Perceived racial microaggressions and psychological well-being among African American college students

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PERCEIVED RACIAL MICROAGGRESSIONS AND PSYCHOLOGICAL WELL-BEING
AMONG AFRICAN AMERICAN COLLEGE STUDENTS

by

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Abstract

The purpose of this study was to examine the relationships among perceived racial microaggressions, social support, and indicators of psychological well-being in a sample of 155 African American college students from a stress and coping perspective. Perceived racial microaggressions were associated with greater symptoms of anxiety and depression. However, life satisfaction did not account for this relationship, as expected. Two forms of social support, general social support and social support matched for racial situations, were tested as buffers of the effects of perceived microaggressions on psychological outcome variables within a regression framework. The buffering model, which predicted that social support would interact with perceived racial microaggressions such that individuals with high levels of social support would be protected from the harmful effects of microaggressions, was not supported for either social support variable.
Racial Discrimination and Microaggressions

Racism has an insidious influence on the mental health of its victims (Carter, 1994). Many people of the dominant culture in the United States today, namely European Americans, will claim they are not racist. In fact, Norton (2011) demonstrated that beginning in the 2000s, European Americans perceived anti-White bias to be more prevalent than anti-Black bias – the authors attributed this phenomenon to an overestimation of the progress made toward racial/ethnic equality among European Americans. Furthermore, European Americans endorsed higher anti-White bias than anti-Black bias, indicating that they believed a new inequality existed at their expense (Norton, 2011). Unconscious racism has been studied in the past through implicit association research. For example, Duster (2008) argued that many people demonstrate implicit negative associations (i.e. related to crime and hiring decisions) toward racially stigmatized groups, such as African Americans.

“Discrimination can be defined as the differential treatment of individuals, based on their membership in a particular group” (Baumeister & Finkel, 2010, p. 343). Individuals may discriminate against others based on perceived ethnic group, phenotype, age, sexual identity, gender, ideology, or for other reasons. Discrimination does not always consist of blatant exclusion, but may also take on subtle forms (Baumeister & Finkel, 2010). “Racial microaggressions are subtle statements and behaviors that unconsciously communicate denigrating messages to people of color” (Nadal, 2011, p. 470). Microaggressions are often based on an implicit belief that an individual possesses certain traits or will behave in a certain way derived from stereotypes or unfounded assumptions.

A meta-analysis conducted by Paradies et al. (2015) examined psychological outcomes from 293 studies assessing exposure to racism and discrimination. Depression was the most
commonly reported mental health outcome and was reported in 37.2% of articles. Anxiety was reported in 14.4% of articles and life satisfaction was reported in 8.4% of articles as outcomes of racism and discrimination. The authors found the relationship between racism and mental health to be stronger than the relationship between racism and physical health. Age, sex, birthplace and education level were not found to moderate the effects of racism on health. The overall effect size of racism’s effect on mental health was $r = -.23$. For depression, the effect size was $r = -.21$, for anxiety, $r = -.24$, and life satisfaction demonstrated an effect size of $r = -.16$. (Paradies et al., 2015)

Banks, Kohn-Wood, & Spencer (2006) found perceived discrimination to be directly related to symptoms of depression and anxiety in a sample of 570 African American respondents. Soto, Dawson-Andoh, and BeLue (2011) studied the frequency of race based and non-race based discrimination experiences and Generalized Anxiety Disorder (GAD) in a large sample of African Americans (3570), Afro Carribeans (1438), and non-Hispanic Whites (891) from the National Survey of American Life. The authors discovered that experiencing race-based discrimination was related to significantly greater odds of reporting lifetime GAD for African Americans only (Soto et al., 2011).

Discrimination may also have an impact on the incidence of substance use in African Americans. One research study revealed that perceived discrimination was associated with more willingness to use drugs and with increased drug use five years later in African American adolescents (Gibbons et al., 2010). Brody, Kogan, and Chen (2012) found substance use to increase longitudinally (after 2.5 years) in African American male adolescents who reported discrimination. Bennett et al. (2005) studied the effect of perceived racial and ethnic harassment on tobacco use in a sample of 2129 African American college students. The results revealed that
individuals perceiving racial and ethnic harassment were twice as likely to use tobacco daily compared with those who reported no harassment experiences (Bennett et al., 2005). Furthermore, Clark, Salas-Wright, Vaughn, and Whitfield (2015) discovered that elevated levels of discrimination were related to increased risk for depression, anxiety, alcohol-use disorder, and illicit drug-use disorder among a sample of African American and Caribbean Blacks (N=4,462).

Helm (2013) measured the relationship between racial/ethnic microaggressions, self-esteem, and depressive symptomology in a sample of 234 African American college students. Statistically significant positive correlations were found between racial/ethnic microaggressions and depression scores \( r = .62 \) and depression classifications \( r = .56 \). A significant positive relationship was also found between racial/ethnic microaggressions and self-esteem \( r = .21 \).

Experiencing racial/ethnic discrimination is harmful to the mental health of African Americans, via psychological and physiological pathways, as well as through unfavorable self-evaluation, due to the acceptance of widespread societal negative stereotypes (Williams & Williams-Morris, 2000). More recently, racial microaggressions directed towards African Americans have been found to create psychological distress and lead to mental health disparities (Constantine, 2007; Gómez, 2015; Torres, Driscoll, & Burrow, 2010). Indeed, microaggressions may do more harm to African American individuals in higher education settings today than blatant racism (Robinson-Wood et al., 2015; Torres et al., 2010). Though the extant research supports a link between racial microaggressions and psychological adjustment, less is known about the mechanisms through which racial microaggressions may affect psychological adjustment.
Stress and Coping Theory

Cohen & McKay (1984) explained that a stressor or stressful event has the ability to elicit a stress appraisal, where an individual must evaluate the correct response to a given stressor. Lazarus (1993) distinguished between appraisal - evaluation of the significance of an event to one’s well-being, and coping - one’s thoughts and efforts to manage the demands of stressor. Studies of environmental stress focus on an event that taxes one’s ability to cope or on one’s response to stress that is symptomatic of mental or physical overload (Cohen, Janicki-Deverts, & Miller, 2007). Events that one perceives as stressful often produce negative affect or psychological stress and are associated with depression, cardiovascular disease, HIV/AIDS, and cancer (Cohen et al., 2007). Evidence for a causal link between stress and disease risk is supported to the extent that consistent observational and other laboratory research studies are able to support such a hypothesis (Cohen et al., 2007). Lazarus (1993) clarified that one’s coping response will vary with the requirement of the specific threat and distinguishes between problem- and emotion-focused coping.

Previous research has highlighted the impact of racial and ethnic microaggressions on mental health from a stress and coping perspective (e.g., Torres et al., 2010). Lazarus and Folkman (1984) explained that when individuals have insufficient resources to deal with racism-related transactions, their well-being is threatened. Sue, Capodilupo, and Holder (2008) expounded that racial microaggressions emotionally drain, exhaust, and harm Black students. Harrell (2000) pointed to the relevance of stress theory in the study of racism, where the environment affects individual functioning and well-being, potentially through mediators of stress such as support resources or coping options. The present study conceptualized the effects
that racial microaggressions may have on mental health through the stress and coping perspective.

**Stress and Coping Theory and Social Support**

In stress and coping theory, mental processes in response to stress can be broken down into primary and secondary appraisals. A primary appraisal is an evaluation of whether an event is a threat (Lazarus & Folkman, 1984). If someone experiences a microaggression, he or she may think, “This person is treating me differently because I am a person of color.” Sue et al. (2007) described the dilemma that a victim of microaggressions experiences. First, one must determine whether a microaggression has occurred and then must decide if and how to respond. This process is akin to the appraisal process described in stress and coping theory. People of color may experience a “catch-22” when deciding whether to respond with anger or to suppress their emotional response to a microaggression (Sue et al., 2007). Either response may have negative consequences on an individual (Sue et al., 2007), thus, individuals that are somehow able to cope with such a situation will be better off.

