Casualties of Racism: Racial and Ethnic Discrimination and Suicidal Thoughts and Behaviors Among Racial and Ethnic Minority Emerging Adults

Lillian Anais Polanco

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CASUALTIES OF RACISM:
RACIAL AND ETHNIC DISCRIMINATION AND RISK FOR SUICIDAL THOUGHTS AND
BEHAVIORS AMONG RACIAL AND ETHNIC MINORITY EMERGING ADULTS

by

LILLIAN POLANCO

A dissertation submitted to the Graduate Faculty in psychology in partial fulfillment of the
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Casualties of Racism: Racial and ethnic discrimination and risk for suicidal thoughts and behaviors among racial and ethnic minority emerging adults

by

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ABSTRACT

Casualties of Racism: Racial and ethnic discrimination and risk for suicidal thoughts and behaviors among racial and ethnic minority emerging adults

by

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The evidence demonstrating that experiences of racial/ethnic discrimination is detrimental to the mental health of racial/ethnic minority youth is unequivocal. What remains unclear, however, is whether racial/ethnic discrimination increases vulnerability for suicidal thoughts and behaviors in particular, and if so, what are the underlying mechanisms to explain this relation. Drawing upon the Race-based Traumatic Stress Theory (Carter, 2007), which suggests that some individuals may experience racial/ethnic discrimination as a traumatic stressor, and thus, eliciting a traumatic stress response, the present study examined posttraumatic stress reactions (i.e., posttraumatic stress, depression, dissociation, stress sensitivity) as mediators in the relation between racial/ethnic discrimination and suicidal thoughts and behaviors among emerging adults, and whether this relation was modified by sex and race/ethnicity. Findings suggest that posttraumatic stress and depression mediate the relation between racial/ethnic discrimination stress and suicidal ideation among racial/ethnic minority emerging adults, particularly females. Additionally, increased frequency in racial/ethnic discrimination was associated with increases in suicide attempts to the degree that it increased dissociation, stress sensitivity depression, and suicidal ideation. The findings indicate that
racial/ethnic discrimination may increase risk for suicidal thoughts and behaviors among racial/ethnic minority emerging adults to the degree that it elicits traumatic stress reactions, and this may vary across race/ethnicity and sex. Racial/ethnic discrimination experiences should be accounted for when assessing and treating racial/ethnic minority youth at risk for suicide.
PREFACE

This dissertation serves to underscore the insidious presence and effects of interpersonal-level racism, which is ominously present in the lives of racial/ethnic minority youth. The racial and political climate of our country under the current administration has resurfaced a degree of overt racism that has been dormant for decades, making this research timely and much needed. Working on this project has truly been a labor of love, and the culmination of my scholarly work amassed over the past decade.

I would like to take this opportunity to thank all of those who have made this project possible including my research mentors, Drs. Deidre Anglin and Regina Miranda. I would also like to thank the rest of my committee members for their contributions to this dissertation: Dr. Elizabeth Jeglic, for her willingness to share her data, Dr. Eric Fertuck, for his expertise in suicidal behaviors, and Dr. Denise Hien, for her expertise in trauma and stress-related disorders. Additionally, I am grateful for Dr. Mark Steinberg and the RISE program at City College for investing in me as a research fellow, allowing me to more fully immerse myself in my research.

I would also like to thank my family, who has been tremendously supportive throughout my doctoral journey, specifically my husband, Carlos Roman and our new addition, Carlos Roman Jr., who are my inspiration and motivation. I would be remiss if I did not include my parents in this expression of gratitude, whose courage and sacrifices have allowed me to pursue my scholastic endeavors and instilled in me a dedication to social justice.

I hope you enjoy the read!

Sincerely,

Lillian Polanco-Roman
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CHAPTER 1: Introduction

Danny Chen, a 19-year-old Chinese-American male, shot himself after being subjected to racial harassment by his peers and superiors while serving a tour in Afghanistan in the U.S. Army (Semple, 2012). Marshawn McCarrel, a 23-year-old African-American male, shot himself in front of an Ohio Statehouse while rising as a leader in the Black Lives Matter movement protesting aggressive policing in Black communities (Lowery & Stankiewicz, 2016). Sandra Bland, a 28-year-old African-American woman, hung herself in a jail cell after being arrested for a minor traffic infraction during a routine stop that escalated into a verbal and physical altercation with a White, male police officer (Montgomery, 2015). While they may not represent a typical profile for who is most at risk for suicide (i.e., White males in their 40s or 50s), their untimely deaths involved race-based incidents and allude to the significant role of racism in vulnerability to suicide among racial and ethnic minority emerging adults.

