

8-12-2016

The Longitudinal Relationship between Racial Discrimination and Depression in Ethnic Minority College Freshmen: The Potential Moderating Role of Peer and Faculty Support

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THE LONGITUDINAL RELATIONSHIP BETWEEN RACIAL DISCRIMINATION AND
DEPRESSION IN ETHNIC MINORITY COLLEGE FRESHMEN: THE POTENTIAL
MODERATING ROLE OF PEER AND FACULTY SUPPORT

By

ZAHRA MURTAZA

Under the Direction of Winnie Chan, Ph.D.

ABSTRACT

Racial discrimination has been linked to depressive symptoms (Pascoe & Richman, 2009), but only a few studies have explored this relationship longitudinally. This study examines the possible moderating role of faculty and peer support on the discrimination-depression relationship amongst 180 ethnic minority college freshmen. Results of the hierarchical regression indicate that racial discrimination, $\beta = .13, p < .05$, in the first semester of freshman year significantly predicted depressive symptoms in the second semester of freshman year. No interactions were found between discrimination and peer support ($\beta = .06, p > .05$), or between discrimination and two forms of faculty support (faculty interactions, $\beta = .05, p > .05$, and faculty concern, $\beta = -.10, p > .05$). Thus, unlike predicted, peer and faculty support did not serve as protective factors against discrimination-related stress. Future studies should investigate which types of coping most benefit ethnic minority freshmen.

INDEX WORDS: racial discrimination, depression, faculty support, peer support, freshmen,
first-generation

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts

in the College of Arts and Sciences

Georgia State University

2016

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May 2016

DEDICATION

I am indebted to my Ammi, Abbu, younger brother, Yahya, and my grandparents for their constant encouragement, love and prayers. Needless to say, my growth and success is naturally yours, too.

I also appreciate the “rocks” in my life (e.g. friends) who are my second family. I cherish your endless pep talks and support.

This thesis is dedicated to all of my supporters listed above. But I also dedicate this work to all students who have been marginalized in some way. You continue to persevere in the academic terrain despite the barriers you experience – that is beautiful and inspires me to keep writing.

ACKNOWLEDGEMENTS

I am grateful to my advisor, Dr. Winnie Chan, for her help with all stages of this thesis process. I also appreciate the ideas provided by my thesis committee members, Dr. Erin Tully and Dr. Chris Henrich, which assisted me in refining my thesis further. Lastly, I couldn't have made it this far in my academic pursuits without the mentorship and tutelage of all of my teachers, professors and mentors to date, from elementary school to graduate school. Thank you for sharing the beacon of knowledge with me and believing that I too can carry it forward in a meaningful way.

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1 INTRODUCTION

Major depression is a serious public health concern for college students (Blanco et al., 2008). A large national college study of 27,000 college students found that 14.5% of college students attending 2- or 4-year colleges reporting feeling so depressed that they were unable to function (American College Health Association, 2011). While major depression is a serious concern for all college students navigating the stressful developmental stage of emerging adulthood, there is growing evidence to suggest that ethnic minority college students are at higher risk for developing depression than their White counterparts (Mejía & McCarthy, 2010; Mokrue & Acri, 2015; Young, Fang, & Zisook, 2010).

There are several reasons why ethnic minority college students may be at higher risk for developing major depression. Socioeconomic disparities – in particular, the inability to access basic resources - have been found to mediate the relationship between ethnic group identification and depression in ethnic minorities (Plant & Sachs-Ericsson, 2004). Ethnic minority college students and their families often have access to fewer resources and may live in poorer neighborhoods which increase the stress of their daily living, which can contribute to depressive symptoms. Furthermore, ethnic minority college students are more likely to be of first-generation status, which can contribute to a more stressful transition to college (Dennis, Phinney, & Chuateco, 2005). With less support and guidance from family members who have attended college themselves, ethnic minority first-generation college students report feeling a greater burden navigating new challenges such as selecting their major or succeeding in difficult courses on their own (Dennis et al., 2005). Finally, racial discrimination has been consistently linked to depressive symptoms in ethnic minority college students (Arbona & Jimenez, 2014; Nadal et al., 2015; O’Keefe et al., 2015, Wei et al., 2010). Racial discrimination has been widely studied in

ethnic minority individuals and there is now a growing research literature investigating its effects on mental health in college students. However, the longitudinal relationship between racial discrimination and depression is lesser understood, particularly across the freshman year.

It is essential to understand what contributes to depression in ethnic minority college freshmen as stressors experienced during the first year notably contribute to attrition and dropout in college students (Strumpf & Hunt, 1993; Tinto, 1987). For instance, one study found that 75% of attrition occurs in the first two years of college (Tinto, 1987). No study to date has explored the discrimination-depression in ethnic minority college students across different time points in the freshman year. Further, few studies have taken into consideration the unique role first-generation status may play in depression among ethnic minority college students. Most of the research literature defines a first-generation college student as someone who is the first in his or her family to attend college (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996). In comparison to their non-first-generation counterparts, first-generation college students often experience greater stress in their transition to college, particularly in their first year (Terenzini et al., 1996; Zalaquett, 1999). The current study seeks to investigate the longitudinal relationship between racial discrimination and depression in ethnic minority college students across both semesters of freshman year, while considering the potentially unique experience of first-generation students. In addition, the study will explore the potential protective role of campus-based faculty and peer support against racial discrimination.

Although the discrimination-depression link is well established in the research literature (Noh & Kaspar, 2003; Pascoe & Richman, 2009; Torres & Ong, 2010; Williams, Neighbors & Jackson, 2003), the evolution of this relationship throughout college remains understudied due to a lack of longitudinal research in this area. Furthermore, social support has been found to buffer

the effect of discrimination on depression, but research has not examined the influences of social support from within the college institution itself. The aim of the proposed study is threefold: 1) to examine the development of the discrimination-depression relationship within ethnic minority college students across the first year of college 2) to examine the potential impact of first-generation status on the discrimination-depression relationship and 3) to examine which sources of social support would be most beneficial in protecting students from the negative impact of discrimination. In particular, we will examine faculty and peer support, which are sources of support embedded within the college setting.

1.1 Theoretical framework

Social support has been theorized as a protective factor for individuals experiencing stressful life events such as discrimination. According to the stress-buffering model (Cohen & Wills, 1985), social support reduces stress by offering individuals beneficial interpersonal resources. The presence of support from family, friends and members of one's community may help individuals perceive their stress differently, increase knowledge about a problem, offer material support to alleviate stress or contribute to individuals' overall self-esteem and connectedness to a social network (House, 1981). Research on social support suggests that the broader the network of social support, the higher the chance of reducing the negative effects of stressful life events (Keppel-Benson & Ollendick, 1993). Furthermore, there is evidence that a lack of social support is associated with onset or relapse of major depression (Paykel, 1994). This finding suggests that social support from *multiple sources* could prevent negative mental health outcomes resulting from stress, particularly depression.

A review of literature by Cohen and McKay (1984) found that not all types of social support are equally as beneficial across different contexts for individuals experiencing various

life stressors. According to Cohen and McKay's stressor-support specificity model, different stressors require different support mechanisms (e.g. tangible, emotional, etc.), which can be provided through different sources of support (e.g. family, peers, etc.). Furthermore, stressors can be conceptualized as sources of deficits or losses, in which the nature of a loss determines the type of required replacement (Cutrona & Russel, 1990). Thus, in order for social support to be beneficial, the context – including the type of stressor and the type of individual experiencing that stressor – will dictate the type of support needed. In the case of ethnic minority college students, many of whom are first-generation or who come from low-income backgrounds, a lack of awareness about the new college context and lack of academic guidance from parents may necessitate support and guidance from campus-based peers and faculty members.

There is also a need to study depression in college students across time, as there is evidence to suggest that experiences of depression may change across emerging adulthood (Arnett, 2000). A recent study found that while emerging adults reported experiencing higher rates of depression compared to other age groups, on average their depressive symptoms decreased and self-esteem improved over the seven-year period of emerging adulthood (between 18-25) (Galambos, Barker & Krahan, 2006). This decrease in depression over time could be explained by increases in social support (notably in the form of more frequent romantic relationships) and employment success over time (Galambos et al., 2006). However, in this study, depressive symptoms improved faster for participants with highly educated parents, highlighting that these results may not be the same for ethnic minority or first-generation college students. Given that changing social circumstances can contribute to or mitigate depression in emerging adults, it becomes important to understand the role of discrimination, a powerful social experience, on depression in emerging adulthood, a time period when social relationships

become increasingly salient. It is unclear whether or not discrimination at an earlier time point predicts depression in emerging adulthood. While cross-sectional research on this topic exists, there has been scarce investigation of a longitudinal link between discrimination and depression. A longitudinal inquiry of the discrimination and depression relationship in a sample of ethnic minority college freshmen – while exploring the possible protective role of social support – may account for possible causal links between these variables and may elucidate how social support can impact these students who are emerging adults.

