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Kala Burrell-Craft
Old Dominion University

Danielle R. Eugene

Juterh Nmah

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Article

A Look at Race, Skin Tone, and High School Students' Perceptions of Teacher-Student Relationship Quality

Kala Burrell-Craft 1, Danielle R. Eugene 2,* and Juterh Nmah 3

- Darden College of Education and Professional Studies, Old Dominion University, Norfolk, VA 23529, USA; kphurrel@odu.edu
- ² School of Social Work, University of Texas at Arlington, Arlington, TX 76019, USA
- Department of Advanced Educational Studies, California State University, Bakersfield, CA 93311, USA; inmah@csub.edu
- * Correspondence: danielle.eugene@uta.edu

Abstract: Racial disparities in education have put a spotlight on the role of teachers and the school environment that is created for students. As teachers are seen as a vital element of school climate, the interactions between teachers and students can have a significant effect on students' success. The purpose of this study was to examine the associations between race, skin tone, and teacher-student relationship (TSR) quality. Data drawn from the Fragile Families and Child Wellbeing Study included 995 ethnically and racially diverse adolescents. Hierarchical regression analyses revealed that being Black, Hispanic, or Multi-racial was significantly associated with TSRs. However, there were no between-group differences in TSRs across racial categories. Skin tone was not a significant predictor of TSRs and did not moderate the relationship between race and TSRs. Findings raise important implications for teacher training and professional development focused on culturally relevant practices that support optimal student interactions and provide promising evidence for school connectedness as an intervening mechanism in improving TSR quality, particularly for students of color.

Keywords: adolescents; race; skin tone; teacher-student relationship quality; K-12 education



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1. Introduction

Within the last few years, racial tensions in the United States have been heightened with the increased instances of police brutality against people of color, including Black youth. The tensions have brought to the forefront conversations about racial inequities and injustices in American society, for example, institutional racism in the K-12 public education system. Racism in school settings in the form of microaggressions, implicit and explicit bias, racial discrimination, and stereotyping continues to widen the racial achievement gap and the racial discipline gap and increases the over-policing of students of color (Voight et al. 2015). Research demonstrates that discriminatory practices and behaviors based on racial classification within the education system can affect the health and well-being of students of color and put them at a disadvantage, leading to negative long-term outcomes such as poor mental health, higher rates of unemployment, and increased chances of negative interactions with law enforcement (Williams 2020). Moreover, skincolor discrimination or skin-tone bias has been associated with higher levels of health and mental health problems in youth with darker skin tones than those with lighter skin tones (Calzada et al. 2019).

Racial disparities in education have put a spotlight on the role of teachers and the school environment that is created for students (Chamberlain et al. 2020; Liang et al. 2020). Particularly, the connection between the school system and how students of color are engaged and educated in comparison to their White counterparts. Educators are seen to

have an impact on student achievement, motivation, adjustment, behavior, and social-emotional well-being (Kraft 2019). Moreover, as teachers are seen as a vital element of school climate, the interactions between teachers and students can have a significant effect on students' success. Given the roles that teachers have in facilitating students' success and positive school climates, an examination of teacher–student relationship (TSR) quality is imperative.

1.1. Race, Skin Tone, and Teacher-Student Relationships

Previous research findings have demonstrated that a positive relationship between teachers and students is associated with increased student achievement (Eugene 2020; Federici and Skaalvik 2013), student motivation (Koca 2016; Yunus et al. 2011), school adjustment (Koca 2016), and improved social-emotional well-being (Federici and Skaalvik 2013) and behavioral outcomes (Benson et al. 2005; Golberg and Iruka 2022). Beyond this, TSRs have long-term effects on student trajectories. For example, Yeager et al. (2017) found that Black and Hispanic students with lower levels of trust in their teachers were more likely to have disciplinary infractions in the following year and were less likely to enroll in a four-year college compared to White peers. Although there is strong agreement among researchers on the importance of positive TSRs, there remains a lack of consensus on its conceptualization and defining features (Hagenauer and Volet 2014). Previous research studies have included a number of defining characteristics to describe TSRs, such as emotional support, dependency, trust, respect, closeness, conflict, and level of comfort that students have with their teachers (Hughes 2011; Hamre and Pianta 2001). Hughes (2011) discussed the consistent identification of support and conflict dimensions in teacher measures of TSRs, whereas student measures were often based on the characteristics of social support. For the purposes of this study, TSRs are defined as the social and emotional connection that can exist between a teacher and a student (Wubbels et al. 2014) and were examined by two comprehensive dimensions: (a) affective, which refers to the bond built between students and teachers (e.g., perceptions of care, trust, respect), and (b) support, which describes helpful behaviors provided by teachers for students' success (e.g., teachers setting clear expectations; Hagenauer and Volet 2014).

