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The Impact of Everyday Discrimination and Racial Identity Centrality on African American Medical Student Well-Being: a Report from the Medical Student CHANGE Study

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Abstract

Positive psychological well-being is an important predictor of and contributor to medical student success. Previous work showed that first-year African American medical students whose self-concept was highly linked to their race (high racial identity centrality) were at greater risk for poor well-being. The current study extends this work by examining (a) whether the psychological impact of racial discrimination on well-being depends on African American medical students' racial identity centrality and (b) whether this process is explained by how accepted students feel in medical school. This study used baseline data from the Medical Student Cognitive Habits and Growth Evaluation (CHANGE) Study, a large national longitudinal cohort study of 4732 medical

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Compliance with Ethical Standards: **Research Involving Human Participants** All procedures in studies involving human participants were in accordance with the ethical standards of the institutional and or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Conflict of Interest The authors declare that they have no conflict of interest.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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students at 49 medical schools in the USA (n = 243). Regression analyses were conducted to test whether medical student acceptance mediated an interactive effect of discrimination and racial identity centrality on self-esteem and well-being. Both racial identity centrality and everyday discrimination were associated with negative outcomes for first-year African American medical students. Among participants who experienced higher, but not lower, levels of everyday discrimination, racial identity centrality was associated with negative outcomes. When everyday discrimination was high, but not low, racial identity was negatively related to perceived acceptance in medical school, and this in turn was related to increased negative outcomes. Our results suggest that discrimination may be particularly harmful for African American students who perceive their race to be central to their personal identity. Additionally, our findings speak to the need for institutional change that includes commitment and action towards inclusivity and the elimination of structural racism.

Keywords

Racial identity; Discrimination; Medical student well-being

Introduction

Positive psychological well-being is an important predictor of and contributor to medical student success, including academic performance, resilience, and personal fulfillment [1]. Moreover, well-being enhances professionalism and promotes high-quality patient care [2, 3]. Yet, the prevalence of depression and anxiety among medical students is particularly high, exceeding the prevalence among graduate students and young adults in the general population [3, 4]. Previous studies of African American medical students found that they were at greater risk for poor well-being (depression and anxiety) and low self-esteem compared to their counterparts [5, 6]. Research on African Americans' everyday experiences with discrimination suggests that this may be due in part to additional stressors related to their minority status and a lower likelihood of feeling like they will fit in and be accepted in their medical school environment [7, 8]. However, this relationship is not well understood. We hypothesize that these additional stressors may help explain African American students' poorer overall well-being. For example, African American medical students report higher levels of social isolation [7, 8] and more experiences with racial discrimination [8], both of which have been found in other settings to impact psychological well-being [4-8]. Ensuring that African American medical students, in particular, have positive well-being is of particular importance to the Institute of Medicine goal of diversifying the physician workforce [9, 10], as well-being is linked to retention and success in the profession [11, 12]. Moreover, given the importance of well-being on medical students' success and ability to provide quality patient care, it is important to understand the individual and situational factors that may influence the extent to which African American medical students feel less accepted in medical school and experience poorer well-being and decreased self-esteem than White students.

Researchers have documented that social identity, defined as the portion of an individual's self-concept derived from perceived membership in a relevant social group, may impact the

extent to which individuals feel accepted and experience positive well-being in new environments [13]. Racial identity—a specific form of social identity—can play a particularly important role in the psychological well-being of African American children, adolescents, and adults. For the purposes of this paper, racial identity is defined as "the significance and qualitative meaning that individuals attribute to being [African American] in their conceptualizations of self" (p.1080) [14]. African Americans self-report their levels of racial identity by answering the extent to which they identify with their racial group by endorsing statements such as "Being Black is important to my self-image." However, the relationship between racial identity and well-being has not been studied extensively among medical students, and it is not entirely clear whether and under what conditions strong racial identification might carry psychological advantages [6].