1.2 Depression in Ethnic Minority College Students

There is a growing research literature to suggest that ethnic minority college students are at higher risk for developing depression than their White peers. For instance, a study of 1,837 college students at the University of California San Diego found that Asian American college students reported significantly more elevated levels of depression compared to their White peers (Young, Fang & Zisook, 2010). Another study of 168 Mexican college students of migrant and non-migrant backgrounds found that these students reported high levels of depression (55%) compared to an estimate of the general population (Mejía and McCarthy, 2010). Notably, migrant students in this study reported higher levels of depression and anxiety than their non-migrant counterparts when language preference was not held constant. This finding indicates that acculturative stress (as measured by language preference) may be a factor contributing to depression in minority college students. Similarly, a study of a large random sample of 4,700 White, Hispanic, Black and Native American participants found that ethnic minorities reported higher levels of depression than White participants; however, this relationship was mediated by difficulties ethnic minorities experienced in meeting their economic basic needs (Plant and Sachs-Ericsson, 2004). Furthermore, the relationship between ethnic group affiliation and

depression was suppressed by higher interpersonal functioning. Ethnic minorities reported higher interpersonal functioning, a measure of social support quality, which suppressed the relationship between their ethnic group status and depression. Thus, there is growing evidence to suggest that ethnic minority college students are at high risk for developing depression for several reasons, including socioeconomic factors and acculturative stress; however, there is also evidence that social support may uniquely protect this group (Plant and Sachs-Ericsson, 2004).

Amongst the stressors ethnic minority college students experience, racial discrimination is a prominent contributor to depression. Ethnic minority college students often experience increased stress and depression associated with discrimination on account of their racial/ethnic minority status (Cabrera & Nora, 1994; Schmader, Major, & Gamow, 2001). Ethnic minority students studying at predominantly White institutions can be negatively impacted by a lack of relevant support services, actual or perceived racism or negative interpersonal relationships with peers, faculty and academic staff at the university (Fleming, 1984). These negative experiences influence ethnic minority students' perspectives about the academic environment, which can contribute to feelings of isolation and alienation for them as students (Loo & Rolison, 1986).

A study of college students found that Asian and Black college students perceive significantly higher discrimination on college campuses compared to White students (Pieterse, Carter, Evans, & Walter, 2010). The widespread prevalence of perceived discrimination, a deleterious stressor, in the lives of ethnic minority college students makes it important to study its impact on these students' mental health further.

1.3 The Unique Stressors of First-Generation College Students

First-generation college students, who are the first in their families to attend college, are also at risk for experiencing depression during their college career. First-generation college

students are more likely to be racial/ethnic minorities (Terenzini et al., 1996; Young, Fang & Zisook, 2010). In addition to stressors that college students commonly face, such as adaptation to a new academic environment, course and career selection, new living arrangements and associated new responsibilities (Terenzini et al., 1996), first-generation students experience some unique stressors related to their first-generation status. First-generation college students often experience academic and social challenges which their parents are unable to support them with due to a lack of experience in the United States' educational system (Zalaquett, 1999).

Additionally, these students grapple with stressors such as financial hardships, responsibilities towards their families and higher perceived discrimination on account of their racial/ethnic minority status (Pliner & Brown, 1985). Additionally, they often work – part-time or full-time - to support their families and their educational aspirations (Terenzini et al., 1996). Thus, first-generation college students sometimes juggle academic and work responsibilities, in addition to other family obligations. In addition, they often report feeling that their families do not understand the burden these multiple responsibilities place on their academic life, resulting in a lower likelihood of them reaching out to their families for support (Fuligni, Tseng & Lam, 1999).

As a result of these stressors accumulating, first-generation college students report experiencing poorer mental health outcomes during college than their non-first-generation peers. For example, a comprehensive study conducted at a large Southwestern university compared first-generation students' mental health outcomes compared to non-first-generation students' outcomes (Jenkins, Belanger, Connelly, Boals & Duron, 2013). This study found that first-generation college students report significantly higher levels of PTSD, less life satisfaction and less social support than non-first-generation college students. Given that first-generation college students report additional stressors in college and poorer mental health compared to their peers, it

is important to explore the role of first-generation status within our study population of ethnic minority college students. It is possible that first-generation ethnic minority college students are impacted more negatively by racial discrimination than non-first generation ethnic minority college students; therefore, we will explore first-generation status as a predictor in our study as we explore racial discrimination's effects on depression.

1.4 Discrimination as a Source of Stress and a Predictor of Depression

Racial discrimination, conceptualized as a psychosocial stressor, is related to numerous negative mental health outcomes, including depression (Pascoe & Richman, 2009). Discrimination has been defined as “beliefs, attitudes, institutional arrangements and acts that tend to denigrate or deny equal treatment to individuals or groups based on racial characteristics or group affiliation” (Clark, Anderson, Clark, & Williams, 1999). Many studies have highlighted the negative psychological effects of discrimination on racial/ethnic minority individuals (Clark et al. 1999; Flores et al., 2010; Noh & Caspar, 2003; Tummala-Narra, Alegría & Chen, 2012). In a meta-analysis of 139 studies, Pascoe and Richman (2009) documented that those who perceive higher discrimination also report higher stress, which increases one's vulnerability to developing depressive symptoms. The stress that results from continued exposure to discrimination (Clark et al., 1999) can deplete an individual's internal coping resources (Sellers & Shelton, 2003; Williams, Neighbors & Jackson, 2003). Furthermore, individuals may internalize negative feedback about themselves, which can reduce self-esteem and engender hopelessness, helplessness, sadness and demoralization (Allport, 1979; Riggs & Hann, 2009; Rutter, 1988). Stressors such as discrimination which target core aspects of individuals' identities are theorized to contribute to negative mental health outcomes, including depression (Thoits, 1991).

Recent literature has differentiated between overt discrimination and covert discrimination, with the former having become less prominent in the United States in the post-Civil Rights era wherein being outwardly racist is considered less acceptable than it used to be (Nadal, Griffin, Wong, Hamit, & Rasmus, 2014). However, covert discrimination still regularly impacts the lives of racial/ethnic minority individuals, through subtle, unintentional daily events known as “racial microaggressions” (Nadal et al., 2014). These microaggressions are comprised of several different categories ranging from recipients perceiving or experiencing “assumptions of criminality” to “ascriptions of intelligence” to feeling like an “alien in [one’s] own land” (Nadal et al., 2014). These microaggressions often result in the receiving individual feeling markedly different and misunderstood on account of his or her racial/ethnic background. The context of college is important to consider, as research suggests that racial microaggressions that occur in the workplace or school environment may be more detrimental to well-being than those which occur in other environments (Nadal et al., 2014). Racial microaggressions in the college setting can result in students experiencing self-doubt, frustration and isolation from others (Solórzano, Ceja & Yosso, 2000). As a result of these experiences, students often end up engaging in a phenomenon known as ‘racial battle fatigue’ wherein they may feel confused as to whether something was a microaggression or discriminatory experience or not (Solórzano et al., 2000). These continuous, daily, rumination-like mental routines often result in students experiencing depleted cognitive energy, reduced coping and negative mental health outcomes, including depression (Sue et al., 2007).

1.5 Longitudinal Relationship between Discrimination and Depression

While numerous studies have established the link between discrimination and depression in racial/ethnic minorities and in young adults, few studies have explored this relationship

longitudinally. Given that experiences of discrimination and depression (separately) can evolve over time, investigating the longitudinal perspective can elucidate at which time points ethnic minority young adults are most susceptible to discrimination's negative effects. This exploration can then clarify appropriate temporal points of intervention. Because adolescents and young adults become more aware of complex concepts such as race, ethnic identity and discrimination over time due to social and cognitive changes in development, they may report increases in perceived discrimination over time (Inhelder & Piaget, 1958; Phinney, 2003). If ethnic minority college students' perceptions of discrimination really do increase over time, it is important to understand whether depression also subsequently changes over time.

Most studies examining the relationship between discrimination and depression are cross-sectional in design, which does not address the long-term consequences of discrimination. However, some studies have attempted to fill this gap in the literature. For example, a study by Schulz and colleagues (2006) examined the longitudinal association of self-reported everyday discrimination with depressive symptoms and general health in a sample of African American women living in East Detroit over 2 waves (1996 and 2001). This study found that when discrimination increased, symptoms of depression increased and general health status decreased, while controlling for age, education, income, discrimination and health status at baseline. Overall, the results of this study support previous findings that discrimination is significantly associated with depression over time. However, this study has some important limitations and may not relate to the experience of college students experiencing racial discrimination. The study by Schulz et al. (2006) study was conducted in a highly segregated area of Detroit where 37-65% of families live below the poverty line. Individuals from this demographic are already underprivileged socioeconomically and may perceive higher discrimination on account of other

variables besides race, such as perceptions of inequality (note: this study did not specifically measure racial discrimination but studied discrimination broadly). Furthermore, this study only included women participants. These factors make it difficult to extrapolate the findings of this study to males, those of other socioeconomic backgrounds or those living in a more racially diverse setting. Our study will seek to fill these gaps by drawing from a racially and ethnically diverse sample of ethnic minority college students from a large public university.