A secondary appraisal involves the evaluation of one’s ability to cope with an event based on available social or personal resources (Lazarus & Folkman, 1984). Lazarus and Folkman (1984) hypothesized that a more negative appraisal may lead to greater emotional distress. A negative secondary appraisal might be “I can’t handle this sort of treatment from others and no one can help me deal with it.” Lakey and Cohen (2000) hypothesized that a secondary appraisal may be less threatening and lead to less severe emotional reactions if one believes that one has caring people to turn to for help (e.g., social support).

Social support may protect individuals from the harmful effects of environmental stress on health and/or well-being (Cohen & McKay, 1984). The stress buffering hypothesis of social
support posits that an individual will suffer negative health consequences after encountering a psychosocial stressor if the individual has little or no social support (Cohen & McKay, 1984). For individuals with stronger support systems, however, the negative effects of such a stressor will be reduced or eliminated (Cohen & McKay, 1984). The stress buffering hypothesis posits statistical moderation in that social support may weaken or reverse the effect of perceived discrimination on well-being (Kenny, 2015). The effect of the predictor variable on the outcome variable for a given value of a moderator is known as the simple effect (Kenny, 2015). The present study sought to determine whether the level of one’s social support determines if racial and ethnic microaggressions would influence one’s mental health in a harmful manner.

**Social Support as a Potential Protective Factor**

Not all African American individuals who experience a microaggression as a stressor will develop negative mental health outcomes. Resilience is a complex concept that is often ascribed to individuals who seem to have few adverse developments following stressful adverse situations that lead some individuals to develop social and psychological problems (Stepteau-Watson, 2014). Resilient individuals are resistant to stress such as a racially motivated insult or invalidation because they tend to use resources to cope with an adverse experience, (Owens, 2002). Resilience is likely not a single trait possessed by an individual, but is conceptualized as pathways that can result from interactions of multiple genetic and environmental factors on both distal and proximal levels that form either circumstantial or chronic resilience dependent on context (Panter-Brick & Leckman, 2013). Research on the prevention and treatment of negative psychological outcomes includes the identification of potential resources that promote the facilitation of protective processes (Masten, 2001). Rutter (1987) described protective processes as “factors that counter risk, when the process involves a change of life trajectory from risk to
adaptation, and when the mechanisms of protection seem to differ from those of vulnerability” (p. 329). A protective factor will therefore reduce an individual’s risk of developing a psychological problem in response to a stressful adverse experience.

Although microaggressions are related to poor mental health outcomes, certain protective factors may mitigate the relationship between race-related stress and microaggressions, namely social support. Rutter (1987) recommended that research on protective factors focus on mechanisms involved in protective processes that reduce the impact of risk. One of the ways in which a protective factor might reduce the impact of stress and adversity is by promoting “self-efficacy through the availability of secure and supportive personal relationships” (Rutter, 1987, p. 329). Social support has been shown to buffer the relationship between stress and negative health outcomes (Clark, 2003; Seawell, Cutrona, & Russell, 2012). Brondolo et al. (2009), in their literature review on coping with racism, found that social support was related to participation in social activities, which may lead to positive mental health outcomes.

In another study general social support was found to buffer the effects of psychological demands brought upon by working conditions on anxiety and depression (Plaisier et al., 2007). In this longitudinal sample of 2,646 working men and women, social support protected against the occurrence of depressive and anxiety disorders (Plaisier et al., 2007).

Seawell, et al. (2012), performed two analyses to investigate whether general social support or social support for racial situations moderated the relationship between experienced discrimination and depression. To examine social support tailored to coping with racial discrimination, the authors used Boyce’s (1996) Satisfaction Score from the Social Support Questionnaire for Racial Situations (Seawell et al., 2012). Seawell et al. (2012) found that general social support did not moderate the relationship between experienced discrimination and
depression, but that social support matched for racial situations decreased depressive symptoms over time if support increased in the same time-period. Therefore, social support matched for racial situations was expected to buffer the relationship between perceived microaggressions and well-being in the present study. Based on the stress buffering hypothesis, it was likely that individuals with more social support would experience less detrimental psychological outcomes than individuals with less social support.

There is also evidence that social support is related to health indicators. For example, Clark (2003) found that social support buffered the effects of perceived racism on systolic and diastolic blood pressure changes in a sample of 64 African American college students. Clark (2003) found that the quantity and quality of social support interacted with perceived racism to predict blood pressure changes. At high levels of perceived racism, high social support was associated with an increase in blood pressure. In contrast, among individuals with low levels of perceived racism, social support was related to lower blood pressure (Clark, 2003). Clark (2003) argued that seeking support from other individuals who have experienced similar race-related incidents may foster discussion or rumination about said experience, which could explain why high levels of social support actually exacerbated the effects of perceived racism. Clark’s interpretation of his findings is consistent with results from another study in which Starr and Davila (2008) demonstrated that co-rumination among adolescent girls may lead to depressive symptoms in certain situations.

Watkins (2012) measured perceived microaggressions, student adjustment, and coping in a sample of 249 Black college students. The author found that availability of and satisfaction with social support were related to greater adjustment, a variable related to psychological health.
outcomes. However, social support was not found to buffer the negative effects of perceived microaggressions on college student adjustment. (Watkins, 2012)

Prelow, Mosher, and Bowman (2006) examined social support as a potential mediator and moderator of the relationship between perceived discrimination and both life satisfaction and depressive symptoms. The authors found perceived discrimination to be positively related to depressive symptoms and negatively related to life satisfaction. Mediational models were supported: Individuals who had experienced more discrimination had less social support, which in turn led to greater depressive symptoms and less life satisfaction. Social support was not found to moderate the effects of perceived discrimination on depressive symptoms and life satisfaction. However, the authors postulated that social support did not act as a buffer because social support was not matched to the needs elicited by the experience of discrimination. (Prelow et al., 2006)

One possible explanation for why social support has not been found to protect those who have experienced stress from negative outcomes in some studies may be because it is not often considered in the context of the stressful experience. Experiences of microaggressions or discrimination are unique occurrences; the ability to cope with and recover from such experiences may require specific types of support from other people. According to matching theory (Gore & Aseltine, 1995), it may be helpful to match a protective factor to the context. In the present research study, social support was matched to race-related incidents of prejudice or discrimination. By determining whether an individual perceives that he/she has people to talk to about racial incidents, social support tailored to racial situations was expected to display a buffering effect on the relationship between racial microaggressions and mental health outcomes. Brondolo (2009) reasoned that such a social support network would nurture a sense of safety and
inclusiveness by teaching an individual targeted by racism that others have experienced discrimination as well.

**Life Satisfaction**

Previous research had also provided evidence that discrimination affects life satisfaction (Driscoll, Reynolds & Todman, 2014) and that life satisfaction in turn may affect psychological adjustment (McKnight, Huebner, and Suldo, 2002). Driscoll et al. (2014) surveyed 247 African American adults and discovered discrimination-based race-related stress to be significantly correlated to lower life satisfaction. Furthermore, Fergusson et al. (2015) found that life satisfaction was significantly associated with depression, anxiety, and substance use problems among young adults. Similarly, Zullig et al. (2001) found cigarette smoking, chewing tobacco, marijuana, cocaine, regular alcohol use, binge drinking, injection drug, and steroid use were significantly associated with life satisfaction. Additionally, Saharinen et al. (2014) demonstrated that life dissatisfaction predicted poor health-related quality of life in the general population.

There is also support that life satisfaction may be the mechanism through which stressful events such as microaggressions affect mental health outcomes. McKnight et al. (2002) found support for life satisfaction as a partial mediator of stressful life events and both internalizing and externalizing behavior in adolescents. The authors also found stressful life events to explain unique variance for life satisfaction beyond the variance explained by personality variables (McKnight et al., 2002). Taken together, these studies indicate that life satisfaction may mediate the effects of discrimination-based stress such as microaggressions on mental health.