Research on social acceptance suggests that, because their group is often marginalized or stigmatized, African Americans who are highly identified with their racial group may feel a greater sense of social isolation in predominantly White contexts such as school or work [10]. Thus, although some research suggests that stronger racial identity predicts better psychological functioning of African Americans [11, 12, 15, 16], there is evidence that the effects of racial identity on social acceptance and well-being may be context dependent [17–24]. For example, in situations in which (1) the environment is racially hostile (e.g., frequent racial discrimination), (2) there are cues indicating that one is at risk for being negatively stereotyped due to one's race, and/or (3) there is high pressure to conform to a culture that is more comfortable for Whites than African Americans, strong racial identity may be negatively related to psychological well-being [17]. This is because individuals who feel closely connected to their African American identity may feel particularly threatened and less accepted in environments in which there is frequent discrimination against the group with which they identify, relative to those who do not identify as strongly with the group [25]. Evidence suggests that this may be particularly likely for African Americans who are higher in racial identity centrality, a dimension of racial identity that refers to "the extent to which a person normatively defines himself or herself with regard to race" [15]. Studies of African American students attending selective colleges and universities suggest that those who more strongly identify with their racial group (i.e., African Americans) endorse a greater sense of "common fate" with other African Americans, in general; have a greater social distance from Whites; and tend to have different views of racial inequality than African Americans who adopt an American or "raceless" identity [18]. Thus, it is possible that racial identity centrality may moderate the relationship between experiences of racial discrimination (i.e., a racially hostile environment) and mental health, and this may be explained through the extent to which students feel a sense of acceptance in medical school.

The current study extends previous work [6, 19] by examining whether the psychological impact of racial discrimination on well-being depends on African American medical students' racial identity centrality. To date, we are not aware of any studies testing the effects of racial identity centrality and everyday discrimination on African American medical students' acceptance and well-being. Using a national sample of first-year medical students, the present study seeks to examine the impact of racial identity centrality and everyday discrimination on first-year African American medical students' psychological well-being and self-esteem and the extent to which this relationship is explained through students' sense

of acceptance in medical school. Signals that the social environment is unfavorable for African Americans as a group should feel particularly self-relevant for African Americans who feel that their racial identity is a core part of their self. Therefore, we hypothesize that everyday discrimination will have a negative impact on well-being and self-esteem among African Americans who are high, but not low, in racial identity centrality and that this process will be explained through the extent to which students feel like they themselves are accepted in medical school.

Data and Methods

Data Source

This study uses baseline data collected as part of the Medical Student Cognitive Habits and Growth Evaluation (CHANGE) Study, a large longitudinal study of student experiences among first-year medical students who matriculated in US medical schools in the fall of 2010. For detailed study protocol information, please refer to Phelan et al. [20, 21]. We sampled medical students using a stratified multistage sampling design. In the first stage, we selected 50 medical schools from a total of 131 MD-granting US schools using a proportional to (class) size sampling methodology. One of the 50 schools sampled for our study was a military school that had highly unique features, including acceptance policies, curriculum structure, and student characteristics. Due to concerns about the gene-ralizability of our study findings, we excluded this school ($n = 169$) from analysis. Historically, Black medical colleges were not included in our sample of schools. In the second stage, we recruited first-year students from the selected schools using a combination of student-provided emails and a commercially available list of medical students, initially, then a snowball sampling strategy. The institutional Internal Review Boards approved the study. All students who completed the survey received a $50 incentive for participation.

Between October 2010 and January 2011, a total of 4732 first-year medical students completed the baseline survey representing 81 % of the 5823 students invited to participate in the study and 55 % of all 8594 first-year students enrolled at the 49 sampled schools (see Phelan et al. [20, 21] for a participant recruitment flowchart).

Study Sample

Because this study focuses on the experiences of students who identify as Black/African American, our analyses focused on medical students who exclusively self-identified as Black/African American ($N = 243$; see Table 1 for additional sample characteristics). Research on multiracial individuals suggests that they tend to have multiple racial identities, rather than identifying solely with being African American. Further, multirace individuals may thus have different social experiences (from African American individuals) [26]. Taken together, students who identified as more than one race (in addition to Black/African American) were excluded from the sample ($N = 58$).

