darker skin. People view lighter skin as more desirable than darker skin (Kahn, Unzueta, Davies, Alston, & Lee, 2015; Maddox, 2004). People see those with lighter skin as more attractive, competent, and more likely to find a higher status partner (Bond & Cash, 1992; Breland, 1998; Neal & Wilson, 1989). Positive traits ascribed to lighter-skinned AAs likely occur because the skin tone is more closely comparable to EAs (Livingston & Brewer, 2002).

Skin tone history. Disparities between AAs based on skin tone date back to the Colonial Period in the U.S. Lighter-skinned AAs were commonly a product of slave owner rape or interracial unions between EA servants and AA slaves. Regardless of their light skin and mixed-race, legislators from states in the Upper South (from Pennsylvania to North Carolina) deemed any mixed-raced children as slaves. Legislators banned
interracial marriages and relations and declared strict punishments such as heavily fining EA women whom mother mixed-raced offspring or indenturing the child to 30 years of slave labor. Despite legislators’ efforts, by the 1800s the number of free mixed-raced slaves increased, and subsequently so did the pressure for legislators to determine who is White and who is Black (Jones, 1999). To distinguish between races, legislators created the one-drop rule. If a person had even 1% AA ancestry, the United States government deemed them Black (Brown, 2014).

The Lower South (south of North Carolina) differed in their tolerance of mixed-race people. Wealthy EAs often fathered mixed-race offspring, resulting in preferential treatment toward lighter-skinned AAs (Jones, 1999). For example, while darker-skinned AAs commonly worked outdoor heavy labor jobs, those with lighter skin worked indoors. Other preferential treatment included more access to education and the ability to own land (Keith & Herring, 1991).

Lighter-skinned AAs tried to distance themselves from those with darker skin for fear of losing their higher status position. For example, lighter-skinned AAs often barred those with darker skin from social events and memberships. To enter an elite fraternity, AA men had to pass a “paper bag test.” Lighter-skinned AAs compared the skin of candidates to a paper bag. If the person’s skin was darker than the bag, fraternity members banned their entry. Another such test, termed the “Blue Vein Society,” assessed whether the person’s skin was light enough to see the color blue through their skin. If the
veins appeared blue, the group allowed them to join their elite group (Bond & Cash, 1992).

**Intergroup effects.** Skin tone influences emotional responses to AAs beyond mere racial group categorization (Livingston & Brewer, 2002). When people view someone as a representative member of their group, they are more likely to evaluate that person in terms of their group’s stereotypes. In other words, features such as skin tone become associated with personality traits. For example, people evaluate darker-skinned AAs more negatively than lighter-skinned AAs as they are the more representative of their group (Blair, Judd, Sadler, Jenkins, 2002).

In a study examining responses on computer tasks, EA participants responded faster when the computer paired negative words with pictures of darker-skinned AAs than when the computer paired negative words with lighter-skinned AAs. When researchers asked about explicit attitudes, EA participants indicated they would like lighter-skinned AAs more than darker-skinned AAs, suggesting EAs hold both implicit and explicit preferences for lighter skin (Hagiwara et al., 2012).

When given the opportunity to list cultural stereotypes about dark and light skinned AA men and women, EA participants reported more negative traits for people with darker skin and traits that are more positive for people with lighter skin. For example, participants identified darker-skinned men as criminals and ostentatious and dark-skinned women as lazy and unmotivated. In other words, people view darker-
skinned AAs as more stereotypically “Black” and more negatively than lighter-skinned AAs (Maddox & Gray, 2002).

Just as skin tone shapes perceptions of AAs, initial preferences for a person shape our perceptions of skin tone. For example, in a study assessing EAs perceptions of Obama’s skin tone, people intending to vote for Obama consistently viewed his skin as lighter, while McCain supporters viewed Obama’s skin tone as darker than his actual skin tone. Following the 2008 election, McCain supporters’ perceptions of skin tone changed. After the inauguration of Obama, those who once opposed him then viewed his skin as lighter than they previously had (Kemmelmeier & Chavez, 2014).