In the US public education system, students of color have historically been disadvantaged and often felt marginalized by their teachers as a result of their racial and ethnic backgrounds (Glock and Karbach 2015; Marrun et al. 2021), especially students of color who do not mirror the race of their teachers. Race, as a social construct, and racial categorization, remains at the center of hierarchical structures of power, further perpetuating inequalities in institutional systems such as education (Reece 2018; Thompson and McDonald 2016). Empirical findings have suggested that disparities in student outcomes stem from teachers' judgments that are influenced by implicit biases (Glock et al. 2013; Glock and Karbach 2015) or color-based discrimination (Keith and Monroe 2016; Thompson and McDonald 2016) which have a negative effect on TSRs. Beyond this, past studies show more negative and unfavorable teacher interactions among adolescents of color, which serve to maintain or exacerbate inequities (Calzada et al. 2019). Race is a key factor teachers use to form impressions of students and their potential (Thompson and McDonald 2016). Some teachers may form different expectations based on racial groups because of stereotypes and implicit biases or prejudiced attitudes they hold about students from particular racial groups (Peterson et al. 2016). Whether or not a teacher believes a student will succeed or expects them to succeed has been shown to affect how well students do in school, particularly among students of color (Flannery 2015; Milner 2012). Research has demonstrated that racial bias translates into biased interactions between teachers and students (McKown and Weinstein 2008; Thompson and McDonald 2016). For example, McKown and Weinstein (2008) found that teacher bias accounted for racial differences in achievement during an academic year. Furthermore, teacher biases toward White and Asian students were more in favor of higher academic achievement, as evidenced by the opportunity to participate in class discussions and to explain things to the class, than for Black and Hispanic students with similar records of achievement. This held true

among all teachers of varying racial and ethnic groups (McKown and Weinstein 2008). Peterson et al. (2016) confirmed that teachers' implicit prejudiced attitudes measured by stimuli and categorization tasks predicted student performance. Students benefited most academically when their teachers' implicit biases favored the ethnic group to which the student belonged (Peterson et al. 2016). Moreover, Okonofua and Eberhardt (2015) found that teachers who held negative stereotypes about Black and Hispanic students disciplined them at higher rates than their White counterparts.

TSRs play an important role in the educational system and are not only a factor in disparate outcomes for students of color but also for students of darker skin tones. Studies have shown that some TSRs fail due to stereotyping, implicit bias, and discrimination based on skin complexion (Hunter 2016). Skin-tone bias may influence teachers' expectations of dark-skinned students' learning potential and, consequently, the way they treat them in the classroom (Thompson and McDonald 2016). According to Ryabov (2013), teachers may unconsciously favor students of color with more Eurocentric features; this is due to lighter-complexion students being viewed as more attractive to teachers because of racialized beauty standards. In addition, lighter-complexion students are more likely to be judged as intelligent or kind, whereas darker-skinned students are viewed as less favorable due to educational structures, policies, and norms that reproduce and maintain racial inequality (Keith and Monroe 2016). Ryabov (2016) found that lighter skin color was associated with higher education attainment in comparison to students with darkbrown skin tones. Similarly, Ryabov and Goza (2014) showed that Hispanic students with Whiter phenotypic features had better academic outcomes than those with darker skin color. Thompson and McDonald (2016) found evidence of significant variation across and within racial groups, with darker-skinned students having a lower GPA than their lighter-skinned counterparts. These findings persisted independently of family characteristics, suggesting that skin-tone differences were being reproduced in the school environment as a function of school interactions.

1.2. Foundations of Skin-Color Discrimination

Skin-tone bias or colorism extends beyond simply being a skin color stratification. It is a form of oppression that is expressed through a hierarchical treatment of people where, usually, privilege is given to those of lighter complexions, and those of darker complexions experience disadvantages in areas such as the education system (Jackson-Lowman 2013; Thompson and McDonald 2016). The skin-tone hierarchy in the US is largely a legacy of White supremacy and racial mixing that resulted from European colonization and slavery (Hunter 2016; Keith and Monroe 2016). Among African Americans, colorism has its roots in the US slavery system, where enslaved Africans with White ancestry were often given more privileges and more desirable jobs on the plantation than their darker-skinned counterparts (Jordan 2012; Williamson 1995). This continued post-slavery and manifested in formal education opportunities and upward mobility for lighter-skinned African Americans (Jordan 2012; Reece 2018). Among Hispanics, colorism was established in the colonial practices of the Spanish, which included the degradation of the culture and language, religion, and aesthetics of the people (Telles 2014). The skin-tone hierarchy, established by Spanish colonizers, was also adopted by White Americans in the colonization of the Southwestern US (Acuña 2014). Among both Hispanics and African Americans, colorism has a strong historical legacy, but it is also reinforced today across many dimensions of social life (Chavez-Duenas et al. 2014) and educational experiences (Bodenhorn and Ruebeck 2007; Jackson-Lowman 2013; Thompson and McDonald 2016), with darker-skinned people experiencing less opportunity and access in these areas. The historical legacy of colorism works in tandem with current forms of racism that give value to Whiteness and Eurocentric features around the globe (Hunter 2011).