**Extant Literature on Racial Microaggressions**

Perpetrators of microaggressions have been known to challenge their target’s conviction that a statement was racially motivated (Sue, 2010). Perpetrators of microaggressions are of the
dominant culture and impose microaggressions onto marginalized or devalued groups (Sue, 2010). Discrimination can also occur at an institutional level, e.g., when elected officials propagate racist ideologies. Discrimination occurring at both individual and institutional levels influences the health of minority group members (Gee, 2008).

There are three forms of microaggressions: microinsults, microassaults, and microinvalidations. According to Sue (2010), microinsults and microinvalidations are often unconscious, and microassaults are often conscious acts of racially motivated aggression. Several themes emerged as a result of Sue et al. (2007)’s research efforts to compile a taxonomy of racial microaggressions. One theme, a microinvalidation, is *Alien in One’s Own Land*: Someone of European descent asks someone who appears to be of Hispanic, Asian, or other out-group descent, “Where are you from?” or comments, “You speak good English.” The implicit message in the previous examples is that the targeted individual is not American because the individual looks foreign. An example of a microinsult is *Criminality/Assumption of Criminal Status*. For example, a European American teacher clutches his/her purse or wallet as an African American student passes in the hallway – the implicit message here is that an African American individual is dangerous regardless of age, intelligence, or academic performance (Ford, Scott, Moore & Amos, 2013). Though such situations may occur in a subtle manner, these microaggressions do have an impact on their recipients.

Racism is rarely limited to one isolated incidence, and remembering having experienced several microaggressions in the past year likely serves to remind African Americans of current and historic societal racism. Feagin & Sykes (1994) stated, “…[African Americans] live lives of quiet desperation generated by a litany of daily large and small events that, whether or not by design, remind [African Americans] of our ‘place’ in American society” (p. 23). Themes of
microaggressions other than those represented in Sue et al.’s (2007) taxonomy have emerged and been investigated. For example, in a moderated-mediation model among highly achieving African Americans, ‘Underestimation of Personal Ability’ was related to greater perceived stress after one year, which was associated with depressive symptoms (Torres et al., 2010).

Of the three forms of microaggressions, a microassault is most similar to old-fashioned racism. For example, a perpetrator of a microassault intends to harm another individual by using racial slurs, refusing to serve an individual on the basis of race, or by displaying insignia of hate groups (Sue et al., 2008). Such outwardly hateful messages and race-based violence are less socially acceptable in present day society (Nadal, 2011). The forms of microaggressions that are less visible and more subtle are called microinsults and microinvalidations. Mercer, Zeigler-Hill, Wallace, and Hayes (2011) described three types of microinvalidations: assumed universality of Black experiences (asking an African American individual to speak for his or her entire race), denial of individual racism (or color-blindness), and the myth of meritocracy (an individual’s status is primarily due to one’s efforts and not a result of racial discrimination). Nadal (2011) explained that although committers of microaggressions do not consciously believe that they are racist, their prejudices and biases may occur in a more subtle manner. Nevertheless, racial/ethnic microaggressions are inexorably tied to racial discrimination.

An example of a microinsult is the assumption that people of color are intellectually inferior to the dominant culture. Another example of a microinsult is ascribing second-class citizenship to an African American individual. The assumption that Black individuals are criminals is also a microinsult. An example of another type of microinsult is the assumption that White cultural values are preferred over Black cultural values. (Mercer et al., 2011)
Conditional Indirect Effect of Social Support

Torres and Taknint (2015), who performed a moderated mediation analysis in a sample of 113 Latino adults, demonstrated an example of a “first stage” moderated mediation model in the literature. The authors sought to determine how ethnic microaggressions contribute to Latino mental health, hypothesizing that posttraumatic stress symptoms would mediate the relationship between ethnic microaggressions and depression. Furthermore, the authors hypothesized that the indirect effect would be conditional on ethnic identity and self-efficacy. The research hypotheses were confirmed; both ethnic identity and self-efficacy moderated the hypothesized mediational effect, such that the conditional indirect effects were most robust in Latino adults that reported low ethnic identity and low self-efficacy. (Torres & Taknint, 2015)

Social support may have a similar indirect effect on the relationship between perceived racial microaggressions and mental health outcomes through life satisfaction.

Hypotheses and Research Questions

There are a dearth of research studies that have examined specific potential protective factors that may buffer the effects of perceived racial microaggressions on African American college students’ mental health (depression, anxiety, and substance use). The present study examined the relationship between perceived experiences of racially motivated microaggressions toward African American college students in the past year and assessments of their current mental health. Determining whether social support or social support matched for racial incidents reduce the negative effects of perceived racial microaggressions on mental health outcomes in African American college students can benefit such students.

Life satisfaction, as noted above, was predicted to mediate the relationship between racial microaggressions and mental health outcomes (i.e., anxiety, depression, substance use).
Additionally, social support and social support matched to racial situations was predicted to interact with perceived racial microaggressions, moderating the path from microaggressions to life satisfaction as well as the path from microaggressions to mental health outcomes.

In the current study, it was hypothesized that perceived racial microaggressions would be related to negative mental health outcomes and inversely related to life satisfaction. Furthermore, life satisfaction was expected to mediate the relationship between perceived microaggressions and mental health outcomes, such that life satisfaction would protect individuals against negative health outcomes. Additionally, it was expected that general social support and social support matched for racial situations would moderate the mediational pathway or indirect effect, as well as the pathway from perceived microaggressions to life satisfaction.

Social support and/or social support matched to the experience of race-related incidents was expected to moderate the effect of perceived racial microaggressions on life satisfaction, such that participants with more social support would experience greater life satisfaction than participants with less social support if both groups of individuals had experienced racial microaggressions within the past year. According to this hypothesized model, individuals who perceived microaggressions and who reported greater general social support or satisfaction with social support for racial situations would experience greater life satisfaction than individuals who perceived microaggressions but did not report that they had social support or that they were satisfied with people they could turn to for support in racial situations. These potential moderators were also expected to moderate the direct path between perceived microaggressions and mental health outcome variables, such that individuals with greater social support would experience more positive mental health outcomes in comparison to individuals with less social support after both groups of individuals experienced racial microaggressions in the past year. A
moderated mediation model was therefore hypothesized in the current study. The model was designed to test conditional indirect effects regarding the ability of a moderator to influence a mediational pathway (Hayes, 2012; Preacher, Rucker, & Hayes, 2007). Preacher et al. (2007) outlined methods for conducting analyses of conditional indirect effects, commonly known as moderated mediation effects.

Methods

Procedures

The principle investigator received approval from the Institutional Review Board at the University at Albany, State University of New York to collect and to conduct analyses of these data. Participants were recruited through the Psychology Department's Research Pool Office. The participants were told that the study involved filling out multiple questionnaires regarding past experiences, personal health and wellness, and demographic information. Informed consent was obtained via the confidential online survey program used to administer the questionnaires; participants age 18 and older were asked to read the informed consent and to select ‘yes’ to continue with the survey if they were in agreement. Students under the age of 18 were allowed to participate in studies with written parental permission, which was obtained prior to the time of data collection via a signed parental consent form.