**Intragroup effects.** Preferences for light skin are not solely an intergroup problem. Both AAs and EAs hold skin tone biases and attribute positive traits to lighter-skinned AAs (Bond & Cash, 1992; Hill, 2002; Maddox, 2004). In a study assessing AAs’ attitudes toward skin tone, AAs associated intelligence and attractiveness with lighter skin tones when compared to darker skin tones. AAs also reported they would prefer to marry a lighter skinned AA and have lighter-skinned future children (Anderson & Cronwell, 1977). AA children as young as 7 years old show skin tone preferences and discrimination. In one study, when asked to pair traits with either a light- or dark-skinned AA, children most often paired positive traits (e.g., wonderful, happy, healthy, friendly, right, and helpful) with lighter-skinned AAs. Conversely, the AA children most often paired negative traits (cruel, sad, sick, unfriendly, wrong, and selfish) with darker-skinned AAs. When researchers read these traits in stories about light- or dark-skinned
AAs, the children accurately recalled more information from stories depicting lighter skinned AAs with positive traits versus lighter skinned AAs with negative traits (Williams & Davidson, 2009). Similarly, another study found that AA children recalled accurate information more often when stories paired negative traits with darker-skin than when stories paired negative traits with lighter-skin. Also, children associated higher occupational status with lighter-skinned AAs more often than darker-skinned AAs (Averhart & Bigler, 1997). Taken together these studies show the endorsement of cultural stereotypes of darker-skinned AAs by ingroup children. The pervasiveness of these stereotypes reach beyond intergroup biases.

However, in some contexts, AAs prefer darker skin. For example, a study assessing importance and salience of skin tone found differing results among AAs in predominately white environments and AAs in predominately black environments. In a predominately AA university, AA students preferred darker-skinned peers and rejected lighter-skinned peers. However, AAs did not place particular importance on skin tone when in a predominately EA context. These differing results suggest skin tone becomes important for AAs when interracial interactions are not at play (i.e., when the interaction is not between EAs and AAs). When AAs are the majority, another social hierarchy takes form stratified by skin tone (Harvey, LaBeach, Pridgen, & Gocial, 2005).

Depending on the context and environment, AAs preference for skin tone varies. In predominately AA environments AA people tend to prefer darker-skin tone. However, in mixed race environments, both AAs and non-AAs prefer people with lighter-skin tone.
Both AAs and EAs hold skin tone biases and attribute positive traits such as intelligence to lighter-skinned AAs (Bond & Cash, 1992; Hill, 2002). EAs and AAs ascribe these positive traits to lighter-skin AAs as they more closely match eurocentric features (e.g., white skin), thus they more closely match the long held ideal (Maddox, 2004).

Skin tone is a key determinant in life outcomes such as education, occupation, and income. As the skin tone gradient darkens, the prestigious jobs requiring education and subsequent income declines. Those at the lightest end of the gradient earn 50% more than those at the darkest end earn. These patterns are true for AAs in general, and within the AA community, suggesting that favoring lighter skin tone is both an outgroup and ingroup issue (Keith & Herring, 1991).

**Skin tone and academic outcomes.** Skin tone preferences influence AAs academic success. On average, lighter-skinned AAs have two more years of education than darker-skinned AAs (Keith & Herring, 1991). Additionally, lighter-skinned AAs are more likely to marry partners with more education. These findings hold true when accounting for SES (Hughes & Hurtel, 1990).

Limited research is available on academic outcomes such as GPA and graduate school enrollment related to skin tone variations. For example, the National Longitudinal Study of Adolescent to Adult Health examined nearly 11,000 students in grades 7th-12th and found that as skin tone darkens, GPA declined. However, this finding held for every racial group except African Americans (Thompson & McDonald, 2015). Although this data indicates a non-significant relationship between AA skin tone and GPA, the sample
did not address whether participants came from predominately AA schools or mixed race schools. Predominately AA environments promote pro-dark skin tone biases, whereas mixed-race environments promote biases favoring those with lighter skin. It is possible that the mix of predominately AA and mixed race schools washed out GPA effects. Given the differing effects of skin tone per context, I argue the relationship between skin tone and GPA needs further evaluations. In the present study, I focus on AA students in mixed race environments.

**Skin tone and perceptions of discrimination.** Across several studies, lighter-skinned AA men perceived less discrimination than darker-skinned AAs. Darker-skinned AAs perceived the most discrimination when interacting with EAs and when interacting with AAs (Uzogara, Abduo, Lee, & Jackson, 2014). Lighter-skinned AA women also perceive less discrimination from EAs and other races/ethnicities. In another study, darker-skinned AA women perceive the most discrimination from other AA women and women from other races/ethnicities in comparison to lighter-skinned AA women (Uzogara & Jackson, 2016).