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1.3. Critical Race Theory

The current study uses concepts from critical race theory (CRT) for explanatory purposes. CRT has become an increasingly permanent fixture for education researchers seeking to critically examine educational opportunities and experiences and representation. It has evolved into a methodological approach for examining race, racism, colorism, and power (Parker and Lynn 2002; Reece 2018) and provides a useful framework for examining power structures within the education system that maintain racial disparities in student outcomes and experiences. It challenges the notion that a collection of individual preferences is primarily responsible for the maintenance of racial inequality and centers the critical analysis of structures and institutions (Reece 2018). This approach is necessary as schools work as institutionalized microcosms of the society at large (Sullivan and A'Vant 2009). CRT insists that researchers take into context the distinctive realities and lived experiences of students of color.

CRT challenges conventional social processes and normative standards that only reflect the White experience (Kolivoski et al. 2014). It challenges and disrupts racism and its associated social, legal, political, and educational consequences (Ladson-Billings and Tate 1995; Patton et al. 2011; Taylor 2009). CRT scholars have identified five central tenets used to analyze social structures, policies, and practice: (1) racial realism (Bell 1992); (2) critique of liberalism (Gotanda 1991); (3) Whiteness as property (Harris 1993); (4) interest-convergence (Bell 1992); (5) counter-storytelling (Delgado 1989). The CRT tenant of Whiteness as property (Harris 1993) applies to the disparate outcomes and experiences of students of color and darker-skinned students in the education system. From this perspective, Whiteness is the normative standard and affords the privilege of being perceived as worthy of positive and/or favorable teacher interactions. Meanwhile, students of color and darkerskinned students are often relegated to negative or less favorable teacher interactions and feel less welcomed in classroom settings due to stereotyping, biases, and discrimination (Glock and Karbach 2015). The idea that students of color are viewed as lesser contributes to personal and systemic bias when needing, seeking, or receiving assistance in the classroom. Students of color are subjected to increased surveillance and scrutiny, and as a result of this, increased visibility paired with structural racism and discriminatory practices leads to damaging experiences and interactions, which, in turn, affect academic and social outcomes for students of color (Glock et al. 2013; Glock and Karbach 2015).

1.4. Current Study

The purpose of this study was to examine the associations between race, skin tone, and TSRs across a racially and ethnically diverse sample. Specifically, this study investigated whether skin tone darkness moderated the relationship between race and TSR quality across racial groups. Substantial progress has been made in the study of race as an important social position variable within the education system (APA 2012); however, scholarship focused on racial phenotypes such as skin color remains limited. In addition, scholarship focused on TSRs as the unit of analysis is scarce (Liu et al. 2018). Most studies do not treat TSRs as the outcome variable; rather, it is used as an explanatory variable to explain student outcomes. Beyond this, studies that investigate TSRs focus on the frequency of teacher-student interactions, without describing the quality of TSRs (Hagenauer and Volet 2014). The current study extends previous research by investigating the associations of race, skintone darkness, and TSR quality (e.g., affective and support) as an avenue to understanding the school experiences of students of color and students of darker skin tones. Specifically, the study examined the relationship between race and TSRs and whether this relationship was moderated by skin-tone darkness across racial groups (e.g., Black, Hispanic).

2. Methods

2.1. Data Source and Sample

Data were drawn from the Fragile Families and Child Wellbeing Study (FFCWS), which includes a large sample of children who are disproportionately from minority and

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disadvantaged backgrounds. Through a stratified random sampling method, parent–child dyads were recruited from 20 large US cities between 1998 and 2000 (Reichman et al. 2001). Data collection occurred at the child's birth, and subsequent waves were collected at ages 1, 3, 5, 9, and 15 (Bendheim-Thoman Center for Research on Child Wellbeing 2018). Data from age-15 interviews were used for this cross-sectional study. In the Year 15 survey, one-third of the sample participated in a home visit, in which an interviewer collected observational data including the focal teen's appearance, yielding a measure of interviewer-assessed skin tone for approximately 1089 participants.

2.2. Measures

2.2.1. Teacher-Student Relationship Quality

Teacher–student relationship quality was assessed using five items created by the developers of the Year 15 teen survey and modeled after items from the Measures of Effective Teaching Project (2010). Teens were asked to report their feelings on these statements: "teachers in school really care about students", "teachers treat students with respect", "teachers accept nothing less than full effort", "teachers make lessons interesting", and "teachers explain difficult things clearly". Response categories were from 1 (*strongly agree*) to 4 (*strongly disagree*). Items were reverse-scored and the sum of items served as the final composite score. Scores ranged from 5 to 20, with higher values representing more positive teacher–student relationships (Bendheim-Thoman Center for Research on Child Wellbeing 2020). The Cronbach's alpha coefficient for the current sample was 0.76.