Study Measures

Outcome Measures

Well-being (depression, anxiety, fatigue, and stress): We assessed *depression*, *anxiety*, and *fatigue* using three validated instruments—the PROMIS Depression Short Form (eight items), the PROMIS Anxiety Short Form (seven items), and the PROMIS Fatigue Short Form (five items). Participants responded to each item on a 5-point Likert-type scales ranging from 1 *Never* to 5 *Very Often* [22]. We calculated the mean for each scale with higher scores indicating higher levels of depression, anxiety, and fatigue, respectively. The Cronbach's alpha for the depression scale was 0.94; for anxiety, 0.93; and for fatigue, 0.89. The depression, anxiety, and fatigue raw scores were standardized, where a score of 50 is the average for the US general population with a standard deviation of 10, as per the PROMIS scoring manual [22]. A higher PROMIS *t* score represents more of the concept being measured; therefore, a *t* score of 60 is one *SD* worse than average. *Perceived stress* was measured using the Short Perceived Stress Scale, a 4-item self-report measure that assesses the amount of stress the individual has felt in the past month. Participants responded on 5-point Likert-type scales ranging from 1 *Never* to 5 *Very Often*. Higher scores indicate higher levels of perceived stress. We created a mean scale score (alpha = 0.69) [23].

State Level Self-esteem: *State self-esteem* was measured using the 11-item Global State Self-Esteem scale. This measure assesses an individual's self-esteem at a given point in time using items such as “I feel confident about my abilities” and “I worry about whether I am regarded as a success or a failure.” Participants responded on 5-point Likert-type scales ranging from 1 *Not at all* to 5 *Extremely*. Higher scores indicate higher levels of state self-esteem. We created a mean scale score (alpha = 0.83) [26].

Predictor Measures

Acceptance: Medical student *acceptance* was measured using a previously validated 2-item acceptance measure, which was adapted from Murphy, Steele, and Gross [24] to be medical school specific. This measure assessed the extent to which students felt like they were accepted in medical school using items such as “To what extent do you feel like you are accepted in medical school?” Participants responded on 5-point Likert-type scales ranging from 1 *Not at all* to 5 *Extremely*. Higher scores indicate higher levels of perceived acceptance. We created a mean scale score (alpha = 0.83).

Racial Identity Centrality: This study used four items from the centrality subscale of the Multidimensional Inventory for Black Identity (MIBI) to assess racial identity. The MIBI is a 56-item measure developed to assess the three stable theoretical dimensions (centrality, ideology, and regard) outlined by Sellers and colleagues' model of racial identity: the Multidimensional Model of Racial Identity (MMRI) [27]. The MMRI is a theoretical model that represents a synthesis of ideas from many existing models of African American racial identity (in African Americans college students and adults) [25, 28]. Given our interest in understanding the significance of race to an individual's self-definition, we selected items from the centrality scale to measure the extent to which being African American is central to the respondents' definition of themselves (e.g., “Being Black is important to my self-

image"). A higher score on the centrality scale is indicative of race being a more important aspect of the self. We created a mean scale score (alpha = 0.79).

Everyday Discrimination: Everyday discrimination was measured using a previously validated 9-item measure [29]. This measures the extent to which participants experience discrimination and unfair treatment throughout their daily lives with items such as "In your day-to-day life how often…[are you]…called names and insulted?" Participants responded on 6-point Likert-type scales ranging from 1 *Never* to 5 *Almost every day*. Higher scores indicate greater everyday discrimination. We created a mean scale score (alpha = 0.91).

Covariates—All students included in the present report self-identified as African American. Standard demographic questions were used to measure gender, age, and socioeconomic status. Socioeconomic status was categorized into three groups: low-middle SES (family income of less than $10,000–$74, 999), upper-middle SES ($75,000–$249,999), and upper SES ($250,000–$500,000 or more) [30].

Analyses

Because each participant completed each item of interest, we computed one score per participant for each measure used in our analysis strategy. All of our analytic models treated participant as the unit of analysis and examined the extent to which various individual-level scores could be used to predict measures of individual well-being. We fit separate ordinary least squares (OLS) regression models predicting each outcome variable. We tested the interactive effect between racial identity centrality and everyday discrimination by including a product term in the model. In cases where this interaction was statistically significant, we described it further by refitting the model with the zero point of everyday discrimination set to one standard deviation (*SD*) above or below the mean.