Similarly, a 3-wave study conducted over the span of 5 years also established a longitudinal link between perceived discrimination and depression in African American adolescents (Brody et al., 2006). Brody et al. (2006) found that increases in discrimination were associated with increases in depression across time. No gender differences were found between changes in girls' and boys' depression outcomes. The association between perceived discrimination and depression weakened when adolescents reported having higher academic achievement, prosocial friendships and nurturing parenting. This finding highlights the important role of social networks in buffering the discrimination-depression relationship, as this relationship was weakened with the presence of supportive parents or extrafamilial adults who could offer support and monitor their children's daily activities (Brody et al., 2006; Luthar, 2006). An interesting finding from this study was that youth from higher SES were more likely to experience increases in perceived discrimination over time. Like the previous study by Schulz et al. (2006), the study by Brody et al. (2006) also focuses on African Americans, but particularly studies the outcomes of African American adolescents.

All of these studies are consistent with previous work which demonstrates that adolescents perceive more discrimination over time, as also evidenced by a longitudinal study of Black, Latino and Asian American high school students (Greene, Way, & Pahl, 2006). However,

these studies investigate the impact of discrimination in participants of different age cohorts. One of these studies focuses on adults, while the other focuses on high school students. No study to our knowledge has explored the longitudinal discrimination-depression link in a sample of ethnic minority college students over the span of freshman year of college. Developmental differences between these age groups may necessitate different forms of contextual support to buffer the discrimination-depression relationship. Furthermore, an increase in general life stress and a heightened awareness of group differences may predict a stronger discrimination-depression link in ethnic minority college freshmen who are emerging adults.

1.6 Social Support

Social support is an important protective factor, which can alleviate the negative effects of discrimination on depression (Ajrouch, Reisine, Lim, Sohn, & Ismail, 2010). According to the stress-buffering model (Cohen & Wills, 1985), social support may reduce stress by offering individuals beneficial interpersonal resources through which they can cope with stressful circumstances. Of the various types of social support, House (1981) defines the four most important ones as instrumental, informational, emotional and appraisal support. While all four of these types of support are important, informational and emotional support are especially valuable to adolescents as they become emerging adults and navigate college (Malecki & Demaray, 2003).

In particular, social support may be incredibly advantageous for ethnic minority college students – including first-generation college students – because it can provide them a buffer against dealing with a stressful new environment on their own (Attinasi, 1989). One study examining the relationship between social support and mental health in a large undergraduate sample discovered that ethnic minority and low-income students were at higher risk of social

isolation. This study also found that undergraduate students with lower quality social support were six times more likely to experience depressive symptoms compared to students with higher quality social support (Hefner & Eisenberg, 2009). Furthermore, a study of first-generation college students (most of whom come from ethnic minority backgrounds) found that these students perceive significantly less instrumental and emotional support from their parents during their transition to college compared to their continuing-generation peers (Sy, Fong, Carter, Boehme, & Alpert, 2011). As a result of this lack of support from their parents, first-generation ethnic minority students report high levels of stress, depression and poor adjustment to college compared to their majority-race or continuing-generation peers whose parents can offer them guidance and important resources during their transition (Jenkins et al., 2013; Pascarella et al. 2004). The knowledge and utilization of several sources of support can bolster ethnic minority college students' transition into college (Stanton-Salazar & Spina, 2003).

To compensate for this gap in support, faculty and peer support can offer key informational and emotional support that ethnic minority (including first-generation) college students may be lacking from their parents in order to transition smoothly. Despite their need for social support, ethnic minority college students are less likely to disclose stressful experiences, amplifying a need for social support naturally embedded *within* the institution itself which can provide the resources they may need to thrive in this novel academic environment (Barry, Hudley, Kelly, & Cho, 2009). Few studies have examined the role of campus-based faculty and peer support on weakening the discrimination-depression relationship, which is a gap in the literature our study plans to fill.

1.6.1 Faculty Support

Faculty support in college has been linked to important college adjustment outcomes for ethnic minority college students. Faculty members can offer students information about transitioning to college, can answer questions related to major selection or career planning, and can serve as a symbolic representation of integration within the institution, all of which are beneficial to ethnic minority college students (Loo & Rolison, 1986). Previous literature has highlighted the significant role of faculty mentors in offering students direction, skill-building techniques and confidence in their overall personal and professional development (Young & Wright, 2001). Often, ethnic minority and first-generation college students report feeling lost within the new institution or unsupported socially by faculty and peers alike (Loo & Rolison, 1986; Tinto, 1975). Ethnic minority college students often belong to lower socioeconomic backgrounds, which tends to correspond with lower levels of preparation in high school and a sense of marginalization and isolation in majority-white college environments (Astin, 1982; Willie, 1981). Support from faculty is a mechanism through which college students begin to feel that people involved within the institution hear their voices and will help them navigate uncharted hurdles in this novel environment (Tinto, 1975). Furthermore, ethnic minority first-generation college students often report being self-driven to achieve their goals (as opposed to being pushed from their parents) (Blackwell & Pinder, 2014). Given that their parents may be unable to guide them due to a lack of knowledge about the college context, faculty members can serve as alternate adult role models who can guide these students' inner motivations further and offer support when students face unexpected challenges in college (Blackwell & Pinder, 2014).

Faculty support has been theorized as a means to increasing confidence in ethnic minority college students who, often times, doubt their academic self-efficacy in an unfamiliar

environment (Ramos-Sánchez & Nichols, 2007). At times, the discrimination they perceive or experience may come from faculty members in and outside of classes; thus, support from faculty members may serve as a means of re-establishing trust in an institution which was previously perceived as a source of disempowerment. However, one study elucidated a surprising finding that more frequent interaction with faculty mentors is negatively related to students' social transition to college (Inkelas, Daver, Vogt, & Leonard, 2007). The authors explained that this negative relationship may be as a result of a possible negative relationship between faculty support and peer support. Students who seek out more faculty mentorship may do so as a result of feeling isolated from peers; they may also have less time to build relationships with peers and may end up experiencing a poorer social transition to college (Inkelas et al., 2007). On the contrary, a prominent study by Pascarella and Terenzini (2001) found that a higher frequency of informal study-faculty interactions – specifically focusing on course-related or other intellectual subjects – significantly predicted freshmen year academic achievement and self-perceived intellectual and personal development. In light of these mixed research findings, the current study will explore the role of faculty social support in buffering the relationship between racial discrimination and depression in ethnic minority college students.

1.6.2 Peer Support

Ethnic minority college students who experience discrimination may uniquely benefit from the support of their peers. College students who are feeling distressed most often seek the support of their same-age peers (Morse & Schulze, 2013). Peers can offer emotional and instrumental support to ethnic minority college students as they share similar experiences and daily struggles on campus, which can make it easier for them to relate to the problems of their peers within the institution. A study conducted by Dennis, Phinney, and Chuateco (2005) used a

sample of ethnic minority college students to determine that peer support for problems related to college was a significant predictor of GPA and college adjustment. Contrarily, a lack of peer support and a lack of family resources negatively predicted GPA and college adjustment in the following spring (Dennis, Phinney, & Chuateco, 2005). Lastly, a study of Latino college students found that peer support was the only support variable which uniquely predicted students' social adjustment (Schneider & Ward, 2003).

While informal peer support has been shown to be beneficial (particularly in the academic domain), more formalized peer support can be protective for students as well. For instance, one study found that a peer-led social support group intervention for a sample of freshman college students resulted in participants reporting lower levels of loneliness and higher levels of perceived support (Mattanah et al., 2010). Pascarella and colleagues (2004) also investigated first-generation college students' engagement with peers; they found that while first-generation students benefited from peer engagement, they were less likely to participate in activities which could promote the development of these peer relationships. These studies highlight the crucial role of peer support in helping first-generation college students – many of whom are ethnic minority backgrounds – acclimate and adjust to college.

However, studies of ethnic minority and/or first-generation college students tend to measure adjustment in terms of academic achievement or attachment to the institution. Mental health outcomes, such as depression, are essential outcome variables which must be studied in order to enhance our understanding of how ethnic minority college students experience and cope with discrimination-related stress in their freshman year. Furthermore, campus-based faculty and peer support are virtually unexamined constructs in prior research on the discrimination-depression relationship, despite growing evidence of their effectiveness in benefiting ethnic

minority college students' mental health. Therefore, the current study will explore the potential buffering role of peer and faculty support on the discrimination-depression relationship across freshman year.

1.7 Present Study

Perceived discrimination has been linked to depression in ethnic minority college students (Hwang & Goto, 2009). However, no study to date has examined the longitudinal discrimination and depression link in ethnic minority college students across various time points over freshman year, while considering the role of first-generation status. The present study aimed to understand the association between perceived discrimination and depression in a sample of ethnic minority college students across the first year of college (at the end of the first and second semester of freshman year). We hypothesized that perceived discrimination would be positively associated with depression in this sample of college students across the two waves of the study. Secondly, we predicted that first-generation college students would report higher levels of depression compared to their non-first generation counterparts due to the additional levels of stress and family disadvantage first-generation college students often experience. Lastly, this study aimed to examine the potential moderating role of peer and faculty support in protecting ethnic minority college students from discrimination-related stress. It was predicted that the presence of social support from peers and faculty in the university would weaken the discrimination-depression relationship, such that discrimination would be positively associated with depression only for those who report low levels of faculty support and peer support.