2.2.2. Race

Race characterized teens' self-reported race and ethnicity and response categories included: 1 for White, non-Hispanic; 2 for Black/African American, non-Hispanic; 3 for Hispanic/Latino; 4 for Other, non-Hispanic; and 5 for Multi-racial. When teens' responses could not be categorized, their responses were supplemented with a measure based on parents' racial classification (<1%). When both parents were reported to be of the same race or ethnicity, their shared racial classification was applied to their teen. When parents were of different races or ethnicities, their teen was coded as Multi-racial. When only one parent's race was available and the teen's self-reported race was unknown or unclassifiable, the teen was coded to share the race of the known-race parent (Bendheim-Thoman Center for Research on Child Wellbeing 2020).

2.2.3. Skin Tone

Teens participating in the home visit interview had their skin tone measured by interviewer observation, based on the Massey and Martin Skin Color Scale from the New Immigrant Survey (Massey and Martin 2003). In this scale, complexion is rated on a gradient from 0 to 10, with zero representing albinism, or the total absence of color, and 10 representing the darkest possible skin. Interviewers were provided a chart, with each point represented by a hand, of identical form but differing in color. Interviewers memorized the scale, which is never seen by respondents (Bendheim-Thoman Center for Research on Child Wellbeing 2020). The scale was recoded into a binary measure that identified respondents as light-skinned (0–5) or dark-skinned (6–10) to account for interviewer variability in making fine-tuned distinctions between individual points on the scale (Hannon et al. 2013).

2.2.4. Covariates

Gender, age, grade level, school type, teacher trouble, school connectedness, academic performance, and grade retention were included as statistical controls, given that they might confound the associations of interested variables in the current study (Cerezo and Ato 2010). Gender was measured as binary variable (0 = male, 1 = female). Age was a continuous variable that measured youths' age at Year 15 and ranged from 15 to 18 years. Grade level was a categorical variable that measured youths' grade level at Year 15 with 58% of the sample enrolled in 9th grade. School type was a binary variable (0 = public, 1 = private or parochial).

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Teacher trouble was measured by a single item that asked teens to report if "he/she had trouble getting along with teacher?" Response choices included 1 = never, 2 = sometimes, and 3 = often. This categorical variable was recoded into a binary variable (0 = no, 1 = yes (combining sometimes and often)). School connectedness was assessed by a four-item scale that measured youths' perceptions of inclusiveness, closeness, happiness, and safety at school at age 15. Scores ranged from 4 to 16, with higher values representing greater school connection (Bendheim-Thoman Center for Research on Child Wellbeing 2018). The Cronbach's alpha coefficient for the current sample was 0.73. Academic performance was measured using math grades at the most recent grading period during Year 15. Letter grades were converted into numeric values with A = 4, B = 3, C = 2, and D or lower = 1 and higher values represented higher grades. Grade retention was a dichotomous variable (0 = no, 1 = yes) assessed by a single item that asked teens "Have you ever failed a class in school?".

2.3. Data Analysis

The analytic sample included 995 adolescents who participated in the home interview, had a skin tone measurement, and reported on TSR quality. Missing data patterns on study variables were examined and found to be missing at random. As a result, list-wise deletion was used to address missingness in that all variables had less than 5% missing observations. Model assumptions were tested and results revealed no concerns with issues of multicollinearity; average variance inflation factor (VIF) = 1.42. Data analytic strategies included descriptive, bivariate, and multivariate techniques. Descriptive statistics (means and standard deviations for continuous variables and percentages for categorical variables) were used to describe study variables. Next, bivariate correlations among study variables were assessed.

Hierarchical regression analyses were used to examine the associations between race, skin tone darkness, and TSR quality. In Step 1, TSR was regressed on statistical controls (i.e., age, grade level, school type, teacher trouble, school connectedness, academic performance, and grade retention). In Step 2, race was entered into the model to explain variance in outcome above and beyond the statistical controls. In Step 3, the moderating variable, skin tone, was entered into the model. In Step 4, interaction terms (e.g., Black \times skin tone, Hispanic \times skin tone) were added to the model to assess the moderation effect of skin tone on the relationship between race and TSR. An interaction term was excluded for White students because there was no skin-tone variation. Multivariate analyses weighted the sample to be representative of each of the participating cities, adjusting for the oversampling of nonmarital births. All analyses were conducted using Stata 16.1 software (StataCorp 2019).

3. Results

3.1. Descriptive Statistics

The descriptive statistics are presented in Table 1. The sample was equally divided between males and females with an average age of 15.36 years (SD = 0.55). Seventeen percent identified as White, non-Hispanic; 48% as Black/African American, non-Hispanic 28% as Hispanic/Latino; 5% as Multi-racial, non-Hispanic; and 2% as Other, non-Hispanic. Among the 995 adolescents assessed for skin tone darkness, 67% were classified as light-skinned and 33% were classified as dark-skinned by the in-home interviewer. Ninety percent of the sample attended public school and 58% were enrolled in the 9th grade. Fifty-three percent of the sample reported trouble getting along with teachers, with 64% reported by light-skinned students and 36% by dark-skinned students. The average TSR score for the total sample was 16.87 (SD = 2.53): for teens classified as light-skinned, 16.95 (SD = 2.48), and for teens classified as dark-skinned, 16.71 (SD = 2.62).