Regression analyses were conducted to test whether medical student acceptance mediated the interactive effect of discrimination and racial identity centrality on self-esteem and well-being at high but not low, levels of everyday discrimination using model 8 of Hayes' PROCESS macro [31]. This macro estimated two regression models, one using racial identity centrality, everyday discrimination, and their interaction to predict perceived acceptance and one using racial identity centrality, everyday discrimination, their interaction, and perceived acceptance to predict well-being. To obtain the indirect effect of interest, the slope associated with the interaction term in the model predicting perceived acceptance was multiplied by the slope associated with perceived acceptance in the model predicting well-being. The bounds on this product were estimated via a bias-corrected confidence interval based on 1000 bootstrap samples. That is, the model allowed us to assess whether the relation between racial identity and decreased psychological well-being and self-esteem is explained by a decrease in perceived acceptance when everyday discrimination is high, but not low.

Results

Results from six regression models revealed that both racial identity centrality and everyday discrimination were associated with negative outcomes. Specifically, as racial identity

centrality increased, depression, anxiety, perceived stress, and fatigue increased and state self-esteem decreased. Similarly, as everyday discrimination increased, depression, anxiety, perceived stress, and fatigue increased and state self-esteem decreased (see Table 2).

In most of these models, there was a significant interaction between racial identity centrality and everyday discrimination. Among participants who experienced higher levels of everyday discrimination (+1*SD*), racial identity centrality was associated with increased depression, anxiety, perceived stress, and fatigue and decreased state self-esteem. Among participants who experienced lower levels of everyday discrimination (−1*SD*), racial identity was unassociated with these outcomes, except that it was weakly but significantly associated with lower state self-esteem (see Table 2).

Six moderated mediation regression analyses revealed the expected mediational effects. When everyday discrimination was high, racial identity was negatively related to perceived acceptance in medical school, and this in turn was related to increased depression, anxiety, perceived stress, and fatigue and decreased state self-esteem. Perceived acceptance in medical school did not explain the relation between racial identity centrality and these outcomes when everyday discrimination was low, however, and the confidence intervals included zero (see Table 3).

Discussion

Results from this national survey of first-year medical students indicated that high levels of racial identity centrality and discrimination together contributed to poorer well-being (higher levels of depression, anxiety, fatigue, and perceived stress and lower levels of state self-esteem). The observed interaction between racial identity centrality and everyday discrimination further suggests that discrimination may be particularly harmful for African American students who perceive their race to be central to their personal identity. These findings build on an initial study [6], which determined that African American students for whom racial identity was more central to their definition of themselves were more likely to experience depression and anxiety symptoms in their first year of medical school. The present analysis clarifies this relationship by showing that identity centrality may only be related to well-being for students who are exposed to frequent instances of discrimination. The new findings also build on the initial paper by exploring the role of acceptance as a mediator of the relationship between identity centrality and poor well-being. In brief, for students who experienced high levels of everyday discrimination, racial identity centrality was associated with lower perceived acceptance in medical school, which was further associated with poorer well-being. This is consistent with the social psychological literature on social identity, which shows that African American students' attunement to environmental cues that signal negative judgments, stereotypes, and treatments is tied to the extent to which they feel accepted in that environment, and that feeling accepted is related to positive psychological outcomes [31, 32]. None of the covariates (age, gender, and income) were consistently related to the outcomes of interest. The lack of an income effect may be due to the fact that the majority of African American medical students in our sample came from higher SES families. However, one limitation of this study is that we did not examine the impact of potentially important stressors such as family and significant other issues and

financial burdens on the students' well-being. Moreover, it is possible that certain factors may interact with racial identification to buffer African Americans students from the stressors they may encounter in medical school. While it is beyond the scope of this paper, future research should examine the extent to which other resources and stressors may affect well-being.

Medical school is an elite, often predominantly White, environment that attracts students who are psychologically invested in their academic success. A substantial body of research reveals that, in contrast with African American students who dis-identify with academics as a domain of self-esteem, African American students who strongly identify with academic achievement are highly susceptible to stereotype threat (a psychological state created by awareness that one's group may be judged negatively because of a stereotype) [32]. Stereotype threat undermines well-being and academic performance, and is likely to be activated for these students during medical school, because of the emphasis on intellectual prowess and the relatively low number of other students of color. For students with higher racial identity centrality, feeling stigmatized because of race may also activate more general identity threat that further undermines adjustment in new settings. Cohen and Garcia's [33] Identity Engagement Model (IEM) proposes that when African Americans encounter situations in which they believe that those within their environment may link their group identity to negative stereotypes, they devote considerable attention and energy to monitoring for cues of bias. In addition, there is a well-documented literature describing the experiences of racial harassment and discrimination by medical students in the USA [13, 14]. The process of monitoring for bias and more experiences of discrimination lead to increased cognitive demands and, as a result, increased stress. Our findings are consistent with this model, showing that students for whom these cues are particularly salient (i.e., frequently noticed and relevant to a central component of identity) experience greater stress.