2 METHODS

Participants were ethnic minority college freshmen from a large urban university in the Southeastern region of the U.S. Participants ranged from 17 to 20 years old ($M = 18.16$, $SD =$

.48). Of the 180 participants, 52.8% were Black/African American, 5% were Latino, 25.6% were Asian/Asian American, 13.3% were Mixed Race and 3.3% noted that they were of other racial or ethnic backgrounds. 23.3% of participants were male while 76.7% were female. 37.8% of participants were first-generation college students, reporting that neither one of their parents attended and finished college; contrarily, 62.2% were non-first-generation college students. Three hundred and seventy-four students completed the first wave of the study (at the end of first semester of freshman year) and 200 students (at the end of second semester of freshman year) completed the second wave of the study. However, 180 participants completed both waves of the study resulting in a final sample size of 180. The final sample included students who completed at least one item on key study variables in both waves of data collection.

Incoming freshmen were contacted online at the end of the first semester of freshmen year, with an invitation to complete an online survey. They were contacted again in the following semester with an invitation to complete the survey once more at the end of the semester. Participants were compensated with a \$5 Amazon Gift Card upon completion of the survey.

Participants completed an online survey which included the following scales: the Racial and Ethnic Microaggressions Scale (REMS; Nadal, 2011; $\alpha = .95$) which was used to measure discrimination, the Institutional Integration Scale (IIS; Pascarella & Terenzini, 1980; $\alpha = 0.92$) which was used to measure various sources of faculty and peer support (using the subscales Faculty Interactions, Faculty Concern for Student Development and Teaching, and Peer Interactions), and the Inventory of Depression and Anxiety Symptoms-General Depression Scale (IDAS-GD; Watson et al., 2007; $\alpha = .93$) which measured depressive symptoms in the past two weeks).

2.1 Measures

The Racial and Ethnic Microaggressions Scale was used in our study to measure perceived racial discrimination; participants reported on their experiences of microaggressions in the past 30 days (REMS; Nadal, 2011). The REMS assesses the type and frequency of microaggressions perceived by individuals in their daily interactions. The REMS is composed of 45 items across 6 subscales. Sample items include, “I received substandard service in stores compared to customers of other racial groups,” and “Someone assumed that my work would be inferior to people of other racial groups.” Participants rate their experience with each item based on frequency in the past 6 months on a 6-point Likert scale (*1=none of the time to 6=all of the time*). The six subscale items are combined resulting in a composite score, ranging from 0-45, such that higher scores indicate higher reported or perceived levels of microaggressions. The current study utilized 44 out of 45 items from the original scale because one item was accidentally omitted in the initial stage of data collection. The initial reliability study for the REMS suggests good internal consistency for the overall scale with $\alpha = .93$ for all the participants (Nadal, 2011). Similarly, the reliability of the REMS for this sample is $\alpha = .91$.

The IDAS-General Depression Scale was used to measure depression in our sample. The IDAS is a 64-item scale that assesses symptoms of major depression and anxiety disorders occurring in the last two weeks (Watson et al., 2007). The IDAS is composed of seven depressive symptom subscales, including lassitude (six items; e.g., “I felt exhausted,” “I slept more than usual”), insomnia (six items; “I slept less than usual,” “I woke up early and could not get back to sleep”), suicidality (six items; “I had thoughts of suicide,” “I hurt myself purposively”), appetite loss (three items; “I did not have much of an appetite”), appetite gain (three items; “I ate when I wasn’t hungry”), ill temper (five items; “Little things made me mad,”

“I felt like breaking things”), and well-being (eight items; “I felt optimistic”). The subscales in IDAS demonstrate strong stability and internal consistency, along with excellent convergent, discriminant, criterion, and incremental validity in community, college student, and psychiatric patient samples (Watson et al., 2007, 2008). For the sake of brevity and participant ease in the online study, we used the 20-item IDAS-General Depression Scale which is based on the original IDAS scale and which utilizes a 5-point Likert Scale (*1 = not at all to 5 = extremely*). The reliability of the IDAS-GD scale for this sample was $\alpha = .92$.

To measure perceived social support from peers and faculty in the university, we utilized the Institutional Integration Scale (IIS) developed by Pascarella and Terenzini (1980). The IIS contains 30 items arranged into five subscales encompassing the domains of peer group interactions, interactions with faculty, faculty concern for student development and teaching, academic and intellectual development, and institutional and goal commitments. Participants rate to what extent they agree with items on the scale, using a 5-point Likert scale (*1 = strongly disagree to 5 = strongly agree*). The internal consistency for the IIS is 0.92 while sub-scale values have ranged from 0.61 to 0.88 (French & Oakes, 2004).

We used the subscales of Peer Interactions, Faculty Interactions and Faculty Concern for Student Development and Teaching as potential moderating variables in our study. The Peer Interactions subscale measures perceived quality of friendships with fellow student peers. We used this subscale as a measure of peer support. The Faculty Interactions subscale measures perceived quality of non-classroom interactions with faculty members. Lastly, the Faculty Concern subscale measures students’ perceptions of faculty members’ concern for student development and teaching (specifically as it relates to academics and professional development).

Both the Faculty Interactions and Faculty Concern scales were used as two separate measures of faculty support.

Sample items from these scales include: “My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes, and values” (Peer Interactions), “My nonclassroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes” (Faculty Interactions subscale), and “Most of the faculty I have had contact with are interested in helping students grow in more than just academic areas” (Faculty Concern). The internal consistency of the items on these three scales were $\alpha = .84$, $\alpha = .89$ and $\alpha = .88$, respectively (French and Oakes, 2004).

2.2 Regression Assumptions

Firstly, regression assumptions within the data were tested. In particular, the assumptions of independence, linearity, normality and homoscedasticity were tested. Multicollinearity amongst study variables and interaction terms was not an issue in the current dataset as the Variance Inflation Factor (VIF) amongst these variables ranged from 1.00 to 1.26. Furthermore, P-P and Q-Q plots revealed that the data are normally distributed with only a few outliers. Lastly, scatterplots of standardized residuals were plotted against standardized predicted values to assess homoscedasticity. The data appeared to meet the assumption for homoscedasticity as the error variance was relatively constant across all values of the predicted variable.

2.3 Missing Data

To determine whether the data missing in the current sample were at random, logistic regression was conducted in SPSS. This analysis explored the likelihood that participants completed the second wave of the study. In the dataset ($n = 374$), participants who did not have Wave 1 completed were coded as 0 and participants who had Wave 2 completed were coded as

1. Wave 1 variables (including gender, age, first-generation status, racial/ethnic background, racial discrimination, peer support, two measures of faculty support and depression) were used as predictors in the regression model. Results of this logistic regression indicate that only gender ($b = -.60, p = .02, OR = .55$) and racial/ethnic group (Black students: $b = .65, p = .04, OR = 1.9$; Asian students: $b = 1.01, p = .01, OR = 2.7$) emerged as significant predictors of the likelihood that a participant would complete Wave 2. Exp(B) values indicate that when other variables were held constant, men were about 55 percent (.55) less likely than women to complete Wave 2. Furthermore, when all other variables were held constant, Black students were 1.9 times more likely to complete Wave 2 and Asian students were 2.7 times more likely to complete Wave 2. In the final sample, around 77% of participants are female ($n = 180$) while in Wave 1, around 71% were female ($n = 374$). In the final sample, around 53% of participants are Black/African American and around 26% of participants are Asian/Asian American. On the contrary, in Wave 1, around 48% of participants were Black/African American and around 22% were Asian/American.

These results suggest that the proportion of female, African/African American and Asian/Asian American study participants increased from Wave 1 to Wave 2. In other words, in comparison to students of other racial/ethnic backgrounds, African/African American and Asian/Asian American students were more likely to complete Wave 2; similarly, female participants were more likely to complete Wave 2. However, according to the current logistic regression analysis, participants were not likely to have dropped out due to their experiences of racial discrimination, peer or faculty support, or depression, all of which are key study variables.

Item-level imputation was utilized to estimate information for participants with missing data. However, there were only several cases of missing data which required imputation. In

Wave 1, 173 out of 180 participants had complete data; 3.8% of participants (7 out of 180 participants) were missing on average 16% of their data. In Wave 2, 178 out of 180 participants had complete data; 1.1% of participants (2 out of 180 participants) were missing on average 47.5% of their data. In Wave 2, one participant was missing 90% of their data while the other was missing 5% of their data, resulting in an average of 47.5% of missing data.