Table 1. Sample description (n = 995).

| | Total M (SD) or % | Light-Skinned M (SD) or % | Dark-Skinned M (SD) or % | |
|------------------------------|----------------------|---------------------------|-----------------------------|--|
| Gender | | | | |
| Male (reference) | 50% | 65% | 35% | |
| Female | 50% | 69% | 31% | |
| Age | 15.36 (0.55) | 15.32 (0.53) | 15.44 (0.56) | |
| Grade Level | , , | , , | , , | |
| 6th | 0.2% | 50% | 50% | |
| 7th | 1.4% | 71% | 29% | |
| 8th | 12% | 70% | 30% | |
| 9th | 58% | 70% | 30% | |
| 10th | 24% | 59% | 41% | |
| 11th | 4% | 61% | 39% | |
| 12th | 0.5% | 80% | 20% | |
| School Type | | | | |
| Public (reference) | 90% | 67% | 33% | |
| Private or parochial | 10% | 67% | 33% | |
| Teacher Trouble | | | | |
| No (reference) | 47% | 70% | 30% | |
| Yes | 53% | 64% | 36% | |
| School Connectedness | 13.71 (2.32) | 13.78 (2.25) | 13.56 (2.45) | |
| Academic Performance | 2.77 (0.95) | 2.79 (0.93) | 2.74 (0.97) | |
| Grade Retention | ` ' | ` , | , | |
| No (reference) | 52% | 70% | 30% | |
| Yes | 48% | 64% | 36% | |
| Race (White) | 17% | 100% | | |
| Race (Black) | 48% | 40% | 60% | |
| Race (Hispanic) | 28% | 91% | 9% | |
| Race (Other) | 2% | 88% | 12% | |
| Race (Multi-racial) | 5% | 78% | 22% | |
| Skin Tone | | | | |
| Light-skinned | 67% | | | |
| Dark-skinned | 33% | | | |
| Teacher–student relationship | 16.87 (2.53) | 16.95 (2.48) | 16.71 (2.62) | |

Note. % = percentage for categorical variables; M (SD) = mean (standard deviation) for continuous variables.

3.2. Correlations

Pearson's R, Cramer's V, and bivariate regression analyses were performed for correlations. All control and independent variables were significantly associated with TSRs at p < 0.05, except grade retention and race. Race was retained as an independent variable of interest due to its significant relevance to the study and also because evidence of an association between an explanatory and outcome variable is not required in order for an independent variable's effect to be moderated by another variable (Hayes 2018). All significantly associated relationships with TSRs were weak to moderate. The largest correlation was between school connectedness and TSRs (r = 0.54) and the smallest correlation was between skin tone and TSRs (r = -0.04). Being male, younger, enrolled in a lower grade level, and attending private school, with higher school connectedness, getting along with teachers, and higher academic performance corresponded to more positive perceptions of teacher–student relationships.

3.3. Hierarchical Regression

The results of the hierarchical regression models predicting TSRs are presented in Table 2. Step 1 revealed that school type (β = 0.115, p = 0.043), trouble with teachers (β = -0.216, p = 0.003), and school connectedness (β = 0.352, p < 0.001) significantly predicted perceptions of TSRs, F(8,896) = 9.70, p < 0.001 and accounted for 25% of the variance. Students attending private or parochial schools were more likely to report positive TSRs

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in comparison to students attending public schools. In addition, students who reported no trouble getting along with teachers reported more favorable perceptions of TSRs in comparison to students that reported trouble getting along with teachers. For every unit increase in school connectedness, student perceptions of TSR quality increased by a score of 0.35, t(986) = 4.71, p < 0.001.

Table 2. Hierarchical regression analysis for teacher–student relationships (n = 995).