**Socioeconomic Status**

Socioeconomic status (SES) refers to the social class of a person and often informs the power and privilege a person can acquire (American Psychological Association, 2016). Important academic correlates of SES include the quality of school
district, classroom environment, resources available, and overall academic achievement (Sirin, 2005).

**SES and early education.** Disparities between lower- and higher-SES students start when children first enter school. These disparities include grouping lower-SES students in schools with less access to financial and academic resources than affluent schools. Lower-SES students are more likely to have new teachers with less experience and training compared to their higher-SES peers at more affluent schools. Additionally, lower-SES classrooms have a higher concentration of students who have learning difficulties and limited skills (Barbarin & Aikens, 2015).

Lower-SES children also face unfair treatment from teachers (Lott, 2001). For example, primary school teachers water-down the curricula for lower-SES students, suggesting the teachers see those students as incapable of academic achievements (Howard, 2010; Terrel & Marck, 2000). Teachers of lower-SES students hold lower expectation for their students. This is particularly problematic as teachers’ expectations directly relate to academic achievement down to the first grade level (Barbarin & Aikens, 2015). For lower-SES students, first-grade teachers’ expectations shape academic outcomes through high school. For example, students whose first-grade teachers underestimated their academic abilities scored worse on standardized tests assessing math, reading, vocabulary, reading, and verbal reasoning. However, if first-grade teachers overestimated their students’ abilities, the students performed significantly better on the standardized tests (Sorhagen, 2013).
**SES and college.** Lower-SES students are less likely to attend college and enroll in selective universities (Hearn, 1984). While enrolled in a four-year university, lower-SES students are more likely to work over 16 hours a week compared to their higher-SES peers, spend less than 10 hours a week studying, and they are less likely to earn grades higher than B. After college, lower-SES students have lower rates of graduate school enrollment and advanced degree attainment. Lower-SES graduate students report equal rates of earning a master’s degree, however they are less likely to pursue a doctoral degree than higher-SES students (Walpole, 2003).

**Skin Tone and SES in Education**

Both skin tone and SES individually impact academic achievement (Gullickson, 2005; Hughes & Hertel, 1990). Additionally, skin tone and SES interact when examining the socioeconomic disadvantage minorities commonly face. As such, skin color and subsequent experiences with prejudice vary across SES (Rothstein, 2004). SES is a key factor in differing academic achievement across racial and ethnic groups. For example, lighter-skinned participants from National Survey of Black Americans, reported more education, better occupations, and higher incomes than darker-skinned AAs (Keith & Herring, 1991).

Both skin tone and SES are markers for discrimination. The connection between race and SES is undeniable, and neither takes precedence over the other (Howard, 2010). Discrimination leads to various negative outcomes (e.g., lowered institutional
belongingness), and can impede academic achievement (Steele, 2003). Since experiences of discrimination links both SES to racial group categorization with academic outcomes such as persistence, attrition, and GPA, I argue discrimination should mediate the relationship between skin tone and SES and academic outcomes (e.g., GPA, graduation rates, and graduate school enrollment).

Perceptions of Discrimination and Academic Outcomes

Skin tone. Experiences of discrimination relate to negative academic outcomes. For AAs, discrimination relates to persistence, and performance. Those who report discrimination experiences also reported lower GPA, and less likelihood of working hard when starting something new or after performing poorly. Overall, AA adolescents lose motivation to achieve academically after they experience discrimination (Neblett, Philip, Cogburn, & Sellers, 2006). One study showed AA adolescents who perceived discrimination as a negative influence in employment reported less importance and less engagement in school. As importance of school lessened, grades declined (Taylor, Casten, Flickinger, Roberts, & Fulmore, 1994).

Another study found that AA adolescents reported frequencies of discrimination experiences from both peers and teachers at their school. Those who experienced discrimination reported lower levels of school importance, utility of school, and lower beliefs about their academic competences. Findings held true for both perceived discrimination by peers and perceived discrimination by teachers. Overall, findings
indicate perceptions of discrimination lead to lower levels of academic motivation (Wong, Eccles, & Sameroff, 2003).