These findings are important in that they illustrate that medical school environmental factors may interact with medical students' individual-level factors to impact their sense of fit and ability to cope with stressors in medical school. Under many circumstances, belonging to a particular social category or group may provide a support network, facilitate effective coping strategies against stressors, and promote positive self-esteem [27, 29]. However, for African Americans, particularly with high racial identity centrality, which promotes greater social connectivity to in-group members [18], building such networks in medical school may be difficult. This lack of social support may negate the beneficial effects of a strong racial identity for well-being. Recognizing the need for a more diverse physician workforce, many medical schools have made concerted efforts to increase the number of African American medical students in their institutions. However, little is known about the impact of increased diversity for those from these minority backgrounds. While some may argue that social characteristics become background variables in the face of an overwhelming medical student culture [30], our findings suggest the opposite. Professional socialization is real but may not supersede racial identity for many minority group members. In order to successfully train African American medical students in a healthy way, medical schools must become more aware of the important role that race plays in the medical school experience.

Thus, our findings speak to the need for institutional change that includes commitment and action towards inclusivity and the elimination of structural racism. Creating an institutional environment that is fair, equitable, and inclusive is vital to promoting a sense of belonging and maintaining the well-being of medical students. Indeed, a recent study has found that a negative diversity climate in medical schools is harmful to the well-being of all medical students regardless of their race/ethnicity and is associated with increased implicit racial bias among non-Black students [33]. Medical schools must seek to systematically document and understand the aspects of their institutional climate that contribute to both equity and inequity. They must become comfortable discussing issues of everyday racial discrimination and the impact that it has on their students as well as the society at large. Recognizing the pervasiveness of the value system and culture of medical training institutions and how this system manifests itself on an individual level by impacting the well-being and self-esteem of some trainees will go a long ways towards improving the health of African American medical students, particularly those who identify highly with their race.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

1. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. Academic Medicine. 2006; 81(4):354–73. [PubMed: 16565188]
2. Dyrbye LN, Thomas MR, Eacker A, Harper W, Massie FS, Power DV, Huschka M, Novotny PJ, Sloan JA, Shanafelt TD. Race, ethnicity, and medical student well-being in the United States. Arch Intern Med. 2007; 167(19):2103–9. [PubMed: 17954805]
3. Schwenk TL, Davis L, Wimsatt LA. Depression, stigma, and suicidal ideation in medical students. J Am Med Assoc. 2010; 304(11):1181–90.
4. Broman CL, Mavaddat R, Hsu SY. The experience and consequences of perceived racial discrimination: a study of African Americans. Journal of Black Psychology. 2000; 26:165–80.
5. Jackson JS, Brown TN, Williams DR, Torres M, Sellers SL, Brown K. Racism and the physical and mental health status of African Americans: a thirteen year national panel study. Ethnicity and Disease. 1996; 6:132–47. [PubMed: 8882842]
6. Kessler RC, Michelson KD, Williams DR. The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. Journal of Health and Social Behavior. 1999; 40:208–30. [PubMed: 10513145]