Participants

Although data were collected from 219 students, the current study was based on a subset of 155 African American college students who met the principal investigator’s inclusion criteria of identifying themselves as being of African American heritage. 103 females and 50 males (2 participants did not report any gender) participated in the present study. In the case of notable discrepancy of sample sizes, Box’s Test of Equality of Covariance Matrices may be used to test
the homogeneity of variance-covariance matrices (Tabachnick & Fidell, 2013). Box’s $M$ test (5.12) was not significant, $p = .546$, indicating that the observed covariance matrices of the dependent variables were equal across genders. The statistic that results from Box’s $M$ is a likelihood ratio test (IBM Knowledge Center, 2011), which compares the goodness of fit between two models (Tabachnick & Fidell, 2013). Chi-square and $t$ tests indicated that females did not significantly differ from males with regard to depressive symptoms ($\chi^2 (1, N = 145) = 1.38, p = .240; t(143) = 1.18, p = .240$), life satisfaction ($\chi^2 (1, N = 149) = .00, p = .991; t(147) = -.01, p = .991$), general social support ($\chi^2 (1, N = 142) = .55, p = .459; t(140) = .74, p = .459$), or social support for racial situations ($\chi^2 (1, N = 148) = .06, p = .800; t(146) = .25, p = .800$). However, female college students scored 1.42 points higher on the Overall Anxiety Severity and Impairment Scale (OASIS; Norman et al., 2011), $\chi^2 (1, N = 147) = 4.48, p < .05; t(145) = 2.136, p < .05$.

Most of the participants identified as heterosexual (91.5%), whereas the remaining participants identified as sexual minorities (Bisexual, Homosexual/Gay/Lesbian, or Unsure/Questioning); two participants did not report a sexual orientation. Participants were aged 17-23 ($M = 19$) and were recruited through the research subject pool at the University at Albany. Data were collected in survey format via a web-based provider.

Chi-square and $t$ tests indicated that students with complete data ($N = 135$) did not significantly differ from those with incomplete data ($N = 20$) with regard to gender ($\chi^2 (1, N = 153) = .01, p = .914; t(151) = -.11, p = .914$), age ($\chi^2 (1, N = 154) = .02, p = .885; t(152) = -.15, p = .885$), class year ($\chi^2 (1, N = 155) = .42, p = .515; t(153) = .65, p = .515$), sexual orientation ($\chi^2 (1, N = 153) = 3.48, p = .062; t(151) = 1.88, p = .062$), first parents’ education level ($\chi^2 (1, N$
= 155) = 1.93, \( p = .164 \); \( t(153) = -1.40, p = .164 \), or second parents’ education level (\( \chi^2 (1, N = 155) = .18, \ p = .668 \); \( t(153) = -.43, \ p = .668 \)).

Measures

**Racial microaggressions.** The Inventory of Microaggressions against Black Individuals (IMABI; Mercer et al., 2011) is a scale that was developed to assess less overt microaggressions that are not as often studied by other modern measures of race-related experiences. The items assess whether Black individuals have experienced *microinsults* and *microinvalidations* in the past year (e.g., “I was made to feel that my achievements were primarily due to preferential treatment based on my racial/ethnic background”). Response choices range from (0) *This has NEVER HAPPENED TO ME* to (4) *This event happened and I was EXTREMELY UPSET*. The scale’s 14 items had a high estimate of internal consistency (\( \alpha = .94 \)) and correlated highly with the 45 original items of the IMABI (\( r = .98, \ p < .001 \)) when measured by the authors (Mercer et al., 2011). Mercer et al. (2011) also found evidence to support the validity of the IMABI. In the current sample, Cronbach’s \( \alpha \) was .89.

**Social support.** General social support was measured using Cohen and Hoberman’s (1983) Interpersonal Support Evaluation List (ISEL-12). The ISEL has been demonstrated as a reliable measure of social support, with acceptable convergent validity (Cohen & Hoberman, 1983). Participants answered questions regarding perceived support available to them; half of the 12 items are reverse-coded (e.g., “I feel that there is no one I can share my most private worries and fears with”) and response choices range from (1) *definitely false* to (4) *definitely true* (\( \alpha = .84 \) in the current study).

Boyce’s (1996) five item Social Support Questionnaire for Racial Situations (SSQ-RS) was adapted to measure the level of satisfaction with individuals that participants could turn to
for social support in the case of race-related issues and incidents of racism (e.g., “How satisfied are you with people you can really count on to help you deal with a racial incident?”), with possible responses ranging from (1) very dissatisfied to (6) very satisfied. Seawell et al. (2012) utilized the SSQ-RS in a similar manner, using the Satisfaction Scale from the SSQ-RS to measure social support tailored to racial situations. A Cronbach’s alpha of .88 has been reported for this scale, which has also been found to correlate highly with other social support measures (Boyce, 1996). In the current study, Cronbach’s α was .94.

Depression. Depressive symptoms were assessed with the Center for Epidemiologic Studies Depression Scale – Revised (CESD-R; Eaton et al., 2004). The CESD-R uses 20 items to assess depressive symptoms, asking participants to identify ways they might have felt or behaved in the past week or so (e.g., “I lost interest in my usual activities” and “I wanted to hurt myself”) on a Likert scale ranging from (0) Not at all or Less than 1 day to (4) Nearly every day for 2 weeks. In contrast to the original Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), the CESD-R uses an algorithmic scoring system, which appeared to more accurately identify individuals meeting criteria for depression (Van Dam & Earleywine, 2010). Internal consistency of the CESD-R is high (Cronbach's α = 0.923; Van Dam & Earleywine, 2010). The CESD-R also demonstrated good convergent and divergent validity (Van Dam & Earleywine, 2010). In the current sample, Cronbach’s α was .90.

Anxiety. Anxiety was measured with the abbreviated version of the Overall Anxiety Severity and Impairment Scale (OASIS; Norman et al., 2011), a five item measure (e.g., “In the past week, how often did you avoid situations, places, objects, or activities because of anxiety or fear?”) with responses ranging from (0) never to (4) all the time. Cronbach’s α for the five items of OASIS was found to be .80 as measured by Norman, Cissell, Means-Christensen, and Stein
(2006). Norman, et al. (2006) tested convergent validity for the OASIS against the BSI-18 ($r = .58$), the FQ ($r = .41$), the Spielberger Trait Anxiety Questionnaire ($r = .62$), and the BDI ($r = .51$). One-month test–retest reliability was strong ($\kappa = .82$; Norman, et al., 2006). The items in the brief measure of the OASIS correlated moderately with other measures of anxiety and neuroticism and negatively with a measure of resilience (Norman et al., 2011). Cronbach’s $\alpha$ in the current sample was .87.

**Substance use.** To assess whether an individual has used substances (cigarettes, marijuana, alcohol, other illicit drugs, and prescription stimulants) in the past 30 days, 12 months, or in their lifetime, participants were asked, “When, if ever, have you used…?” Response choices ranged from “Never used” to “Used in the past 30 days” (American College Health Association, 2009; Berg et al., 2011; Wechsler, Rigotti, Gledhill-Hoyt, & Lee, 1998). Current use in the past 30 days was the focus in this study (coded as 1, or 0 if the participant did not currently use the drug). The American College Health Association National College Health Assessment (2005) reported sufficient reliability, construct validity, and measurement validity.

**Life satisfaction.** Life satisfaction was measured using The Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Participants responded to five items rating their satisfaction with life (e.g., “If I could live my life over, I would change almost nothing”) on a scale ranging from (1) *strongly disagree* to (7) *strongly agree*. Favorable psychometric properties were found, with a coefficient alpha of .87 and a two-month test-retest correlation coefficient of .82, representing high internal consistency and high temporal reliability. (Diener, et al., 1985). Diener, et al. (1985) also reported that the scale correlated moderately to highly with other measures of subjective well-being. For the current study, Cronbach’s $\alpha$ was .79.
Power Analysis

G*Power Version 3.1.9.2 (Faul, Erdfelder, Lang, & Buchner 2007) was used to determine the necessary sample size for multiple regression. With a small effect size (f²=.15), α = .05, power = .80, and 11 predictors, the minimum required sample size was 123 participants.