The EM (Expectation-Maximization) Estimation method was utilized to impute missing data at the item level (Enders, 2001; IBM SPSS 20, 2011). In particular, imputation was used to account for any missing data in key variables in our regression model – discrimination, depression, faculty interactions, faculty concern and peer support. Participants who completed at least one question within a scale were retained in the study and their missing data was imputed. However, participants who completed less than one item within a scale measuring a key study variable were excluded from the study. The final sample size of participants who met this criteria in Wave 1 and 2 was $n = 180$. A post-hoc power analysis estimated that the current sample size ($n = 180$) has 76% power to detect a small to medium effect with nine predictors and an alpha level of .05 (Faul, Erdfelder, Buchner, & Lang, 2009).

These new datasets include estimates for variables produced using ordinary least squares (OLS) estimates of T1 Discrimination, T1 Faculty Interactions, T1 Faculty Concern, T1 Peer Support, and T1 and T2 depression intercepts and rates of change, as well as demographic variables. All analyses were conducted using IBM SPSS Statistics 21.

2.4 Data Analysis Plan

The present study investigated the longitudinal relationship between discrimination and depression across two time points: Time 1 (Fall 2012) and Time 2 (Spring 2013). Two time points during freshman year were used given the research literature about the importance of

freshman year in predicting academic and emotional adjustment of ethnic minority students during college. The study used a residualized change regression model, controlling for Time 1 Depression (DepT1) to understand whether Time 1 Discrimination (DiscT1) was related to Time 2 Depression (DepT2).

Gender and country of birth were not used as covariates as initially planned because they were not correlated with the dependent variable (Depression Time 2). However, as planned, first-generation status was used as a covariate, due to theoretical evidence that first-generation college students report higher levels of stress in college. A hierarchical regression was conducted in order to measure residualized change. The first step of the model included covariates: Depression Time 1 (in order to control for this variable) and first-generation status. The second step of the model included covariates and main effects (Discrimination Time 1, Peer Interactions, Faculty Interactions and Faculty Concern for Student Teaching and Development). The third step included covariates, main effects and interactions between the main study variables (Discrimination x Peer Interactions, Discrimination x Faculty Interactions and Discrimination x Faculty Concern for Student Teaching and Development). All of these variables were mean-centered; the resulting interaction terms were created by cross-multiplying two centered variables (Cohen & Cohen, 1983).

3 RESULTS

3.1 Descriptive Statistics

Descriptive statistics for all study variables are included in Table 1. Depression Time 1 was positively associated with Depression Time 2, $r = .63$, $p < .01$. There was no significant difference between Depression at Time 1 ($M = 46.16$, $SD = 15.34$) and Depression at Time 2 ($M = 47.46$, $SD = 17.38$); $t(179) = -1.24$, $p = .22$. Furthermore, there was a significant relationship

between Discrimination Time 1 and Depression Time 1, $r = .24, p < .01$, as well as between Discrimination Time 1 and Depression Time 2, $r = .26, p < .01$.

Peer Interactions were significantly positively associated with Faculty Concern for Student Teaching and Development, $r = .16, p = .03$, and Faculty Interactions, $r = .35, p < .01$. Additionally, Peer Interactions were significantly negatively associated with Depression Time 1, $r = -.20, p < .01$.

First-generation students ($M = 46.12, SD = 14.10$) did not significantly differ from non-first generation students ($M = 46.18, SD = 16.10$) in their reported depressive symptoms during first semester (Depression Time 1), $t(178) = .02, p = .98$. The effect size for this analysis ($d = 0.004$) was found to fall below the small (0.2) range for effect size according to Cohen's (1988) classification. Similarly, first-generation students ($M = 50.49, SD = 18.01$) did not significantly differ from their non-first generation counterparts ($M = 45.67, SD = 16.83$) in their reported depressive symptoms during their second semester (Depression Time 2), $t(178) = -1.81, p = .07$. The effect size for this analysis ($d = 0.27$) was found to fall in the small (0.2) to medium (0.5) range for effect size according to Cohen's (1988) classification.

3.2 Regression

3.2.1 Step 1

In the first step of the model, Depression at Time 1 significantly predicted Depression at Time 2, $\beta = .63, p < .01$. Furthermore, first-generation status significantly predicted Depression at Time 2, $\beta = .14, p = .02$. The first step of the model (which included the variable Depression Time 1 and first-generation status) accounted for 42% of the variance in Depression Time 2, $R^2 = .42, F(2, 177) = 63.64, p < .01$.

3.2.2 Step 2

The second step of the model included main effects. Depression at Time 1 again significantly predicted Depression at Time 2, $\beta = .61, p < .01$. Similarly, first-generation status again predicted Depression at Time 2, $\beta = .13, p = .02$. However, Discrimination Time 1 did not significantly predict Depression at Time 2, $\beta = .11, p = .07$. Similarly, neither Peer Interactions ($\beta = .01, p = .83$), Faculty Interactions ($\beta = -.04, p = .57$) nor Faculty Concern ($\beta = .002, p = .97$) predicted Depression at Time 2. The second step of the model explained an additional 1% of variance in Depression Time 2, accounting for 43% of the variance in Depression Time 2, $R^2 = .43, F(6, 173) = 21.77, p < .01$.

3.2.3 Step 3

The third and final step of the model included main effects and interactions. Depression at Time 1 again significantly predicted Depression at Time 2, $\beta = .59, p < .01$, as did first-generation status, $\beta = .14, p = .02$. Racial discrimination at Time 1 significantly predicted Depression at Time 2, $\beta = .13, p = .03$. Neither Peer Interactions ($\beta = .02, p = .73$), Faculty Interactions ($\beta = -.03, p = .63$), nor Faculty Concern ($\beta = -.003, p = .96$) predicted Depression at Time 2. Additionally, no interactions were found between Discrimination Time 1 and Peer Interactions ($\beta = .06, p = .37$), Discrimination Time 1 and Faculty Interactions ($\beta = .05, p = .38$) or Discrimination Time 1 and Faculty Concern ($\beta = -.10, p = .11$). The third step of the model explained an additional 2% of variance in Depression Time 2, accounting for 45% of the variance in Depression Time 2, $R^2 = .45, F(9, 170) = 15.20, p < .01$.

4 CONCLUSION

The present study examined the relationship between racial discrimination and depression among ethnic minority college students. As hypothesized, this study found a significant

association between racial discrimination in the first semester and depression in the second semester. Contrary to the hypothesis, peer and faculty support did not moderate the relationship between racial discrimination and depression. The study also found that depression measured at the end of first semester of freshman year was significantly associated with depression assessed at the end of second semester of freshman year.

Additionally, the current study found that students' reported perceptions of peer support (as measured by peer interactions) were significantly associated with two measures of faculty support (faculty interactions and faculty concern for student teaching and development). Furthermore, peer support in the first semester of freshman year was negatively associated with depression in the same semester. These findings will be explored in further detail below.

4.1 Relationship between Racial Discrimination and Depression

The primary finding of the current study is that racial discrimination in the first semester of freshman year significantly predicted depressive symptoms in the second semester of freshman year, even while controlling for depressive symptoms in the first semester of freshman year. This finding contributes to a small yet growing literature investigating the longitudinal link between racial discrimination and depression in ethnic minorities (Davis et al., 2016, English et al., 2014; Hou et al., 2015; Juang & Cookston, 2009; Schulz et al., 2006; Stein et al., 2016). While the relationship between racial discrimination and depression in ethnic minorities is a robust finding, as evidenced by numerous studies and several large meta-analyses (Pascoe & Richman, 2009; Lee & Ahn, 2012), to our knowledge, only six other studies to date have examined the relationship between racial discrimination and depression across time. This study provides evidence to further the theory that race-related stress, in particular racial discrimination, predicts depression (Clark et al., 1999). However, the current study highlights the fact that the

negative effects of racial discrimination on ethnic minority college freshmen may continue over from first semester to second semester, resulting in depressive symptoms even a semester later.

While the current study did find that racial discrimination predicted depression, this relationship was only significant in the third step of the regression model and not in the second step of the model. In other words, racial discrimination did not contribute a significant amount of variance to the model in the second step. However, strong associations were found between Wave 1 racial discrimination and depression as well as Wave 1 racial discrimination and Wave 2 depression. These findings suggest that while racial discrimination in first semester does predict depressive symptoms in second semester, there may very well exist a bidirectional relationship between depression and discrimination as well. In other words, it is possible that students who report more depression may perceive higher levels of discrimination. There is evidence to suggest that depressed individuals demonstrate errors in their cognitive processing. For example, they may interpret neutral stimuli in their world as negative (Gotlib & Joormann, 2010) or they may pay more attention to sad stimuli (e.g. sad faces versus happy or angry faces) as evidenced by research on attentional biases (Gotlib, Krasnoperova, Yue & Joormann, 2004). Thus, it is possible that depressed individuals perceive higher levels of stress and negativity in their environments, including possibly a higher sensitivity towards racial injustices committed towards them or individuals belonging to their racial/ethnic group. Further, it is possible that those who experience racial discrimination experience depressive symptoms, which leads them to further pick up on negative cues, including discrimination-related cues. However, virtually no research studies to date have explored the potential bidirectional relationship between depressive symptoms and perceived racial discrimination. It is important for researchers and practitioners to

investigate this relationship in the future to understand the effects of racial discrimination in a complex way.