Discrimination and stereotypes also influence AA students’ academic performance. Across four studies, AA participants performed significantly worse than EAs on intellectual tasks under certain conditions. AA participants primed with negative stereotypes about their race (e.g., lazy, token, poor) and who were told their performance is indicative of their intellectual ability were more aware of stereotypes about AAs, doubted their ability, and made more self-handicapping excuses for their performance. AAs were also less likely to provide their race on their questionnaire. Priming stereotypes about AAs coupled with stating the test is indicative of intellectual ability impaired performance on intellectual tasks. In addition, simply having AA participants indicate their race alone was enough to hamper performance (Steele & Aronson, 1995).

SES. Lower-SES students report feelings of inadequacy, intimidation, and exclusion because of their SES (Wentworth & Peterson, 2001). Experiences with exclusion and intimidation equate to experiences with classism (i.e., discrimination based on a person’s social class. Classism leads lower-SES students to feel rejected from their university and in turn, these students suffer negative academic consequences. For example, lower-SES students who experience classism have higher intentions of dropping out before graduating (Langhout, Drake, & Rosselli et al, 2009).

Universities enroll lower-SES students less often than they enroll higher-SES students. Since lower-SES students are the minority, they may be hyperaware of their
status on campus. As such, these students may feel mentally drained, impeding academic success. They may also feel more sensitivity toward rejection from their university. When encountering setbacks, lower-SES students blame themselves and do not perceive upward mobility through education, furthering negative academic outcomes (Rheinschmidt & Mendoza-Denton, 2014).

The Current Study

Both skin tone and SES influence academic outcomes, whether it is through structural causes (e.g., low-income schools) or psychological causes (e.g., stereotype threat). Skin tone and SES also influence experiences of discrimination on campus and when the two combine, I argue that perceptions of discrimination increase. I was not able to find research on skin tone variations, perceptions of discrimination and academic outcomes. However, since people view darker-skinned AAs as the most stereotypic members of the AA racial category, AAs’ experiences with discrimination should be most similar to darker-skinned AAs experiences in a university. The current study examines perceptions of discrimination as a mediating variable between skin tone and SES and academic outcomes.

Hypotheses

Hypothesis 1. Darker-skinned AA students perceive more prejudice on campus and have worse academic outcomes (GPA, negative evaluation of college experiences,
and less likely to plan on attending graduate school) compared to lighter-skinned AA students.

**Hypothesis 2.** Lower SES AA students perceive more prejudice on campus and have worse academic outcomes (GPA, negative evaluation of college experiences, and less likely to plan on attending graduate school) compared to higher SES students.

**Hypothesis 3.** There is an interaction between skin tone and SES on perceptions of prejudice on campus and academic outcomes. Darker-skinned AA students who have a lower SES perceive more prejudice on campus and have worse academic outcomes (GPA, negative evaluation of college experiences, and less likely to plan on attending graduate school) than lighter-skinned AA students tone and higher SES students with darker skin.

**Hypothesis 4.** Perceptions of prejudice on campus will mediate the relationship among skin tone, SES, and their interaction on academic outcomes. Those who perceive more prejudice on campus will have worse academic outcomes (worse GPA, more negative evaluation of college experiences, and less likely to have graduate school plans) than those who perceive less prejudice on campus.
Method

The proposed study uses data from the National Longitudinal Survey of Freshmen (NLSF). The NLSF sampled equal numbers of White, Black, Hispanic, and Asian first-time freshmen from 28 selective colleges and universities. The NLSF started with a baseline face-to-face interview in 1999 (Wave 1) and collected detailed data on students’ neighborhood, family, and educational environments, as well as their attitudes, aspirations, and motivations. Every subsequent spring semester, interviewers surveyed the same sample on social engagement and academic progress via telephone interviews, creating five waves. Waves 2 and 3 collected data on courses and grades, social networks, financial matters, living arrangements, relationships, and perceptions of prejudice on campus. Wave 4 collected similar data with the addition of information such as personal health, mentoring, extracurricular activities and expected degrees. Wave 5 assesses future employment or educational plans, racial and ethnic identity, incidences of prejudice, and opinions and behaviors (NLSF).

Participants

The proposed study uses data collected from AA students ($N = 1,051$) from Waves 1, 3 and 5 of the NLSF. After I dropped all cases that did not complete at least one full scale, the sample included 606 AA students. Males comprised 33% of the sample and all but 3 students were born in the U.S. (the three students did not report where they were born). Fifty-four percent attended private research universities, 36% attended public
research universities, and 9% attended liberal arts colleges. There were no systematic differences between students who completed all 5 waves and those who either dropped out of the study or refused to answer all scales.