Results

The data were analyzed in IBM SPSS Statistics version 23. Prior to analysis, depression (CESD-R), anxiety (OASIS), perceived racial microaggressions (IMABI), general social support (ISEL), social support for racial situations (SSQ-RS), life satisfaction, and substance use variables were examined for accuracy of data entry, missing values, and fit between their distributions and the assumptions of multivariate analysis. Means and standard deviations for continuous study variables are reported in Table 1. The frequency of substance use among participants is reported in Table 2. Four cases were deleted from further analysis due to univariate outliers beyond the \( p = .001 \) criterion of 3.29, two-tailed.

Examination of histograms, skewness values, and probability plots revealed skewness in the variables IMABI, CESD-R, ISEL, and SSQ-RS. Square root transformations were applied to IMABI and ISEL, since the distributions of these variables were moderately different from normal (Tabachnick & Fidell, 2013). Logarithm transformations were applied to CESD-R and SSQ-RS, due to substantial skewness (Tabachnick & Fidell, 2013). Before transforming a variable with a negatively skewed distribution, it is preferable to reflect a variable by subtracting each score from the largest score in the distribution plus 1, reversing the direction of the variable (Tabachnick & Fidell, 2013). Since ISEL and SSQ-RS were negatively skewed, the variables were reflected during transformation. ISEL and SSQ-RS were then re-reflected following transformation in order to interpret the variables in their original direction (Tabachnick & Fidell,
Following these transformations, the a priori assumption of multivariate normality was met; skewness and kurtosis for the variables of interest were within acceptable limits.

Overview of Analytic Strategies

The hypothesized model posited that the influence of racial microaggressions, as well as the interactions between racial microaggressions and both general social support and social support matched for racial situations would be indirectly associated to negative mental health outcomes through life satisfaction (moderated mediation). The hypothesized model was examined using procedures outlined by Preacher et al. (2007) and Baron and Kenny (1986) to test for mediation and moderation. Baron and Kenny (1986) outlined four conditions that must be met for mediation to occur. First, the predictor variable must be related to the outcome variable. Therefore, the hypothesized model was first tested by analyzing the correlations between racial microaggressions and both depression and anxiety. Linear regression was then used to test the relationships between racial microaggressions and each of the substance use variables. The second condition that must be met for mediation to occur is for the predictor variable to be significantly related to the mediator (Baron & Kenny, 1986). Therefore, the associations between racial microaggressions and life satisfaction were analyzed next. In the next step, life satisfaction must significantly predict the mental health outcome variables (Baron & Kenny, 1986). Finally, the effect of racial microaggressions on the mental health outcome variables must significantly decrease with the addition of life satisfaction to the model (Baron & Kenny, 1986).

For moderated mediation to exist, the interaction of racial microaggressions and social support must predict both life satisfaction and the mental health outcomes outlined above. In other words, the magnitude of the hypothesized indirect effect (mediation) must be conditional
upon the level of the moderator (Baron & Kenny, 1986). Moderation was tested in hierarchical multiple regression, with both the predictor and moderator variables regressed on mental health outcomes in the first hierarchical block and with the interaction of the predictor and moderator variables regressed on mental health outcomes in the second hierarchical block. To minimize the effects of multicollinearity, each predictor variable was centered (Tabachnick & Fidell, 2013), and the interaction term was created from the product of the two centered predictors.

**Linear Regression**

To test the hypothesis that perceived racial microaggressions were negatively associated with mental health outcome variables, associations between perceived microaggressions and depressive and anxious symptoms were examined using linear regression. Linear regression of perceived microaggressions on depressive symptoms revealed a significant positive association, $F(1, 140) = 6.82$, $p < .05$, $R^2 = .05$, Adjusted $R^2 = .04$. This indicated that approximately 4% of the variance in depressive symptomology was explained by perceived microaggressions. Linear regression of perceived microaggressions on anxious symptoms also revealed a significant positive association, $F(1, 144) = 17.01$, $p < .001$, $R^2 = .11$, Adjusted $R^2 = .10$. This indicated that approximately 10% of the variance in anxious symptomology was explained by perceived microaggressions.

Linear regression of perceived racial microaggressions on life satisfaction was not statistically significant, $F(1, 145) = 1.40$, $p = .239$, $R^2 = .01$, Adjusted $R^2 = .00$. Consequently, the second condition for mediation was not met and the second hypothesis that life satisfaction would act as a mediator between microaggressions and mental health outcomes was not supported. In order for an independent variable to have an indirect effect on a dependent variable through a third variable, the independent variable must be related to the third variable. The third
hypothesis was that social support would buffer the indirect relationship between microaggressions and mental health outcomes as well as the relationship between microaggressions and life satisfaction. Since there was no indirect relationship established via life satisfaction and since microaggressions were not related to life satisfaction, the third hypothesis was not supported. Correlation coefficients and significance tests are reported in Table 3. Regression coefficients, significance tests, and confidence intervals are reported in Table 4.

**Logistic Regression**

Direct logistic regression analyses were performed to assess prediction of membership in five binary substance use categories of outcome (cigarettes, model 1; marijuana, model 2; alcohol, model 3; other illicit drugs, model 4; and prescription stimulants, model 5) on the basis of perceived racial microaggressions as the predictor for each outcome. No violation of linearity in the logit was observed for any of these variables.

The Hosmer and Lemeshow test was not significant for model 1: The expected values did not differ significantly from the predicted values, $X^2 (8, N = 145) = 4.24, p = .835$. This demonstrated that the model had a good fit. However, the test of the full model against the constant only model was not statistically significant, $X^2 (1, N = 145) = 1.21, p = .271$. Perceived racial microaggressions did not significantly predict cigarette use in the past 30 days, $OR = 1.41$, Wald-statistic = 1.15, $p = .283$, with 95% confidence intervals from .75 to 2.66. Effect size for the -2 log likelihood model was estimated using Cox & Snell R Square = .008 and Nagelkerke R Square = .032.

The Hosmer and Lemeshow test was not significant for model 2: The expected values did not differ significantly from the predicted values, $X^2 (8, N = 147) = 7.31, p = .503$. This
demonstrated that the model had a good fit. However, the test of the full model against the constant only model was not statistically significant, \( \chi^2 (1, N = 147) = .89, p = .344 \). Perceived racial microaggressions did not significantly predict marijuana use in the past 30 days, \( OR = 1.11, \) Wald-statistic = .89, \( p = .347 \), with 95% confidence intervals from .89 to 1.39. Effect size for the -2 log likelihood model was estimated using Cox & Snell R Square = .006 and Nagelkerke R Square = .008.

The Hosmer and Lemeshow test was not significant for model 3: The expected values did not differ significantly from the predicted values, \( \chi^2 (8, N = 147) = 11.96, p = .153 \). This demonstrated that the model had a good fit. However, the test of the full model against the constant only model was not statistically significant, \( \chi^2 (1, N = 147) = 1.73, p = .189 \). Perceived racial microaggressions did not significantly predict alcohol use in the past 30 days, \( OR = 1.16, \) Wald-statistic = 1.70, \( p = .193 \), with 95% confidence intervals from .93 to 1.45. Effect size for the -2 log likelihood model was estimated using Cox & Snell R Square = .012 and Nagelkerke R Square = .016.

The Hosmer and Lemeshow test was not significant for model 4: The expected values did not differ significantly from the predicted values, \( \chi^2 (8, N = 147) = 5.73, p = .677 \). This demonstrated that the model had a good fit. However, the test of the full model against the constant only model was not statistically significant, \( \chi^2 (1, N = 147) = 1.53, p = .216 \). Perceived racial microaggressions did not significantly predict ‘other’ illicit drug use in the past 30 days, \( OR = 1.89, \) Wald-statistic = 1.37, \( p = .241 \), with 95% confidence intervals from .65 to 5.50. Effect size for the -2 log likelihood model was estimated using Cox & Snell R Square = .010 and Nagelkerke R Square = .077.
The Hosmer and Lemeshow test was not significant for model 5: The expected values did not differ significantly from the predicted values, $X^2 (8, N = 146) = 13.26, p = .103$. This demonstrated that the model had a good fit. However, the test of the full model against the constant only model was not statistically significant, $X^2 (1, N = 146) = 1.11, p = .292$. Perceived racial microaggressions did not significantly predict prescription stimulant use in the past 30 days, $OR = 1.33$, Wald-statistic $= 1.07, p = .302$, with 95% confidence intervals from .78 to 2.27. Effect size for the -2 log likelihood model was estimated using Cox & Snell R Square = .008 and Nagelkerke R Square = .024.