| Step | Variable | b | SE | β | R^2 | F |
|------|----------------------------------|--------|-------|-----------|-------|----------|
| 1 | | | | | 0.248 | 9.70 *** |
| | Gender | 0.216 | 0.306 | 0.047 | | |
| | Age | 0.050 | 0.339 | 0.009 | | |
| | Grade Level | -0.244 | 0.219 | -0.073 | | |
| | School Type | 0.796 | 0.392 | 0.115 * | | |
| | Teacher Trouble | -0.991 | 0.335 | -0.216 ** | | |
| | School Connectedness | 0.367 | 0.078 | 0.352 *** | | |
| | Academic Performance | 0.370 | 0.191 | 0.150 | | |
| | Grade Retention | 0.736 | 0.410 | 0.156 | | |
| 2 | | | | | 0.296 | 6.81 *** |
| 2 | Gender | 0.079 | 0.261 | 0.017 | 0.290 | 0.01 |
| | Age | 0.084 | 0.324 | 0.015 | | |
| | Grade Level | -0.333 | 0.194 | -0.099 | | |
| | School Type | 1.058 | 0.463 | 0.153 * | | |
| | Teacher Trouble | -1.019 | 0.328 | -0.222 ** | | |
| | School Connectedness | 0.381 | 0.078 | 0.366 *** | | |
| | Academic Performance | 0.346 | 0.170 | 0.140 | | |
| | Grade Retention | 0.434 | 0.320 | 0.092 | | |
| | Race (Black) | 1.228 | 0.471 | 0.246 ** | | |
| | Race (Hispanic) | 1.299 | 0.469 | 0.271 ** | | |
| | Race (Other) | 0.658 | 0.409 | 0.060 | | |
| | Race (Other) Race (Multi-racial) | 1.207 | 0.550 | 0.127 * | | |
| | Race (Mutti-racial) | 1.207 | 0.550 | 0.127 | | |
| 3 | | | | | 0.296 | 6.31 *** |
| | Gender | 0.078 | 0.262 | 0.017 | | |
| | Age | 0.084 | 0.324 | 0.015 | | |
| | Grade Level | -0.333 | 0.194 | -0.100 | | |
| | School Type | 1.060 | 0.466 | 0.154 * | | |
| | Teacher Trouble | -1.019 | 0.327 | -0.222 ** | | |
| | School Connectedness | 0.382 | 0.076 | 0.366 *** | | |
| | Academic Performance | 0.347 | 0.171 | 0.141 | | |
| | Grade Retention | 0.436 | 0.323 | 0.093 | | |
| | Race (Black) | 1.251 | 0.526 | 0.250 * | | |
| | Race (Hispanic) | 1.301 | 0.470 | 0.272 ** | | |
| | Race (Other) | 0.665 | 0.679 | 0.061 | | |
| | Race (Multi-racial) | 1.216 | 0.560 | 0.127 * | | |
| | Skin Tone | -0.039 | 0.303 | -0.007 | | |
| 4 | | | | | 0.302 | 6.99 *** |
| | Gender | 0.064 | 0.264 | 0.014 | | |
| | Age | 0.063 | 0.325 | 0.011 | | |
| | Grade Level | -0.341 | 0.197 | -0.102 | | |
| | School Type | 1.160 | 0.477 | 0.168 * | | |
| | Teacher Trouble | -0.993 | 0.333 | -0.216 ** | | |
| | School Connectedness | 0.381 | 0.075 | 0.366 *** | | |
| | Academic Performance | 0.352 | 0.170 | 0.143 | | |
| | Grade Retention | 0.332 | 0.325 | 0.143 | | |
| | Race (Black) | 1.220 | 0.543 | 0.094 | | |
| | | 1.288 | 0.472 | 0.244 | | |
| | Race (Hispanic) | | | | | |
| | Race (Other) | 0.993 | 0.665 | 0.091 | | |
| | Race (Multi-racial) | 1.323 | 0.589 | 0.139* | | |
| | Skin Tone | -0.437 | 0.519 | -0.079 | | |
| | Race (Black) × Skin Tone | 0.473 | 0.613 | 0.078 | | |
| | Race (Hispanic) × Skin Tone | 0.862 | 1.043 | 0.058 | | |
| | Race (Other) \times Skin Tone | -1.703 | 1.027 | -0.062 | | |

Note. For gender, 0 = male, 1 = female; for school type, 0 = public, 1 = private or parochial; for teacher trouble, 0 = no, 1 = yes; for grade retention, 0 = no, 1 = yes; for skin tone, 0 = light-skinned, 1 = dark-skinned. White was the reference group for race. Interaction term was excluded for White students because there was no skin-tone variation; all were assessed as light-skinned. The interaction term Race (Multi-racial) \times skin tone was omitted from the model due to no more meaningful variation to be explained by interaction term. * p < 0.05; ** p < 0.01; *** p < 0.001.

In Step 2, race was entered into the model as a categorical predictor to explain the variance in TSRs beyond that of the control variables. This model (Model 2) explained an additional 5% of the variance in TSRs. Being Black (β = 0.246, p = 0.009), Hispanic (β = 0.271, p = 0.006), and Multi-racial (β = 0.127, p = 0.028) significantly predicted perceptions of TSRs, in addition to control variables, school type (β = 0.153, p = 0.023), trouble with teachers (β = -0.222, p = 0.002), school connectedness (β = 0.366, p < 0.001), and math

performance (β = 0.140, p = 0.042), R^2 = 0.30, F(12,982) = 6.81, p < 0.001. The *margins* and *contrast* commands in Stata were used to perform a test of the equality of cell means. That is, to test whether the means of TSRs between each racial category were equal. The results revealed that there was no significant difference in the mean perceptions of TSR quality across racial categories, F(4,982) = 2.19, p = 0.068.