Measures

**Skin tone.** In Wave 1, interviewers judged student’s skin tone on a scale from 0 *(very light)* to 9 *(very dark)*.

**SES.** In Wave 3, participants reported their annual household income of their senior year in high school. Household income included wages and salaries earned from all household members as well as other sources of income. Participants chose a range from under $3,000 to $75,000 or more.

**Perceptions of prejudice.** During their sophomore year (Wave 3), Participants rated their experiences of prejudice on campus on a scale ranging from 1 *(never)* to 5 *(very often)*. Experiences of prejudice included situations involving students, professors, and staff. Example questions include, “Since the beginning of the Fall 2000 term, how often, if ever, have students in your college classes made you feel uncomfortable or self-conscious because of your race or ethnicity?”, “How often, if ever, have you been discouraged from a course of study by your advisor or professor?”, and “How often, if ever, have you heard derogatory remarks made by other college staff about your ethnic group?” I averaged responses to create a perceived prejudice scale. Cronbach’s alpha was .828.
GPA. In the final wave (Wave 5), participants reported their overall cumulative grade point average.

Evaluation of college experiences. In Wave 5, participants rated their overall attitudes toward their college experience. Scale questions ranged from 0 (totally disagree) to 10 (totally agree). Example questions included, “College has given me a sense of mastery of the subjects I studied”, “My college experiences have prepared me for the future”, and “I am satisfied with the quality of instruction I received at college”. I averaged responses to create an evaluation of college experiences scale. Cronbach’s alpha was .890.

Future education. Participants determined the highest degree they expected to receive (Wave 5). Options included less than a BA/BS, BA/BS, MA or equivalent, PhD, or MD, LLD, or equivalent. I will treat this dependent variable as dichotomous (students who go one after BA/BS and students who stop after BA/BS).
Results

Assumptions

Before analyses, I examined variable distributions and assumptions of normality, linearity, homoscedasticity, and multicollinearity for each regression model. The SES, perceptions of prejudice, GPA, and evaluation of college experiences variables were skewed. SES had a skew to standard error ratio of 5.385, so I used the square root transformation to bring the ratio under 3:1. I used the inverse transformation to bring perceptions of prejudice’s skew to standard error ratio from 15.266:1 to 3:1 and the kurtosis to standard error ratio from 23.532 to 3:1. GPA and evaluation of college experiences were negatively skewed (-5.826 and -8.211, respectively) so I reflected both. For GPA, I used the reflected square root transformation, and the reflected log transformation for evaluation of college experiences. In addition to transformations, I also centered SES and skin tone to created interaction terms for each regression analysis.

After transforming and centering the variables, initial analyses showed the models met all regression assumptions. To assess multivariate outliers, I used a chi-square value of 16.27 to set a cutoff score. I removed 10 cases with Mahalanobis values exceeding this value.
Descriptive Statistics

As shown in Table 1, skin tone significantly correlates with SES, perceptions of prejudice, and plans to attend graduate school. SES correlates with GPA. GPA also correlates with evaluation of college experiences, and plans to attend graduate school. Evaluation of college experiences correlates with plans to attend graduate school.

I first ran analyses with all institutions included. I then ran analyses with historically AA institutions excluded. However, results were similar for both sets of data. Table 2 shows means and standard deviations for both sets of data.
Table 1  
*Correlations Between Variables*

<table>
<thead>
<tr>
<th>Variables</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. Skin Tone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. SES</td>
<td></td>
<td>-.108*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Skin Tone x SES</td>
<td></td>
<td>.606**</td>
<td>.667**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Perceptions of Prejudice</td>
<td></td>
<td>.107**</td>
<td>.031</td>
<td>.115**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Evaluation of College Experiences</td>
<td>-.003</td>
<td>.066</td>
<td>.046</td>
<td>-.176**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. GPA</td>
<td>-.064</td>
<td>.146**</td>
<td>.068</td>
<td>-.001</td>
<td>.113**</td>
<td></td>
</tr>
<tr>
<td>7. Attend Graduate School</td>
<td>-.139**</td>
<td>-.039</td>
<td>-.136**</td>
<td>-.037</td>
<td>-.117**</td>
<td>-.125**</td>
</tr>
</tbody>
</table>

*Note.* *p* < .05. ***p* < .01
Table 2

Means and Standard Deviations for Analyses with all institutions included and without historically AA institutions