**Hierarchical Multiple Regression**

To test the hypothesis that the social support variables would moderate the significant relationships between perceived racial microaggressions and mental health outcomes (depression and anxiety), four separate standard multiple regression models were tested that included anxiety and depression as dependent variables. Multivariate outliers, exceeding the Mahalanobis’ distance cutoff of $\chi^2 (3) = 16.27, p < .001$, were examined and removed from each analysis.

One hundred forty-two cases were included in the first analysis. Social support for racial situations and perceived microaggressions were simultaneously regressed on anxious symptoms. The first overall model was statistically significant, $F(2, 139) = 7.84, p < .01, R^2 = .10$, Adjusted $R^2 = .08$. The second hierarchical model was not statistically significant, $F$ change $(1, 138) = 2.88, p = .092, R^2$ change $= .02$. The interaction of microaggressions and social support for racial situations was not significant, so social support matched for racial situations did not act as a buffer of the relationship between perceived microaggressions and anxious symptoms.

One hundred thirty-nine cases were included in the second analysis. Social support for racial situations and perceived microaggressions were simultaneously regressed on depressive
symptoms. The first overall model was statistically significant, \( F(2, 136) = 4.56, p < .05, R^2 = .06 \), Adjusted \( R^2 = .05 \). The second hierarchical model was not statistically significant, \( F \) change \( (1, 135) = .00, p = 1.000, R^2 \) change = .00. The interaction of microaggressions and social support for racial situations was not significant, so social support matched for racial situations did not act as a buffer of the relationship between perceived microaggressions and depressive symptoms.

One hundred twenty-five cases were included in the third analysis. General social support and perceived microaggressions were simultaneously regressed on anxious symptoms. The first overall model was statistically significant, \( F(2, 122) = 10.35, p < .001, R^2 = .15 \), Adjusted \( R^2 = .13 \). The second hierarchical model was not statistically significant, \( F \) change \( (1, 121) = .06, p = .814, R^2 \) change = .00. The interaction of microaggressions and general social support was not significant, so general social support did not act as a buffer of the relationship between perceived microaggressions and anxious symptoms.

One hundred twenty-three cases were included in the fourth analysis. General social support and perceived microaggressions were simultaneously regressed on depressive symptoms. The first overall model was not statistically significant, \( F(2, 120) = 2.92, p = .058, R^2 = .05 \), Adjusted \( R^2 = .03 \). The sample size after removal of multivariate outliers likely rendered this analysis underpowered. The second hierarchical model was not statistically significant, \( F \) change \( (1, 119) = .18, p = .672, R^2 \) change = .00. The interaction of microaggressions and general social support was not significant, so general social support did not act as a buffer of the relationship between perceived microaggressions and depressive symptoms.
Discussion

The purpose of this study is to provide a better understanding of why some individuals suffer from depression, anxiety, or substance use after experiencing racially motivated microaggressions while others do not. Several important results emerged from this study. First, these results confirm that the experience of racial microaggressions is relatively common among this sample of African American college students, with 96.1% of this sample reporting having experienced at least one racial microaggression in the past year. Second, the results suggest that racial microaggressions are associated with symptoms of depression and anxiety among this sample of African American college students.

As expected, perceived racial microaggressions were positively associated with both depressive and anxious symptoms. African American college students who perceived more racial microaggressions were more likely to experience higher levels of depressive and anxious symptoms. These findings are consistent with previous research (Banks, et al., 2006; Clark et al., 2015; Paradies et al., 2015; Soto et al., 2011) and emphasize the significance of perceived racial microaggressions as a stressor in the lives of African Americans. Indeed, racial discrimination negatively impacts the mental health of African American individuals.

Contrary to expectations, perceived microaggressions were not significantly related to substance use. The odds of African American college students using substances in the past 30 days did not depend on their perceived experience of racial microaggressions in the past year. It is possible that since the prevalence rates for marijuana and alcohol use were so high among college students in this study (43 and 44.4 percent, respectively), current use did not depend on having experienced discriminatory stress in the past year. In contrast, frequency of use of cigarettes, stimulants, and other illicit drugs (4, 4.6, and 1.3 percent, respectively) was rather
low. It is also possible that an individual may use a substance immediately after experiencing a microaggression and that a shorter period of time between microaggressions and substance use is necessary to detect a relationship between the two variables.

Furthermore, life satisfaction was not correlated with perceived racial microaggressions in this study. There are several reasons why this may be the case. It is possible that the measure of life satisfaction used in the present study did not adequately measure African American college students’ satisfaction with life in this sample. The sample used to develop the measure was different from the sample used in the present study; the measure was initially administered to 176 undergraduates who were enrolled in an introductory psychology course at the University of Illinois (Diener, 1985). Therefore, the sample was initially tested on college students in a different part of the country than The Northeastern United States, where data collection for the present study took place. Though the authors did not report the demographics of the initial sample (Diener, 1985), the entire sample was probably not African American, as in the present study. Cronbach’s alpha for The Satisfaction with Life Scale (Diener, 1985) in the present study is .79, compared to the alpha (.87) found by the researchers who developed the scale. The Satisfaction with Life Scale (Diener, 1985) is five items long. Future researchers wishing to measure life satisfaction as it relates to perceived microaggressions might wish to use a longer measure; scale reliability is reduced if the length of a measure is too short (Tavakol & Dennick, 2011). It is also possible that perceived microaggressions are not related to life satisfaction among African American college students.

The second hypothesis in the present study was that perceived racial microaggressions would have an indirect effect on mental health outcomes through life satisfaction; since life satisfaction was not correlated with perceived microaggressions, this hypothesis was not
supported. Previous research has found life satisfaction to be related to both perceived discrimination (Driscoll et al., 2014) and psychological health outcomes (Fergusson et al., 215; Zullig et al., 2001). Furthermore, McKnight et al. (2002) found life satisfaction to be a partial mediator of stressful life events and internalizing and externalizing behavior in adolescents. However, it is possible that life satisfaction does not mediate the relationship between perceived discrimination and the mental health outcomes measured in the current study. It is also possible that the sample size of this study is not large enough to find a mediational effect.

Depression, but not anxiety, was significantly related to both forms of social support in this study (see Table 3). Loneliness, which is related to social support, has been found to be a unique risk factor for depression (Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006). The observed correlations for general social support and social support for racial situations are nearly identical in this study, $r = -.23$ and $r = -.22$, respectively. Therefore, both forms of social support appear to be related to depressive symptoms in a similar fashion.

**Buffering Hypothesis**

The third hypothesis in the present study was that social support would buffer the pathways of the direct and indirect effects of perceived microaggressions on mental health outcomes. There was no observed indirect effect on mental health outcomes through life satisfaction in the present study. However, the buffering hypothesis of social support was tested on the observed relationships between perceived microaggressions and both depression and anxiety. Contrary to expectation, support was not found for the buffering hypothesis of social support in the current study. There are several reasons why this may be the case. In this study, the social support questionnaire for racial situations (SSQ-RS) was shortened to inquire as to participants’ satisfaction with individuals that they could turn to for support in the case of a race-
related incident. The scale therefore was not used in its original format, which included a measure of the number of individuals one could turn to in the case of a race-related incident (Boyce, 1996). It is possible that the SSQ-RS as utilized in the present study did not adequately capture the level of social support an individual would expect to have in the case of a racial incident. Further validation of the scale as it measures satisfaction with individuals one can count on for support in racial situations is warranted. Another possibility is that this study was underpowered. Though an *a priori* power analysis indicated that the sample size of the study was sufficient to find a small effect in multiple regression, the sample size needed to find a moderating effect may be larger.