Adding skin tone in Step 3 did not significantly contribute to the regression model as there was no change in explained variance on the outcome, $R^2 = 0.30$, F(13,981) = 6.31, p < 0.001. Skin tone ($\beta = -0.007$, p = 0.898) was not a statistically significant predictor in the model. Also, the addition of interaction terms in Step 4 did not have a significant effect on the amount of variance explained in the model (Model 4), $R^2 = 0.30$, F(16,978) = 6.99, p < 0.001. Results indicated that Black × skin tone, Hispanic × skin tone, and Other × skin tone were not significant. That is, skin tone did not moderate the relationship between race (i.e., Black, Hispanic, and Other) and perceptions of TSRs. In the final regression model, school type ($\beta = 0.168$, p = 0.015), trouble with teachers ($\beta = -0.216$, $\rho = 0.003$), school connectedness ($\beta = 0.366$, $\rho < 0.001$), math performance ($\beta = 0.143$, $\rho = 0.038$), and being Black ($\beta = 0.244$, $\rho = 0.025$), Hispanic ($\beta = 0.269$, $\rho = 0.006$), or Multi-racial ($\beta = 0.139$, $\rho = 0.025$) remained statistically significant, with school connectedness being the most important predictor of TSRs.

4. Discussion

The development and well-being of students of color within the education system are understood to reflect a myriad of social position factors that determine everyday experiences, opportunities, and interactions (APA 2012). While significant progress has been made in the study of race as a critical social position variable, scholarship focused on skin color remains limited. This study contributes to this knowledge by examining the associations between race, skin tone darkness, and TSR quality among high-schoolers using a CRT lens. High school students typically divide their school day between multiple teachers and, as such, the multiple TSRs students engage in are a key component of their overall school experience (Liu et al. 2018). This study first examined the association between race and TSRs and then whether this relationship was moderated by skin tone darkness across racial groups (e.g., Black, Hispanic). After controlling for gender, age, grade level, school type, trouble with teachers, school connectedness, academic performance, and grade retention, findings revealed that being Black, Hispanic, or Multi-racial was significantly associated with TSRs. However, there were no between-group differences in TSRs across racial categories (e.g., White, Black, Hispanic,). Skin tone was not a significant predictor of TSRs and also did not moderate the relationship between race and TSRs.

Findings from this study revealed that Black, Hispanic, and Multi-racial teens had more favorable perceptions of TSR quality in comparison to their White peers. This effect was weak, as it only explained an additional 5% of variance beyond that of control variables. This finding contradicts previous research that demonstrates racial differences in teacherstudent interactions. For example, Casteel (2010) found that Black students as a group were not treated as satisfactorily by their teachers in comparison to their White counterparts. In addition, Yeager et al. (2017) found that Black and Hispanic students reported lower levels of teacher trust, which impacted relationship quality in comparison to White peers. Black and Hispanic students' decline in trust was affected by their awareness of teacher bias and procedural injustice at their schools (Yeager et al. 2017). Although research posits that students of color are more likely to experience and report poor TSR quality due to experiencing more racial and color discrimination and feeling less welcomed and included in school environments (Glock et al. 2013; Glock and Karbach 2015; Keith and Monroe 2016; Thompson and McDonald 2016), this study finding was not conclusive with this claim. This may be due to the fact that questions regarding TSR quality did not target a specific teacher but referred to teachers as a whole. Teens may have reflected and responded based on favorable teacher-student interactions. In doing so, this limits responses that reflect unfavorable and unsatisfactory experiences. Additionally, other mechanisms and/or

protective factors (e.g., racial identity, self-esteem, parental support and involvement in school) may have been at play when recalling TSRs. Overall, this finding points to quality interactions and experiences afforded to students of color within the education system which aligns with more recent research that demonstrated trajectories of TSRs in adolescence. Baysu et al. (2021) found that high-quality relationships (e.g., high teacher support and low rejection) appeared to be customary among both ethnic minority and majority adolescents.

The study's results also revealed that skin tone was not statistically associated with TSR quality and did not moderate the relationship between race and TSRs. This finding does not support previous research that provides evidence of skin tone differentials in teacher student interactions (Hunter 2016; Thompson and McDonald 2016). One explanation may be due to bias introduced by the measure of interviewer-assessed skin tone. Previous research has found that the race of the interviewer influences perceptions of skin darkness. For example, Hill (2002) concluded that White interviewers rated Black respondents' skin tones significantly darker than African American interviewers did. Moreover, interviewers also reported greater skin darkness variation among same-race respondents than other-race respondents (Hill 2002). Some bias could have conceivably been introduced, depending on the distribution of interviewer race in relation to respondent race. Another explanation may be related to issues of multicollinearity when interaction terms were entered into Model 4. Results revealed potential multicollinearity issues with the skin tone rating (VIF = 15.78) and the interaction term, Black \times skin tone (VIF = 15.34). Multicollinearity happens when a combination of variables makes one or more of the variables largely or completely redundant. In general, a VIF above 10 indicates a high correlation and is a cause for concern (Acock 2018). A final explanation may be due to differences in studies' methods, specifically measurements of skin tone ratings and TSR quality.