<table>
<thead>
<tr>
<th>Variable</th>
<th>All institutions</th>
<th>Without AA institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M(SD)$</td>
<td>$M(SD)$</td>
</tr>
<tr>
<td>Skin Color</td>
<td>5.00(2.09)</td>
<td>4.98(2.04)</td>
</tr>
<tr>
<td>GPA</td>
<td>3.07(0.43)</td>
<td>3.06(0.43)</td>
</tr>
<tr>
<td>Attend Graduate School</td>
<td>1.08(0.27)</td>
<td>1.08(0.27)</td>
</tr>
<tr>
<td>Perceptions of Prejudice</td>
<td>1.46(0.44)</td>
<td>1.46(0.44)</td>
</tr>
<tr>
<td>Evaluation of College</td>
<td>7.31(1.56)</td>
<td>7.36(1.51)</td>
</tr>
<tr>
<td>SES</td>
<td>5.19(2.38)</td>
<td>5.19(2.41)</td>
</tr>
</tbody>
</table>

*Note.* *p < .05. **p < .01*
Perceptions of Prejudice

As a set, skin tone, SES, and the interaction between skin tone and SES, yielded a significant model, $R^2 = .028$, $F(3, 518) = 4.903$, $p = .002$. As shown in Table 3 and consistent with Hypothesis 1, darker-skinned students perceived more experiences of prejudice on campus than lighter-skinned students. Results did not support Hypothesis 2 and 3. SES did not relate to perceptions of prejudice and the interaction between skin tone and SES was not significant. Results also yielded a significant model when historically AA institutions were removed from the analyses, $R^2 = .024$, $F(3, 458) = 3.760$, $p = .011$.

GPA

Skin tone, SES, and the interaction between skin tone and SES significantly predicted GPA, $R^2 = .022$, $F(3, 500) = 3.673$, $p = .012$. Results without historically AA institutions showed similar findings, $R^2 = .024$, $F(3, 442) = 3.667$, $p = .012$. As shown in Table 3, Supporting Hypothesis 2, higher-SES students reported higher GPAs than lower-SES students. Results did not support Hypothesis 1 or Hypothesis 3. Skin tone did not predict GPA and the interaction between skin tone and SES was not significant.
Table 3

*Linear Regression with SES, Skin Tone, and their Interaction Predicting Academic Outcomes*

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>All institutions</th>
<th></th>
<th>Without AA institutions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b*</td>
<td>sr²</td>
<td>b*</td>
<td>sr²</td>
</tr>
<tr>
<td>Perceptions of prejudice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin tone</td>
<td>-.165**</td>
<td>.027</td>
<td>-.155*</td>
<td>.023</td>
</tr>
<tr>
<td>SES</td>
<td>-.013</td>
<td>.000</td>
<td>-.015</td>
<td>.000</td>
</tr>
<tr>
<td>Skin tone*SES</td>
<td>.050</td>
<td>.003</td>
<td>.039</td>
<td>.002</td>
</tr>
<tr>
<td>GPA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin tone</td>
<td>.053</td>
<td>.003</td>
<td>.048</td>
<td>.002</td>
</tr>
<tr>
<td>SES</td>
<td>-.129*</td>
<td>.017</td>
<td>-.137*</td>
<td>.019</td>
</tr>
<tr>
<td>Skin tone*SES</td>
<td>-.013</td>
<td>.000</td>
<td>-.029</td>
<td>.001</td>
</tr>
<tr>
<td>Evaluation of college experiences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin tone</td>
<td>.000</td>
<td>.000</td>
<td>.021</td>
<td>.000</td>
</tr>
<tr>
<td>SES</td>
<td>-.049</td>
<td>.002</td>
<td>-.035</td>
<td>.001</td>
</tr>
<tr>
<td>Skin tone*SES</td>
<td>.006</td>
<td>.000</td>
<td>.015</td>
<td>.000</td>
</tr>
</tbody>
</table>

*Note.* *p < .05. **p < .01
Evaluation of College Experiences

Skin tone, SES, and the interaction between skin tone and SES as a set did not predicted evaluations of college experiences, $R^2 = .002$, $F(3, 516) = .398$, $p = .755$. Similarly, results without historically AA institutions showed a non-significant model, $R^2 = .002$, $F(3, 456) = .311$, $p = .818$. None of the individual predictors was significant, indicating no support for Hypotheses 1, 2, or 3.