Finally, it is possible that social support does not buffer the effects of microaggressions on psychological well-being among African American college students. Although Clark (2003) and Seawell et al. (2012) found support for the stress-buffering model of social support against the detrimental effects of discrimination on the mental health of African Americans, this is not always the case. Sometimes, social support exacerbates the effects of such stress (Brondolo et al., 2009). Further research on the examination of social support matched for racism as a buffering variable is needed.

**Limitations**

The results of the current study should be viewed in light of its limitations. The data were collected at one point in time which limits the extent to which one can draw causal inferences. Additionally, participants completed self-report questionnaires identifying events that they experienced in the past year and responded to questions related to their well-being and substance use in the past month. Self-report questionnaires may be subject to social desirability or memory effects in which participants forget or misremember an experience. This study is also limited by
its retrospective nature. Though experimental studies of discrimination or microaggressions are limited by the impractical and unethical methodology required to observe immediate experiences of discrimination (i.e., an experimental confederate committing microaggressions against participants), there have been prospective studies conducted on the effects of racial discrimination on mental health. For example, Kogan, Yu, Allen, and Brody (2015) conducted a longitudinal study testing the influence of exposure to racial discrimination from ages 16 to 18 on depression at age 20 among male African Americans during the transition to adulthood from adolescence. The authors found that race-related microstressors at age 16 to 18 predicted changes in self-reported depressive symptoms from ages 16 to 20 via racial self-concept as a mediator (Kogan et al., 2015).

The present study is also limited by its sample size. According to Aguinis, Beaty, Boik, and Pierce (2005), the average effect size in tests of moderation is 0.009. Furthermore, testing mediation through indirect effects does not support the pattern of causation implied in this statistical model; it is statistically viable and often may be theoretically reasonable to specify the model in the reverse direction (Preacher & Hayes, 2004).

**Future Directions**

Researchers seeking to determine whether perceived microaggressions have an effect on mental health outcomes among African American college students may utilize a longitudinal design where participants’ most recent experiences of racial or ethnic microaggressions are surveyed so that the experiences may be more salient and reports of the experiences more accurate. Participants could then be surveyed at a later time as to their current well-being in order to more accurately determine if the experiences of subtle discrimination had a lasting effect on
their mental health. Such a design would allow researchers to more accurately determine temporal precedence.

Future researchers should examine other factors that may mediate or moderate the relationship between racial microaggressions and psychological well-being in African American populations. It is possible that factors other than social support are involved in exacerbating or protecting African American individuals from the effects of racial microaggressions. For example, Utsey, Bolden, Lanier, and Williams (2007) examined the role of culture-specific coping in African Americans from high-risk urban communities and discovered that spiritual and collective coping significantly predicted quality of life outcomes beyond the effect of traditional protective factors, i.e. cognitive ability, social support, and familial factors.

The present study adds to the current literature on the negative psychological effects of racial microaggressions. Anxiety and depression appear to be related to perceived racial microaggressions among African American college students. These results suggest that microaggressions may represent a mental health risk to young African American individuals in college. More research should be done on how to reduce racism and on interventions to counteract the negative effects of microaggressions experienced by this population.
References


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http://www.merriam-webster.com/dictionary/discrimination


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Appendix A

Table 1.
Means and standard deviations for continuous study variables

<table>
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<tr>
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<th>M</th>
<th>S.D.</th>
<th>Transformed M</th>
<th>Transformed S.D.</th>
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<tbody>
<tr>
<td>Microaggressions</td>
<td>19.76</td>
<td>12.49</td>
<td>4.18</td>
<td>1.5</td>
</tr>
<tr>
<td>Depression</td>
<td>12.68</td>
<td>10.88</td>
<td>0.97</td>
<td>0.42</td>
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<tr>
<td>Anxiety</td>
<td>6.62</td>
<td>3.84</td>
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<tr>
<td>Life Satisfaction</td>
<td>22.6</td>
<td>6.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support</td>
<td>27.64</td>
<td>6.05</td>
<td>3.51</td>
<td>1.03</td>
</tr>
<tr>
<td>SSQ-RS</td>
<td>26.37</td>
<td>3.85</td>
<td>1.79</td>
<td>0.42</td>
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*Note. N = 151*
Table 2.
Frequency of substance use

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Cigarettes</td>
<td>6</td>
<td>4.0</td>
</tr>
<tr>
<td>Marijuana</td>
<td>65</td>
<td>43.0</td>
</tr>
<tr>
<td>Alcohol</td>
<td>67</td>
<td>44.4</td>
</tr>
<tr>
<td>Stimulants</td>
<td>7</td>
<td>4.6</td>
</tr>
<tr>
<td>Illicit</td>
<td>2</td>
<td>1.3</td>
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*Note. N = 151*
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
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<tbody>
<tr>
<td>1. Microaggressions</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Depression</td>
<td>.22*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Anxiety</td>
<td>.33***</td>
<td>.53***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Life Satisfaction</td>
<td>-.10</td>
<td>-.38***</td>
<td>-.23**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Social Support</td>
<td>.00</td>
<td>-.23**</td>
<td>-.15</td>
<td>.36***</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>6. SSQ-RS</td>
<td>-.07</td>
<td>-.22**</td>
<td>-.12</td>
<td>.15</td>
<td>.43***</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.*  p < .05; ** p < .01; *** p < .001.
Table 4
Linear regression of perceived microaggressions on mental health outcome variables

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>CI (95%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>0.060*</td>
<td>0.023</td>
<td>0.22</td>
<td>.02 : .11</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.836***</td>
<td>0.203</td>
<td>0.33</td>
<td>.44 : 1.24</td>
</tr>
<tr>
<td>Life Satisfaction</td>
<td>-0.388</td>
<td>0.329</td>
<td>-0.10</td>
<td>-1.04 : .26</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01; *** p < .001.
Appendix B. Inventory of Microaggressions against Black Individuals
(IMABI; Mercer, Zeigler-Hill, Wallace, & Hayes, 2011)

Instructions: Events that sometimes occur in the lives of students are listed below. Please read each event carefully. Indicate whether you have experienced each event DURING THE LAST YEAR and how much the event upset you if you experienced it. Please respond using the following scale:

0 – This has NEVER HAPPENED TO ME
1 – This event happened but I was NOT UPSET
2 – This event happened and I was SLIGHTLY UPSET
3 – This event happened and I was MODERATELY UPSET
4 – This event happened and I was EXTREMELY UPSET

1. I was made to feel that my achievements were primarily due to preferential treatment based on my racial/ethnic background.
2. I was treated like I was of inferior status because of my racial/ethnic background.
3. I was treated as if I was a potential criminal because of my racial/ethnic background.
4. I was made to feel as if the cultural values of another race/ethnic group were better than my own.
5. Someone told me that I am not like other people of my racial/ethnic background.
6. Someone made a statement to me that they are not racist or prejudiced because they have friends from different racial/ethnic backgrounds.
7. I was made to feel like I was talking too much about my racial/ethnic background.
8. When successful, I felt like people were surprised that someone of my racial/ethnic background could succeed.
9. Someone assumed I was a service worker or laborer because of my race/ethnicity.
10. I was followed in a store due to my race/ethnicity.
11. Someone reacted negatively to the way I dress because of my racial/ethnic background.
12. Someone asked my opinion as a representative of my race/ethnicity.
13. Someone told me that they are not racist or prejudiced even though their behavior suggests that they might be.
14. Someone told me that everyone can get ahead if they work hard when I described a difficulty related to my racial/ethnic background.
Appendix C. Interpersonal Support Evaluation List  
(ISEL-12; Cohen & Hoberman, 1983)

Instructions: This scale is made up of a list of statements each of which may or may not be true about you. For each statement circle "definitely true" if you are sure it is true about you and "probably true" if you think it is true but are not absolutely certain. Similarly, you should circle "definitely false" if you are sure the statement is false and "probably false" if you think it is false but are not absolutely certain.