Depressive symptoms emerge and persist due to a combination of both genetic factors and life stress. An extant literature suggests that underlying genetic vulnerability (Burcusa & Iacono, 2007) as well as major life stress (Lewinsohn et al., 1999) contribute to the onset of depression (Monroe & Simons, 1991). The notion that underlying genetic vulnerability is activated by a stressful event and jointly contributes to psychological disorders such as depression is known as the diathesis-stress model (Belsky & Pluess, 2009; Monroe & Simons, 1991). Recurrent depression may be related to the presence of recurrent stressors such as daily hassles. These daily hassles have been defined in previous studies as recurrent, day-to-day stressors; they may include day-to-day concerns about finances, classwork, housekeeping, health or relationships (Bouteyre et al., 2006). Racial discrimination, particularly in the form of racial and ethnic microaggressions, can fit in the category of daily hassles. Racial and ethnic microaggressions (a form of daily discrimination) are stressful in nature; the daily nature of this stress can result in increased cortisol secretion which in turn contributes to increased depressive symptoms (Sher, 2004). Another study of 233 first-year college students found that daily hassles were an important risk factor for depression. In this study, 41 percent of participants reported experiencing depressive symptoms and the authors argued that the recurrent nature of stressors played a large role in their depression (Bouteyre et al., 2006).

Future studies should continue to investigate third variables which can explain the discrimination-depression relationship over time, particularly in the early years of college.

For instance, a recent study of 113 Latino adults found that traumatic stress symptoms mediated the relationship between racial and ethnic microaggressions and depression (Torres &

Taknint, 2015). Stress responses to perceived or experienced discrimination can result in individuals feeling avoidant, aroused or hypervigilant, feeling as though they cannot control the event (Carlson, 1997; Carter, 2007). This study provides evidence that the stress of racial discrimination remains burdensome and contributes to depressive symptoms even a semester later into the freshman year of college.

Another important finding of the current study is that first-generation status predicted depression. First-generation status independently predicted depression in the following semester in all three steps of the model. This finding suggests that while racial discrimination is a stressful experience that is linked with depression for ethnic minority college students, first-generation ethnic minority college students may be at an even higher risk for developing depressive symptoms. First-generation status (independent of racial discrimination) contributed to depressive symptoms in the following semester, a finding that suggests that first-generation ethnic minority college students may carry a double burden.

4.2 First-Generation Ethnic Minority College Students: A Double Burden

This study found that first-generation status was associated with depression amongst ethnic minority college students. This finding confirms findings from previous studies that first-generation college students report higher levels of depression compared to non-first generation students (Jenkins et al., 2013; Stebleton et al., 2014). There are several notable stressors that first-generation ethnic minority college students experience in addition to their ethnic minority status, which may result in depressive symptoms in their freshman year.

Firstly, numerous studies highlight the difficulties first-generation college students may experience in their academic transition to college. These studies demonstrate that first-generation college students report a major gap in their academic preparedness, often due to attending under-

resourced high schools or due to a lack of academic guidance from parents who did not attend college (Richardson & Skinner, 1992; Zalaquett, 1999). Thus, these students' disadvantaged first-generation identities might be salient in a new academic environment amongst peers who may be more prepared to handle certain academic challenges. First-generation college students report experiencing a great deal of "academic acculturative stress," the stress of adjusting to a completely new college environment that is not shared with parents or family members at home (Jenkins et al., 2013; Mitchell, 1997; York-Anderson & Bowman, 1991). Having to balance two completely different worlds – their world at home and their new academic world - these students may experience "significant dissonance" (Somers et al., 2004, p. 429). In college, these students may have unrealistic expectations about college success (Brooks-Terry, 1988). Academic stressors may result in daily burdens and associated depressive symptoms, as demonstrated by previous studies (Huang et al., 2015; Mikolajczyk et al., 2008). Future studies should consider academic stressors when seeking to understand the development of depression in first-generation ethnic minority college students.

Secondly, financial stressors can greatly burden first-generation ethnic minority college students. First-generation college students report difficulty in college due to a greater likelihood of belonging to lower socioeconomic backgrounds, worrying about financial aid or hoping to support their families financially upon graduation (Bui, 2002; Pascarella et al., 2004). As a result of these financial burdens, these students often report working longer hours and studying less often, which taxes them with having to balance more activities in their daily schedules while potentially falling behind in academic work (Martinez et al., 2012). One study of 95 African American students found that the top five reported stressors for college students were making important decisions about their education, feeling respected by peers, having to balance too

many things at the same time, juggling many responsibilities and experiencing financial burdens (Lindsey et al., 2011). This study highlights the fact that many college students appraise financial stressors and stressors related to balancing responsibilities as burdensome. A recent study of 165 college undergraduates found that general life stressors (including financial stress) as well as college-related stressors predicted depressive symptoms (Lester et al., 2014). These stressors may contribute to depression even more prominently in first-generation ethnic minority freshmen who often report high levels of academic and financial stress. The existence of these multiple stressors may explain the current study's finding that first-generation status uniquely predicts depressive symptoms in first-generation students. Stressors associated with their racial/ethnic minority status and first-generation status doubly tax first-generation ethnic minority freshmen, predicting depressive symptoms across the freshman year.

4.3 The Role of Faculty and Peer Support

The current study hypothesized that peer support and faculty support are important sources of support which can potentially lessen the impact of discrimination on depression in ethnic minority college students. However, this study found no significant interactions between racial discrimination and faculty and peer support in predicting depression. The following sections will explore possible reasons why faculty and peer support did not buffer discrimination-related stress and will also highlight some other ways ethnic minority college students report coping with discrimination-related stress.

4.3.1 Faculty Support

One possible reason that faculty support did not protect against the stress resulting from racial discrimination is that faculty support may specifically buffer academic stress, not discrimination-related stress. The majority of prior studies that have explored the effect of

perceived faculty support have examined how it relates to academic adjustment (DeFreitas & Bravo Jr., 2012; Pascarella and Terenzini, 1980). Other studies have examined the role of faculty support or concern on influencing campus climate (Palmer & Maramba, 2015). The present study examined the effect of faculty support on discrimination. It is possible that students reach out to faculty when they are experiencing distress related to academics. Faculty on campus may be perceived as experts of their academic areas and not as individuals whom students can turn to for other life stressors, such as racial discrimination.

Furthermore, many ethnic minority students report feeling isolated on majority White college campuses and report low help-seeking behaviors (Blume et al., 2012; Loo & Rolison, 1986). Part of this isolation can stem from a feeling of White faculty and peers not understanding or responding to their needs. However, a study by Loo and Rolison (1986) found that ethnic minority college students reported feeling isolated on campus despite the presence of accessible faculty members. Experiencing racial and ethnic microaggressions may prevent ethnic minority students from reaching out to these faculty for support, especially if these students feel that the institution itself may have discriminatory policies towards ethnic minority students (Loo & Rolison, 1986; Lunneborg & Lunneborg, 1985). Ethnic minority college students may not seek help from faculty because they do not want to be perceived as incompetent, a perception which may result from stereotype threat (Fischer, 2010). This lack of seeking faculty assistance disadvantages ethnic minority college students – a large portion of whom are first-generation college students – who may end up struggling alone or using nonadaptive academic strategies to succeed, such as dropping out of a difficult course (Alexitch, 2002; O'Brien & Shedd, 2001). In sum, ethnic minority college students are less likely to seek support from faculty in the first place, which can alienate them from an important source of potential support on campus

(Komarraju et al., 2010). It is important for future studies to investigate under which circumstances students feel comfortable reaching out to faculty members when coping with racial discrimination. As such, future research needs to consider the impact of faculty support on student help-seeking behavior in response to race-related stress.

4.3.2 Peer Support

Peer support in the college setting has been shown to predict positive adjustment and reduced negative psychological outcomes in the transition to college. Research suggests that loneliness significantly contributes to depressive symptoms in freshmen college students (Wei et al., 2005). Our study found that peer support in the first semester was negatively related to depressive symptoms in the first semester. However, the longitudinal relationship between peer support in the first semester and depression in the second semester was not significant.

The present study did not find a significant interaction between discrimination and peer support on depression. One possible reason that peer support did not protect against discrimination-related stress in ethnic minority college students is that peer support's benefits may be limited to a specific domain. For instance, one study of first-generation ethnic minority college students found that peer support predicted academic outcomes, whereas, family support was related to mental health outcomes among first-generation college students (many of whom were ethnic minorities) (Dennis et al., 2005). The authors of this study found that peer support for problems experienced in college predicted both higher GPA and college adjustment in ethnic minority first-generation college students. Similarly, in a study of 533 first-generation college freshmen, Rayle & Chung (2007) found that college friend social support emerged as the strongest predictor of "mattering", the notion that others depend on an individual and are concerned about them. Furthermore, "mattering" significantly predicted academic stress levels.