Graduate School Plans

Logistic regression assessed predicted graduate school plans from skin tone, SES, and the interaction between skin tone and SES. As a set these predictors produced a significant model, $LR \chi^2 (3, N = 511) = 15.351$, $p = .002$. As shown in Table 4, and consistent with Hypothesis 1, skin tone significantly predicted plans to attend graduate school. Those with lighter-skin were more likely to report plans to attend graduate school. Hypothesis 2 or Hypothesis 3 received no support. Neither SES nor the interaction between skin tone and SES predicted plans to attend graduate school.
Table 4

*Logistic Regression Predicting Plans to Attend Graduate School*

<table>
<thead>
<tr>
<th>Variable</th>
<th>$LR \chi^2$</th>
<th>$b$</th>
<th>$\text{Exp}(b)$</th>
<th>95% CI for $\text{Exp}(b)$</th>
<th>$R_L^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin tone</td>
<td>14.981</td>
<td>-.306*</td>
<td>0.736</td>
<td>[0.628, 0.864]</td>
<td></td>
</tr>
<tr>
<td>SES</td>
<td>1.105</td>
<td>-.346</td>
<td>0.707</td>
<td>[0.371, 1.348]</td>
<td></td>
</tr>
<tr>
<td>Skin Tone*SES</td>
<td>0.070</td>
<td>.047</td>
<td>1.048</td>
<td>[0.740, 1.486]</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p < .001
Discussion

Results show that darker-skinned AA students are more likely than lighter-skinned AAs to perceive experiences of prejudice on campus. These findings support research that shows darker-skinned AAs report more experiences of prejudice (Maddox, 2004). These findings were consistent for all institutions included in the dataset and the dataset without historically AA institutions. Although there was only a small sample of students from historically AA institutions, results indicate that darker-skinned AAs are likely to experience prejudice across U.S. institutions, regardless of the percent of AA students enrolled in the institution.

In addition to perceptions of prejudice, skin tone also predicted plans to attend graduate school. These results are consistent with similar research showing lighter-skinned AAs have more years of education than darker-skinned AAs (Keith & Herring, 1991). I was not able to find specific literature on skin tone and plans to attend graduate school, so these results can add to research examining higher education plans by AAs’ skin tone. Skin tone, however, did not predict GPA nor evaluations of college experience. One possible reason for these findings is that the NLSF collected information on GPA and evaluations of college experiences in the students’ final semester in college. These students are already successful and presumably evaluated college as a worthwhile investment, possibly skewing the results.

There was no interaction between skin tone and SES. Given the historical differences between lighter-skinned and darker-skinned AAs (e.g., lighter-skinned AAs
having more access to education and financial resources), I expected that those with lighter skin from higher-SES backgrounds would fare better academic outcomes than their darker-skinned classmates would. However, there was no difference in GPA, evaluation of college experiences, and graduate school plans between darker-skinned AAs with differing SES backgrounds.

SES related to higher GPA. These results corroborate previous findings indicating a significant correlation between SES and GPA (Walpole, 2003). One reason SES influenced GPA could be lack of resources available to those from lower-SES backgrounds. Lower-SES students may simply be less prepared for college. Additionally, lower-SES students work more hours than their higher-SES classmates, giving them less time to focus on their coursework.

**Implications and Limitations**

AA students suffer negative academic outcomes. However, there is a need to delve further into within group distinctions. It is important to look beyond intergroup differences (i.e., inequality between EAs and AAs) and examine differences within racial groups, such as skin tone. For example, previous work found that AA students are less likely to enter graduate programs (DeFreitas, 2012; Steele, 2003). The current study extended this by showing that darker-skinned students were less likely than lighter-skinned students to plan to go to graduate school. However, a limitation to these findings is over 90% of the students indicated that they planned to go to graduate school.
Additionally, overall respondents showed positive evaluations of their college experiences. The sample included successful students that were happy with their experiences on campus perhaps skewing the results.

One possible reason for these positive findings could be found in the characteristic makeup of the students that completed all 5 waves of the study. Since I dropped all students who did not complete every scale through wave 5, I lost over 57% of the original sample. These students could have dropped for a myriad of reasons that may have included low GPAs or negative evaluations of their college experience.

Another limitation to this work is that the NLSF did not explicitly measure experiences of prejudice related to SES. Therefore, I cannot conclude that those from the lower-SES bracket in this sample felt discriminated against because of their SES background. Knowing if students experience discrimination based on SES could explain the association between darker-skinned AAs and their increased experiences of prejudice on campus.