1. definitely false  2. probably false  3. probably true  4. definitely true

1. If I wanted to go on a trip for a day (for example, to the country or mountains), I would have a hard time finding someone to go with me.
2. I feel that there is no one I can share my most private worries and fears with.
3. If I were sick, I could easily find someone to help me with my daily chores.
4. There is someone I can turn to for advice about handling problems with my family.
5. If I decide one afternoon that I would like to go to a movie that evening, I could easily find someone to go with me.
6. When I need suggestions on how to deal with a personal problem, I know someone I can turn to.
7. I don't often get invited to do things with others.
8. If I had to go out of town for a few weeks, it would be difficult to find someone who would look after my house or apartment (the plants, pets, garden, etc.).
9. If I wanted to have lunch with someone, I could easily find someone to join me.
10. If I was stranded 10 miles from home, there is someone I could call who could come and get me.
11. If a family crisis arose, it would be difficult to find someone who could give me good advice about how to handle it.
12. If I needed some help in moving to a new house or apartment, I would have a hard time finding someone to help me.
Appendix D. Social Support Questionnaire for Racial Situations
(SSQ-RS; adapted from Boyce, 1996)

The following questions ask about people in your environment who provide you with help or support. Please think of all the people you know, excluding yourself, whom you can count on for help or support in the manner described. Then, indicate how satisfied you are with the overall support you have (on a scale from 1 to 6). If you have no support for a question, still rate your level of satisfaction.

6) Very satisfied  5) Fairly satisfied  4) A little satisfied  3) A little dissatisfied
   2) Fairly dissatisfied  1) Very dissatisfied

1. How satisfied are you with people you can count on to help you feel better after you have experienced a racial incident?
2. How satisfied are you with people you can comfortably talk to about racial issues?
3. How satisfied are you with people you can really count on to help you deal with a racial incident?
4. How satisfied are you with people you can go to for advice on how to handle racial issues?
5. How satisfied are you with people who can help you cope with encounters with persons you perceive as racist?
Appendix E. Center for Epidemiologic Studies Depression Scale – Revised
(CESD-R; Eaton et al., 2004)

Center for Epidemiologic Studies Depression Scale – Revised (CESD-R) Below is a list of the ways you might have felt or behaved. Please check the boxes to tell me how often you have felt this way in the past week or so.

Last Week: Not at all or Less than 1 day = 0
1 – 2 days = 1
3 – 4 days = 2
5 – 7 days = 3

Nearly every day for 2 weeks = 4

1. My appetite was poor.
2. I could not shake off the blues.
3. I had trouble keeping my mind on what I was doing.
4. I felt depressed.
5. My sleep was restless.
6. I felt sad.
7. I could not get going.
8. Nothing made me happy.
9. I felt like a bad person.
10. I lost interest in my usual activities.
11. I slept much more than usual.
12. I felt like I was moving too slowly.
13. I felt fidgety.
14. I wished I were dead.
15. I wanted to hurt myself.
16. I was tired all the time.
17. I did not like myself.
18. I lost a lot of weight without trying to.
19. I had a lot of trouble getting to sleep.
20. I could not focus on the important things.
Appendix F. The Overall Anxiety Severity and Impairment Scale
(OASIS; Norman et al., 2011)

The following items ask about anxiety and fear. For each item, circle the number for the answer that best describes your experience over the past week.

1. How often do you feel anxious?
   0 = Never
   1 = Rarely
   2 = Occasionally
   3 = Frequently
   4 = Constantly

2. When you feel anxious, how intense or severe is your anxiety?
   0 = None
   1 = Mild
   2 = Moderate
   3 = Severe
   4 = Extreme

3. How often do you avoid situations, places, objects, or activities because of anxiety or fear?
   0 = Never
   1 = Rarely
   2 = Occasionally
   3 = Frequently
   4 = All the Time

4. How much does anxiety or fear interfere with your ability to do the things you need to do at work, at school, or at home?
   0 = Not at all
   1 = Mild
   2 = Moderate
   3 = Severe
   4 = Extreme

5. How much does anxiety or fear interfere with your social life and relationships?
   0 = Not at all
   1 = Mild
   2 = Moderate
   3 = Severe
   4 = Extreme
Appendix G. Substance Use
(American College Health Association, 2009; Berg et al., 2011; Wechsler, Rigotti, Gledhill-Hoyt, & Lee, 1998)

1. When, if ever, have you used cigarettes?
   - Never used
   - Used, but not in the past 12 months
   - Used, but not in the past 30 days
   - Used in the past 30 days

2. When, if ever, have you used marijuana?
   - Never used
   - Used, but not in the past 12 months
   - Used, but not in the past 30 days
   - Used in the past 30 days

3. When, if ever, have you consumed at least 5 alcoholic drinks (for men) or at least 4 alcoholic drinks (for women) in a row?
   - Never
   - I have, but not in the past 12 months
   - I have, but not in the past 30 days
   - I have done so in the past 30 days

4. When, if ever, have you used any of the following drugs: Ritalin, Dexedrine or Adderall? Do not include anything you used under a doctor’s orders.
   - Never used
   - Used, but not in the past 12 months
   - Used, but not in the past 30 days
   - Used in the past 30 days

5. When, if ever, have you used any of the following drugs: crack/cocaine, other forms of cocaine, ecstasy (MDMA) and opiate-type prescription drugs (e.g. codeine, morphine, Demerol, Percodan, Percocet, Vicodin, Darvon, Darvocet)? Do not include anything you used under a doctor's orders.
   - Never used
   - Used, but not in the past 12 months
   - Used, but not in the past 30 days
   - Used in the past 30 days
Appendix H. The Satisfaction with Life Scale
(Diener, 1985)

DIRECTIONS: Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number in the line preceding that item. Please be open and honest in your responding.

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Neither Agree or Disagree
5 = Slightly Agree
6 = Agree
7 = Strongly Agree

1. In most ways my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with life.
4. So far I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.
Appendix I. Demographic Questionnaire

1. What is your age? _______

2. Please fill in: In terms of ethnic group, I consider myself to be _______

3. What is your class year?
   - Freshman
   - Sophomore
   - Junior
   - Senior
   - Other (please specify) _______

4. What is your gender?
   - Male
   - Female
   - Other (please specify) _______

5. My ethnicity is
   - Asian or Asian American, including Chinese, Japanese, and others
   - Black or African American
   - Hispanic or Latino, including Mexican American, Central American, and others
   - White, Caucasian, Anglo, European American; not Hispanic
   - American Indian/Native American
   - Mixed; Parents are from two different groups
   - Other (write in) _______

6. How would you describe your sexual orientation?
   - Heterosexual
   - Bisexual
   - Homosexual/gay/lesbian
   - Unsure/questioning
   - Other (please specify) _______

7. What is the highest level of education your first parent attained?
   - Less than high school diploma
   - High school diploma or equivalent (GED)
   - Some college, no degree
   - Post-secondary non-degree award
   - Associate's degree
   - Bachelor's degree
   - Master's degree
   - Doctoral or professional degree (e.g. Ph.D., MD, JD)
   - Don't know
8. What is the highest level of education your second parent attained?
  Less than high school diploma
  High school diploma or equivalent (GED)
  Some college, no degree
  Post-secondary non-degree award
  Associate's degree
  Bachelor's degree
  Master's degree
  Doctoral or professional degree (e.g. Ph.D., MD, JD)
  Don't know
  I was not raised by a second parent