7. Landrine H, Klonoff EK. The schedule of racist events: a measure of racial discrimination and a study of its negative physical and mental health consequences. Journal of Black Psychology. 1996; 22:144–68.
8. Sanders-Thompson V Perceived experiences of racism as stressful life events. Community Mental Health Journal. 1996; 32:223–33. [PubMed: 8790965]
9. Smedley, BD.; Stith, AY.; Nelson, AR., editors. Unequal treatment: confronting racial and ethnic disparities in health care. Washington, DC: Institute of Medicine; 2002.
10. Smedley, BD.; Butler, AS.; Bristow, LR. In the nation's compelling interest: ensuring diversity in the health care workforce. Washington, DC: Institute of Medicine; 2004.
11. Walton GH, Cohen GL. A brief social-belonging intervention improved academic and health outcomes of minority students. Science. 2011; 331:1447–51. [PubMed: 21415354]
12. Munford M. Relationship of gender, self-esteem, social class, and racial identity to depression in blacks. Journal of Black Psychology. 1994; 20:157–74.
13. Turner JC, Oaks PJ. The significance of the social identity concept for social psychology with reference to individualism, interactionism and social influence. Br J Soc Psychol. 1986; 25:237–52.
14. Sellers RM, Shelton JN. The role of racial identity in perceived racial discrimination. Journal of Personality and Social Psychology. 2003; 84:1079–92. [PubMed: 12757150]
15. Sellers RM, Caldwell CH, Schmeelk-Cone KH, Zimmerman M. Racial identity, racial discrimination, perceived stress, and psychological distress among African American young adults. Journal of Health and Social Behavior. 2003; 44:302–17. [PubMed: 14582310]
16. Wang, K. [Accessed June 2, 2015, 2015] Racial identity of minority adolescents: a review of empirical research. American Counseling Association VISTAS Online. 2011. Retrieved from http://counselingoutfitters.com/vistas/vistas11/Article_73.pdf. Available at
17. Miller D. Racial socialization and racial identity: can they promote resiliency for African American adolescents? Adolescence. 1999; 34:493–501. [PubMed: 10658857]
18. Azibo D, Allen DF. Some psychological concomitants and consequences of the black personality: mental health implications. Journal of Non-White Concerns in Personal Guidance. 1983; 11:59–66.
19. Cross, WE.; Parham, TA.; Helms, JE. Nigrescence revisited: theory and research. In: Jones, R., editor. African American identity development: theory, research and intervention. 1. Hampton, VA: Cobb & Henry; 1998. p. 3-72.
20. Phelan SM, Dovidio JF, Puhl RM, Burgess DJ, Nelson DB, Yeazel MW, Hardeman R, Perry S, van Ryn M. Implicit and explicit weight bias in a national sample of 4,732 medical students: The medical student CHANGES study. Obesity. 2014; 22:1201–8. DOI: 10.1002/oby.20687 [PubMed: 24375989]
21. Parham T. Cycles of psychological nigrescence. The Counseling Psychologist. 1989; 17:187–227.
22. White, JL.; Parham, TA. The psychology of blacks: an African American perspective. New Jersey: Prentice-Hall; 1990.
23. Arroyo CG, Carmen G, Zigler E. Racial identity, academic achievement, and the psychological well-being of economically disadvantaged adolescents. Journal of Personality and Social Psychology. 1995; 69:903–14. [PubMed: 7473037]
24. Martinez RO, Dukes RL. The effects of ethnic identity, ethnicity, and gender on adolescent well-being. Journal of Youth and Adolescence. 1997; 26:503–16.
25. Phinney J. Ethnic identity in adolescence and adults: review of research. Psychological Bulletin. 1990; 108:499–514. [PubMed: 2270238]
26. Shih M, Sanchez DT. Perspectives and research on the positive and negative implications of having multiple racial identities. Psychological Bulletin. 2005; 131:569. [PubMed: 16060803]
27. Sellers RM, Rowley SA, Chavous TM, Shelton JN, Smith MA. Multidimensional inventory of black identity: a preliminary investigation of reliability and construct validity. Journal of Personality and Social Psychology. 1997; 73:805–15.
28. Sellers RM, Smith MA, Shelton JN, Rowley SA, Chavous TM. Multidimensional model of racial identity: a reconceptualization of African American racial identity. Personality and Social Psychology Review. 1998; 2:18–39. [PubMed: 15647149]

29. Kessler RC, Mickelson KD, Williams DR. The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. Journal of Health and Social Behavior. 1999:208–230. [PubMed: 10513145]

30. Thompson, WE.; Hickey, Jv. Soc Focus. 5th. Boston: Pearson; 2005. Social stratification in the U.S. class system; p. 183-187.

31. Heatherton TF, Polivy J. Development and validation of a scale for measuring state self-esteem. Journal of Personality and Social Psychology. 1991; 60:895–910.

32. Purdie-Vauhns V, Steele CM, Davies PG, Ditlmann R, Crosby JR. Social identity contingencies: how diversity cues signal threat or safety for African Americans in mainstream institutions. Journal of Personality and Social Psychology. 2008; 94:615–30. [PubMed: 18361675]

33. Cohen GL, Garcia J. Identity, belonging, and achievement: a model, interventions, implications. Current Directions in Psychological Science. 2008; 17(6):365–9.