Although “mattering” to a friend at school is not equivalent to social support, the latter study identified the importance of feeling connected to college friends for first-generation college students, many of whom may also belong to ethnic minority backgrounds. These studies demonstrate the importance of peer support for college students’ academic outcomes, but not necessarily for their mental health outcomes.

It is also possible that ethnic minority first-generation college students who commute to campus may have stronger social support off-campus, a source of support not accounted for by the current study. First-generation students are often commuters who spend a limited amount of time on campus and, as a result, are less engaged with campus activities (Chickering, 1974; Pascarella, 1992). This routine may limit the time and opportunities commuters have to build on-campus support (Pascarella, 1992). Ethnic minority first-generation college students may already discuss their concerns regarding racial discrimination with friends off-campus, resulting in a reduced need for support from peers on campus. Thus, it is possible that participants in this study have important sources of off-campus support not considered in the present study, such as family support and off-campus peer support. Future studies should seek to understand the protective role of off-campus supports on discrimination-related stress. In addition to faculty and peer support, it is important to consider other sources of support such as family support, co-ethnic peer support or community support from their cultural, religious or neighborhood organizations.

4.4 Active Coping: An Important Protective Mechanism

It is possible that ethnic minority freshmen did not benefit from social support, a form of emotion-based coping, because they may prefer other methods of coping. One form of coping that was not explored in the current study is known as active or problem-focused coping. Active or problem-focused coping seeks to identify and alleviate the source of stress by taking action to

reduce that stress (Lazarus & Folkman, 1984). For instance, an ethnic minority student who responds to racial discrimination through active coping may confront a person making a racist statement or join a club on campus that raises awareness about an individual's racial/ethnic group (Museus et al., 2015).

Previous studies about ethnic minority college students' coping strategies for acculturative stress such as discrimination demonstrate a higher prevalence of active coping, as opposed to seeking social support (Mena et al., 1987; Phinney & Haas, 2003). A qualitative study of 30 first-generation ethnic minority college students found that proactive coping (e.g. working harder in a class, identifying resources to handle a problem) was the most common form of coping with a stressful event (Phinney & Haas, 2003). Another study of Mexican American college students found that compared to other possible coping techniques, only problem solving significantly mediated the association between discrimination and well-being (Villegas-Gold & Yoo, 2014). Similarly, a study of first-generation immigrant college students found that first-generation students were more likely to respond to acculturative stress including discrimination by trying to solve the problem directly (e.g. confronting the individual who made the racist statement), while their second- and third-generation counterparts were more likely to talk about the problem with others (Mena et al., 1987). In sum, the literature has identified that ethnic minority and first-generation college students use active coping strategies more regularly, which requires further investigation.

4.5 Strengths and Limitations

The current study offers some novel and valuable findings about correlates of depression in ethnic minority college freshmen. Specifically, this was the first study of ethnic minority college students which found a longitudinal relationship between racial discrimination (as

measured by racial and ethnic microaggressions) and depressive symptoms across freshman year. Secondly, this study also found that peer support is associated with reduced depressive symptoms in the first semester of freshman year. Thirdly, this study found that first-generation status was related to depression in the second semester of freshman year, highlighting the stress that may accompany the multiple social identities carried by ethnic minority first-generation college freshmen.

However, some limitations should be considered. First, this study only investigated freshman year outcomes. It is possible that a different relationship between discrimination and depression would have emerged across a longer developmental period. Prior research has found that the first year in college is well-known to be the most stressful. Given that the first year is compounded with numerous transitions, racial discrimination could have lost its salience as a stressor when compared to all the other different stressors ethnic minority college students may experience in freshman year.

Secondly, more than half of the participants who completed the first wave of the study did not proceed to complete the second wave of the study, which resulted in a lower sample size than desired. While the current study had 76% power to detect an effect, a larger sample size would have enhanced the statistical power of our study and our confidence to detect an effect.

Finally, peer and faculty support were measured using subscales of the Institutional Integration Scale which was originally developed to measure academic adjustment outcomes amongst college students (Pascarella & Terenzini, 1980). Specifically, the subscales “peer interactions”, “faculty interactions” and “faculty concern for student teaching and development” were used to assess social support from peers and faculty in the college setting. Items in these subscales may be more relevant for academic adjustment, rather than for social problems (such

as discrimination) experienced by college freshmen. While this is a reliable scale, it may not be the most valid measure of overall social support from peers and faculty, especially when trying to understand the potential buffering effect of peer and faculty support against discrimination-related stress. Furthermore, this scale is a self-report measure and may not most accurately reflect students' levels of support-seeking in the college context.

Lastly, results of this study should be interpreted with caution given that all measures completed by participants were based on self-report. Additionally, the IDAS-GD scale which asked about participants' experiences of depression was based on reported depressive symptoms in the past two weeks which does not accurately account for depressive symptoms across the entire semester.

4.6 Future Directions

Our study found a significant relationship between racial discrimination and depression amongst ethnic minority college students. Notably, racial discrimination in the first semester was associated with depression in both first and second semester. Future studies should examine the potential impact of other possible stressors (e.g. financial and academic stressors) on depressive symptoms in this population. For example, a study of diverse college students found that Asian American college students appraised family and academic stressors as more stressful than incidents related to their ethnic identity (Murphy-Shigematsu, Sein, Wakimoto, & Wang, 2012). This study highlights that stressors related to ethnic identity (such as racial discrimination) may not always be primary stressors for ethnic minority college students. Studies that identify the strength of different stressors can contribute to the development of prevention efforts that are more targeted and effective in improving the mental health of ethnic minority students.

Additionally, future studies must address barriers to help-seeking from faculty on campus. For instance, Jenkins et al. (2013) suggest that cultural differences between ethnic minority first-generation college students and peers or faculty members may limit them from seeking support from peers or faculty who they feel may not be able to understand their circumstances. Thus, help-seeking behaviors of first-generation ethnic minority students may be inhibited by a real or exaggerated perception that peers or faculty of other ethnic backgrounds cannot even relate to their experiences. Understanding whom students feel most connected to may help researchers and practitioners identify how to further support those relationships and perhaps bridge gaps with additional potential sources of support.

Given that there is mixed evidence about which coping strategies help first-generation ethnic minority college students the most in alleviating the impact of discrimination, future studies should seek to identify in which situations active coping is needed versus which situations may require social support, a form of emotion-focused coping. Furthermore, there is evidence that several strategies may be concurrently used by ethnic minority college students experiencing discrimination. For instance, a study of multiracial college students found that these students used active coping, emotion-focused coping and avoidant coping (e.g. educating others, seeking out supportive spaces and avoiding environments in which they may experience racial discrimination, respectively) (Museus et al., 2015). It was unclear whether or not certain students within this subgroup had a greater tendency to use certain types of coping and, if so, in which situations they did so. Future studies should aim to identify in which setting and for whom certain types of coping elicit the most adaptive outcomes.

In addition, future studies should continue exploring the longitudinal relationship between discrimination and depression but they should utilize other longitudinal techniques

besides hierarchical regression. Advanced longitudinal designs such as latent growth curve modeling should be utilized in order to elucidate the impact of racial discrimination and other stressors on depression over time (Singer & Willett, 2003). Additionally, using growth curve analysis can not only assist researchers in understanding the potential effect of discrimination at certain time points in college on the development of depression over time, but it can also contribute to the understanding about the potential bidirectionality of this effect (i.e. using depression at certain time points as a predictor variable in the model). Growth curve models have been utilized in several other studies examining acculturative stress and mental health outcomes amongst ethnic minority adolescents (Brody et al., 2006; Rogers-Sirin & Gupta, 2012). For instance, Brody et al. (2006) utilized growth curve modeling to investigate the longitudinal relationship amongst racial discrimination, conduct problems and depression amongst 10-12 year olds. Future studies should similarly utilize growth curve modeling to investigate the effects of discrimination within ethnic minority college students.

Lastly, future studies should consider the use of mixed-methods approaches. Very few studies have explored college students' coping strategies in response to discrimination (Phinney & Haas, 2003; Museus et al., 2015). However, of these studies, qualitative studies have added greater specificity to our understanding of coping. Specifically, while quantitative approaches have identified how often students utilize processes such as active or emotion-focused coping, qualitative research on this topic has highlighted which specific actions students take to respond to discrimination-related stress. The specificity that qualitative research can offer us about the stress and coping patterns of ethnic minority college freshmen can aid researchers' and practitioners' design of and confidence in future interventions.

4.7 Conclusion

Ethnic minority college freshmen experience a multitude of stressors during their transition to college, which can result in higher rates of depression. The current study found that racial discrimination significantly predicted depression across freshman year. Because ethnic minority first-generation college students report lower graduation rates compared to White students (Fischer, 2010), it is important to understand the ways in which these students cope with different types of stress on campus. Campus-based faculty and peer support did not buffer against discrimination-related stress; future studies should continue to investigate sources of beneficial support for ethnic minority college students. Lastly, first-generation status emerged as an important predictor of depression in our study, underscoring the significance of considering students' multiple social identities when investigating their mental health and well-being outcomes. This research builds on previous literature about the importance of considering various sources of support for ethnic minority first-generation college students. It is our hope that this area of research can continue to elucidate processes that highlight pathways to healthy social, academic and mental health functioning for ethnic minority and first-generation college freshmen in their transition to and success in the university setting.