A contribution of this study is its empirical support for the importance of school connectedness in the prediction of TSR quality. School connectedness is characterized by students feeling accepted, included, and close to others in the school community (Goodenow 1993). Across all models, school connectedness remained positively and significantly associated with TSRs. This finding is in line with previous research and provides empirical support suggesting that school connectedness may be an important protective factor in improving TSRs and the overall school experiences of students, particularly for students of color. For example, Joyce (2015) found that higher perceptions of school connectedness were positively correlated with TSRs (e.g., perceptions of fair treatment by teachers, feeling cared about by teachers). Students who feel more connected, attached, and welcomed in school, in turn, perceive more positive interactions with teachers, which has important implications for healthy student development in schools. The psychological sense of connecting with the school environment is argued to be particularly important for adolescents, as they rely less on family as part of their development and come to rely more on relationships that are usually found in schools or with peers (Catalano et al. 2004; Goodenow 1993; Osterman 2000).

Since the Year 15 collection of FFCWS data, concerns around racism and injustices in K-12 schools and their impact on the lives of students of color have gained momentum, with increased societal awareness of racism and, to a lesser extent, colorism. Students of color are directly affected by these phenomena, with continuous reminders through media, the devaluation of students of color within the education system, and interpersonal encounters with peers and school personnel. This study did not find a significant relationship between skin tone and TSR quality and also skin tone did not moderate the relationship between race and TSRs. These findings are not consistent with previous research but underscore important considerations for future research. Future research should explore potential protective factors and school-level effects in addition to student-level processes to accurately understand student-teacher interactions and relationship quality. This may include exploring racial identity, the measurement of teachers' race and ethnicity, teacher attitudes, and voices from other agents such as parents. In addition, qualitative investigations would

be useful in gaining students of color's perspectives and their processing of experiences and issues with racism and colorism within their school environment.

5. Limitations and Future Directions

This study has several limitations that must be considered when interpreting the results. The findings are limited by the relatively small number of teens who completed in-home interviews. Only 25% of teens participating in the Year 15 survey had their skin tone observed and could be included in the analysis. More research is needed using samples including a greater portion of skin-tone measurement. Relatedly, future research should include more rigorous skin tone measures to reduce interviewer-assessed bias or include the use of the triangulation of self-ratings with interviewer ratings to produce more accurate classifications. A second limitation is the use of self-report measures to assess TSR quality. Relying on the self-reporting of participants runs the risk of reporter bias. Future research should include more objective measures and other report measures from different informants such as teachers and parents. Third, this research was a cross-sectional, correlational design that cannot provide strong evidence of a causal relationship or isolate the direction of effects. Another limitation is that this study did not control for the initial effects of perceptions of TSR quality. Research that employs a nationally representative sample and that could offer a broader understanding of the relationships between race, skin tone, and TSR quality will extend these findings considerably. Further, research that could provide important contextual information about the schools (e.g., the race and ethnicity of the teacher, teacher attitudes, the leadership and engagement of teaching staff) that are most successful in cultivating positive teacher-student interactions for students of color will have important implications for educational policy and practice.

6. Implications for Practice

As teachers are key stakeholders and facilitators of school climate, lasting, genuine, and supportive interactions with youth can facilitate students' success. Study findings make a case for continued teacher training and professional development that supports an understanding of the critical role of race, racial categorization, power, and systemic racism in education, which continues to perpetuate inequalities in the classroom setting. Teacher training needs to be inclusive of culturally relevant and anti-racist teaching practices that support optimal student interactions, particularly for students of color. In addition, such training allows teachers to become more cognizant of personal biases, understand how biases impact their teaching, perspectives, and interactions, and develop tools to become culturally responsive teachers. Similarly, training can demonstrate how to effectively engage students beyond the daily activities of learning. It is important that teachers, as well as administrators and other supportive school staff (e.g., counselors, social workers, psychologists), understand the complexities around socio-cultural topics for self-awareness purposes, but most importantly, their impact on students.

A contribution of this study is its empirical support for the importance of school connectedness as an intervening mechanism in improving TSR quality. School administrators and support staff should assist teachers by working to create inclusive and supportive school cultures that encourage students, particularly students of color, to form strong connections to members of the school environment. The push for increased connectedness, leading toward improvement in students' experiences in the classroom could take on many forms. For example, school staff could implement climate-building activities with components that directly target connections to the school, or enact school policies that ensure that students feel attached to and accepted within the school environment.

7. Conclusions

The objective of this study was to examine the associations between race, skin-tone darkness, and TSRs across a racially and ethnically diverse sample. Specifically, this study investigated if there was an association between race and TSR quality and whether skin tone

darkness moderated the relationship between race and TSR quality across racial groups. Hierarchical regression analyses revealed that, contrary to previous research findings, being Black, Hispanic, or Multi-racial was significantly associated with TSRs. That is, students of color reported more favorable perceptions of TSR quality in comparison to their White peers. In addition, skin tone was not a significant predictor of TSRs and also did not moderate the relationship between race and TSRs. These findings, along with the discovery of school connectedness as an important indicator of TSRs, raise important implications for practice. For one, the promotion and continuation of professional development that supports an understanding of the critical role of race in teacher–student interactions is imperative. Secondly, identifying strategies of key support staff (e.g., counselors, social workers, psychologists) to assist teachers in creating inclusive and supportive school cultures that encourage students, particularly students of color, to form strong connections and to feel safe and welcomed is necessary for healthy student development.

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