Table 1

Characteristics of the study sample

***n* = 243**	***n* (%)**
Gender	
Female	160 (65.8)
Male	83 (34.2)
Born in the USA[a]	
Yes	173 (71.2)
No	67 (27.6)
Children	
Yes	16 (6.6)
No	226 (93)
Age	
18–24	157 (65)
25–35 or older	84 (35)
Relationship status	
Not in a relationship	133 (54.7)
In a relationship	110 (45.3)
Family income	
Low-middle ($10,000–$74,999)	122 (50.2)
Upper-middle ($75,000–$249,999)	85 (35)
Upper ($250,000–$500,000)	36 (14.8)

[a]Results did not differ when controlling for US-born and it did not interact with the predictor variables

Table 2

Regression coefficients for the effects of everyday discrimination and racial identity on self-reported depression, anxiety, fatigue, perceived stress, and state self-esteem (controlling for gender, age, and socioeconomic status)

	Depression Coeff (SE)	Anxiety Coeff (SE)	Fatigue Coeff (SE)	Perceived stress Coeff (SE)	State self-esteem Coeff (SE)
Upper-middle class (with upper class as the reference group)[a]	0.23 (1.06)	1.66 (1.09)	1.54 (1.06)	−0.02 (0.07)	0.08 (0.07)
Lower-middle class[b]	1.31 (0.91)	1.83^{+} (1.95)	1.46 (0.91)	−0.0002 (0.06)	0.08 (0.06)
Age	0.30 (0.55)	0.71 (0.57)	1.28* (0.56)	0.03 (0.04)	0.01 (0.03)
Gender (with female as the reference group)	0.82 (0.69)	−0.29 (0.71)	−1.24^{+} (0.70)	−0.01 (0.04)	0.02 (0.04)
Everyday discrimination	2.90** (0.59)	2.56** (0.61)	1.76** (0.60)	0.17** (0.04)	−0.17** (0.04)
Racial identity	2.40** (0.74)	1.92* (0.76)	0.90 (0.75)	0.10* (0.05)	−0.11* (0.05)
Racial identity × everyday discrimination	1.61* (0.62)	0.73 (0.64)	0.62 (0.63)	0.07^{+} (0.04)	−0.09* (0.04)
R^2	0.16**	0.11**	0.004**	0.10**	0.11**

The pattern or significance of results did not change when controlling for percentage of Black/African American students

** $p < 0.01$;

* $p < 0.05$;

$^{+}$ $p < 0.10$

[a] Previous research suggests that class may affect psychological well-being; thus, it is included as a covariate. However, it is not central to the goals of this paper

Table 3

Upper and lower 95% confidence intervals for the effects of everyday discrimination and racial identity on self-reported depression, anxiety, fatigue, perceived stress, and state self-esteem (controlling for gender, age, and socioeconomic status) through acceptance

	Depression	Anxiety	Fatigue	Perceived stress	State self-esteem
	95 % CI Coeff (SE)	95 % CI Coeff (SE)	95 % CI Coeff (SE)	95 % CI Coeff (SE)	95 % CI Coeff (SE)
Indirect effect of racial identification at low everyday discrimination	CI [−0.65, 0.92]	CI [−0.33, 0.61]	CI [−0.28, 0.54]	CI [−0.03, 0.05]	CI [−0.07, 0.04]
	0.18 (0.40)	0.10 (0.24)	0.09 (0.20)	0.01 (0.02)	−0.01 (0.03)
Indirect effect of racial identification at high everyday discrimination	CI [0.46, 2.47][a]	CI [0.24, 1.60][a]	CI [0.19, 1.47][a]	CI [0.02, 0.14][a]	CI [−0.16, −0.03][a]
	1.35 (0.52)	0.75 (0.33)	0.66 (0.31)	0.07 (0.03)	−0.09 (0.03)
Index of moderated mediation (indirect effect of product term)	CI [0.02, 1.14][a]	CI [0.03, 0.72][a]	CI [0.01, 0.64][a]	CI [0.001, 0.06][a]	CI [−0.07, −0.0002][a]

The pattern or significance of the results did not change when controlling for percentage of Black/African American students

[a]95 % confidence interval does not include zero