Future research should move beyond basic group distinctions to within group variations in order to understand academic outcomes of AA students with differing skin tones. The fact that these findings show skin tone predicts plans for graduate school is worrisome. Overall, higher education institutions may miss out on prospective capable, successful graduate students due to reason associated with superficial racial group variations.
References


Appendix: Survey

Ethnicity
☐ Respondent’s Ethnicity
☐ Black/African American
☐ Caucasian/White
☐ Asian
☐ Hispanic or Latino

Skin Color
Interviewer Observation Question: To the best of your ability, give your judgment as to the lightness or darkness of the respondent’s skin color.
☐ 0 Very Light
☐ 0-9
☐ 10 Very Dark

Socioeconomic Status
Finally, we would like to update our information on your family’s socioeconomic status. What is your parent or guardian’s household annual income? In thinking about household income you should include the wages and salaries of all household members, plus any self-employment income they may have had, along with interest, dividends, alimony payments, social security, and pensions. Is your parent or guardian’s annual income:
☐ 1 less than $20,000,
☐ 2 $20,000 - $24,999
☐ 3 $25,000 - $34,999
☐ 4 $35,000 - $49,999
☐ 5 $50,000 - $74,999
☐ 6 $75,000 - $99,999
☐ 7 $100,000 - $124,999
☐ 8 $125,000 - $149,999
☐ 9 $150,000 - $174,999
☐ 10 $175,000 -$199,999
☐ 11 more than $200,000?
☐ 98 Don’t Know
☐ 97 Refused

Perceptions of Prejudice on Campus
Since the beginning of the Fall 2000 term, how often, if ever, have students in your college classes made you feel uncomfortable or self-conscious because of your race
or ethnicity? Is it:
☐ 1 never,
☐ 2 rarely,
☐ 3 sometimes,
☐ 4 often, or
☐ 5 very often?
☐ 8 Don’t Know
☐ 7 Refused

☐ How often, if ever, have any of your college professors made you feel uncomfortable or self-conscious because of your race or ethnicity?
☐ Walking around campus, how often, if ever, have you been made to feel uncomfortable or self-conscious because of your race or ethnicity?
☐ Except for security guards at building entrances, how often, if ever, have the campus police asked you to present identification?
☐ How often, if ever, have you heard derogatory remarks made by fellow students about your ethnic group?
☐ How often, if ever, have you heard derogatory remarks made by professors about your ethnic group?
☐ How often, if ever, have you heard derogatory remarks made by other college staff about your ethnic group?
☐ How often, if ever, have you experienced any other form of harassment on campus simply because of your race or ethnicity group?
☐ How often, if ever, have you experienced harassment from members of your own race or ethnic group because you interacted or associated with members of some other group?
☐ How often, if ever, have you felt you were given a bad grade by a professor because of your race or ethnicity?
☐ How often, if ever, have you been discouraged by a professor from speaking out in class because of your race or ethnicity?
☐ How often, if ever, have you been discouraged from a course of study by your advisor or professor?

**GPA**
What is your cumulative grade point average at (name of most recent college attended)?
Evaluation of College Experience
On a zero to 10 scale where zero indicates total disagreement and 10 total agreement, to what extent would you disagree or agree with the following statements: If I had it to do all over again, I would choose to attend (name of most recent college attended)

☐ 0 totally disagree
☐ 1-9
☐ 10 totally agree
☐ 98 don’t know
☐ 97 refused

☐ My college experience has made me a better person.
☐ My college experience has made me more tolerant of other racial and ethnic groups.
☐ My college experience has improved my relationships with other racial and ethnic groups.
☐ I am very satisfied with the friends and acquaintances I made at college.
☐ My college experiences have prepared me for the future.
☐ College has given me a sense of mastery of the subjects I studied.
☐ College has better prepared me to deal with the real world.
☐ I am satisfied with the courses I took at college.
☐ I am satisfied with the professors I had at college.
☐ I am satisfied with the quality of instruction I received at college.
☐ I would recommend (name of most recent college attended) to a friend or relative as a place to attend college.
☐ I am likely to contribute to (name of most recent college attended)’s future fund raising efforts.

Graduate School Plans
Do you plan to attend graduate or professional school sometime in the next five years?
☐ 1 yes
☐ 3 already enrolled in advanced study
☐ 5 no
☐ 8 don’t know
☐ 7 refused