Table 1 Correlations
Correlations Among Discrimination, Depression, Faculty Support and Peer Support

Variable	1	2	3	4	5	6	7
1. REMS T1	.91						
2. Depression T1	.24**	.91					
3. Depression T2	.26**	.63**	.94				
4. Peer Interactions	-.06	-.20**	-.12	.84			
5. Faculty Interactions	.08	.05	.01	.35**	.89		
6. Faculty Concern for Student Teaching and Development	-.07	-.02	-.01	.16*	.03	.88	
7. First-Generation Status		-.002	.14	.02	.02	.08	---
Mean	2.00	46.16	47.46	3.58	3.11	3.33	1.37
Standard deviation	0.53	15.34	17.38	0.70	0.98	0.60	0.49

Note. $n = 180$; scale internal consistencies (coefficient alpha) are displayed in **boldfaced**

italics on the diagonal line

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

Table 2 Hierarchical Regression

Hierarchical Regression for Racial Discrimination and Faculty/Peer Support Predicting Depression

Predictor	<i>B</i>	<i>SE</i>	β	R^2	ΔR^2
Step 1				.42	
Depression Time 1	.63**	.06	.63**		
First-Generation Status	.28*	.12	.14*		
Step 2				.43	.01
Depression Time 1	.61**	.06	.61**		
First-Generation Status	.27*	.12	.13*		
REMS Time 1	.11	.06	.11		
Peer Interactions	.01	.06	.01		
Faculty Interactions	-.04	.06	-.04		
Faculty Concern	.002	.06	.002		
Step 3				.45	.02
Depression Time 1	.59**	.06	.59**		
First-Generation Status	.29*	.12	.14*		
REMS Time 1	.13*	.06	.13*		
Peer Interactions	.02	.06	.02		
Faculty Interactions	-.03	.06	-.03		
Faculty Concern	-.003	.06	-.003		
Interaction: REMS and PI	.06	.07	.06		
Interaction: REMS and FI	.05	.06	.05		

Interaction: REMS -.09 .05 -.10
and FC

Note. REMS = Racial Discrimination; PI = Peer Interactions, FI = Faculty Interactions and FC

= Faculty Concern for Student Teaching and Development.

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

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APPENDICES

Appendix A

Appendix A.1

Racial and Ethnic Microaggressions Scale (REMS; Nadal, 2011)

Think about your experiences with race. Please read each item and think of how many times this event has happened to you in the **PAST SIX MONTHS**.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____

1 = I did not experience this event.

2 = I experienced this event 1-3 times.

3 = I experienced this event 4-6 times.

4 = I experienced this event 7-9 times.

5 = I experienced this event 10 or more times.

_____ I was ignored at school or at work because of my race.

_____ Someone's body language showed they were scared of me, because of my race.

_____ Someone assumed that I spoke a language other than English.

_____ I was told that I should not complain about race.

_____ Someone assumed that I grew up in a particular neighborhood because of my race.

_____ Someone avoided walking near me on the street because of my race.

_____ Someone told me that she or he was colorblind.

_____ Someone avoided sitting next to me in a public space (e.g., restaurants, movie theaters, subways, buses) because of my race.

_____ Someone assumed that I would not be intelligent because of my race.

_____ I was told that I complain about race too much.

_____ I received substandard service in stores compared to customers of other racial groups.

- _____ I observed people of my race in prominent positions at my workplace or school.
- _____ Someone wanted to date me only because of my race.
- _____ I was told that people of all racial groups experience the same obstacles.
- _____ My opinion was overlooked in a group discussion because of my race.
- _____ Someone assumed that my work would be inferior to people of other racial groups.
- _____ Someone acted surprised at my scholastic or professional success because of my race.
- _____ I observed that people of my race were the CEOs of major corporations.
- _____ I observed people of my race portrayed positively on television.
- _____ Someone did not believe me when I told them I was born in the US.
- _____ Someone assumed that I would not be educated because of my race.
- _____ Someone told me that I was “articulate” after she/he assumed I wouldn’t be.
- _____ Someone told me that all people in my racial group are all the same.
- _____ I observed people of my race portrayed positively in magazines.
- _____ An employer or co-worker was unfriendly or unwelcoming toward me because of my race.
- _____ I was told that people of color do not experience racism anymore.
- _____ Someone told me that they “don’t see color.”
- _____ I read popular books or magazines in which a majority of contributions featured people from my racial group.
- _____ Someone asked me to teach them words in my “native language.”
- _____ Someone told me that they do not see race.
- _____ Someone clenched her/his purse or wallet upon seeing me because of my race.

- _____ Someone assumed that I would have a lower education because of my race.
- _____ Someone of a different racial group has stated that there is no difference between the two of us.
- _____ Someone assumed that I would physically hurt them because of my race.
- _____ Someone assumed that I ate foods associated with my race/culture every day.
- _____ Someone assumed that I held a lower paying job because of my race.
- _____ I observed people of my race portrayed positively in movies.
- _____ Someone assumed that I was poor because of my race.
- _____ Someone told me that people should not think about race anymore.
- _____ Someone avoided eye contact with me because of my race.
- _____ I observed that someone of my race is a government official in my state
- _____ Someone told me that all people in my racial group look alike.
- _____ Someone objectified one of my physical features because of my race.
- _____ An employer or co-worker treated me differently than White co-workers.
- _____ Someone assumed that I speak similar languages to other people in my race.

Appendix A.2

Inventory of Depression and Anxiety Symptoms-General Depression Scale

(IDAS-GD; Watson et al. 2007)

Below is a list of feelings, sensations, problems, and experiences that people sometimes have. Read each item to determine how well it describes your recent feelings and experiences. Then circle the number that best describes **how much** you have felt or experienced things this way **during the past two weeks, including today**. Use this scale when answering:

Not at all	A little bit	Moderately	Quite a bit	Extremely
1	2	3	4	5

1. I felt exhausted	1	2	3	4	5
2. I felt depressed	1	2	3	4	5
3. I felt inadequate	1	2	3	4	5
4. I felt fidgety, restless	1	2	3	4	5
5. I had thoughts of suicide	1	2	3	4	5
6. I slept very poorly	1	2	3	4	5
7. I blamed myself for things	1	2	3	4	5
8. I had trouble falling asleep	1	2	3	4	5
9. I felt discouraged about things	1	2	3	4	5

10. I thought about hurting myself	1	2	3	4	5
11. I did not have much of an appetite	1	2	3	4	5
12. I felt like eating less than usual	1	2	3	4	5
13. I looked forward to things with enjoyment	1	2	3	4	5
14. I felt like I had a lot of energy	1	2	3	4	5
15. I had little interest in my usual hobbies or activities	1	2	3	4	5
16. I had trouble concentrating	1	2	3	4	5
17. I had trouble making up my mind	1	2	3	4	5
18. I talked more slowly than usual	1	2	3	4	5
19. I found myself worrying all the time	1	2	3	4	5
20. It took a lot of effort for me to get going	1	2	3	4	5

Appendix A.3

Institutional Integration Scale (IIT; Pascarella & Terenzini, 1980)

Please read the following statements and indicate how much you agree with each statement...

1 _____ 2 _____ 3 _____ 4 _____ 5
 Strongly Disagree Somewhat Agree Agree Strongly
 Disagree Somewhat Disagree Agree Agree

Since coming to this university I have developed close personal relationships with other students
The student friendships I have developed at this university have been personally satisfying
My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes, and values
My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas
It has been difficult for me to meet and make friends with other students
Few of the students I know would be willing to listen to me and help me if I had a personal problem
Most students at this university have values and attitudes different from my own
My nonclassroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes
My nonclassroom interactions with faculty have had a positive influence on my intellectual growth and interest in ideas
My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations
Since coming to this university I have developed a close, personal relationship with at least one faculty member
I am satisfied with the opportunities to meet and interact informally with faculty members
Few of the faculty members I have had contact with are generally interested in students
Few of the faculty members I have had contact with are generally outstanding or superior teachers
Few of the faculty members I have had contact with are willing to spend time outside of class to discuss issues of interest and importance to students
Most of the faculty I have had contact with are interested in helping students grow in more than just academic areas
Most faculty members I have had contact with are genuinely interested in teaching

I am satisfied with the extent of my intellectual development since enrolling in this university
My academic experience has had a positive influence on my intellectual growth and interest in ideas
I am satisfied with my academic experience at this university
Few of my courses this year have been intellectually stimulating
My interest in ideas and intellectual matters has increased since coming to this university
I am more likely to attend a cultural event (for example, a concert, lecture, or art show) now than I was before coming to this university
I have performed academically as well as I anticipated I would
It is important for me to graduate from college
I am confident that I made the right decision in choosing to attend this university
It is likely that I will register at this university next fall
It is not important to me to graduate from this university
I have no idea at all what I want to major in
Getting good grades is not important to me