Suicide is the 2nd leading cause of death among people ages 18-24 in the U.S. (Centers for Disease Control and Prevention, 2013), which makes emerging adulthood, the developmental period between adolescence and adulthood (Arnett, 2000), a particularly vulnerable period for thinking about or attempting suicide (Kessler et al., 2005). With rates steadily increasing in the past 30 years, particularly among females, suicide continues to be a major public health concern in the U.S. (Curtin, Warner, & Hedegaard, 2016). Following Native American populations, suicides are most prevalent among White adult males. However, the suicide rate among racial and ethnic minority populations (i.e., Black, Latino, and Asian individuals) is highest during adolescence and emerging adulthood (Centers for Disease Control and Prevention, 2013), compared to their White counterparts, whose suicide rates are highest during ages 45-54. Furthermore, rates of suicidal thoughts and behaviors, which are the most reliable predictors of
suicide (Nock et al., 2008), among racial and ethnic minority adolescents are appreciably higher than their White counterparts (Kann et al., 2014). The racial and ethnic disparity in suicidal thoughts and behaviors among young individuals has garnered some attention in the literature on suicide (Goldston et al., 2008), calling for a better understanding of how cultural experiences may impact risk for suicide, particularly among racial and ethnic minority youth.

One culturally-related experience in particular that has garnered some attention as a potential risk factor for suicidal thoughts and behaviors among racial and ethnic minority individuals is racial discrimination, or unfair treatment due to race or ethnicity (Cheng et al., 2010; Perez-Rodriguez et al., 2014; Hwang & Goto, 2009; Gomez, Miranda & Polanco, 2011; Polanco-Roman & Miranda, 2013; Walker, Salami, Carter & Flowers, 2014). In a nationally representative sample of Asian Americans, Cheng and colleagues (2010) reported that racial discrimination was positively associated with risk for suicide, such that individuals who reported greater racial discrimination were more likely to report lifetime suicidal ideation and attempts. Similar findings have also been reported among other racial and ethnic minority groups, unfortunately, the mechanisms through which racial and ethnic discrimination may increase risk for suicidal thoughts and behaviors remains to be elucidated. In an attempt to address the racial and ethnic disparity in suicidal behaviors, Chu and colleagues (2011) have proposed a cultural theory and model of suicide whereby they suggest various avenues through which cultural experiences may impact risk for suicide. One such avenue is the manner in which culture influences how individuals manifest and respond to distress. Another avenue is the cultural influences on how suicidal thoughts and behaviors are expressed. Lastly, culture may also influence the types of stressors that individuals confront. Thus, racial discrimination, as a race-related stressor, could operate through all three avenues: as a unique and common experience
among racial and ethnic minority individuals that may elicit specific manifestations of distress and subsequent responses to manage the distress.

The well-documented relationship between racial discrimination and negative mental health outcomes including suicidal thoughts and behaviors may be related to the way in which racial discrimination is subjectively experienced, and consequently, the responses elicited. More recently, scholars have suggested that racial discrimination may be more than just a negative experience, and better conceptualized as a race-based traumatic stressor in that race-based events such as racial discrimination – which are often perceived as negative, unexpected, ambiguous, repeated, and out of the individual’s control – may yield emotional and psychological injury by eliciting traumatic stress responses (Bryant-Davis & Ocampo, 2005; Carter, 2007; Ford, 2008; Harrell, 2000). Racism continues to plague racial and ethnic minority communities, and an attack on an individual’s sense of self and relation to others could, in turn, threaten his or her sense of safety and security, triggering a stress response.

Persistent exposure to racial discrimination may also have a cumulative effect, as increases in frequency of experiences of racial discrimination, compared to more isolated incidents, is associated with more negative mental health outcomes (Kessler et al., 1999). Emerging adults may be more vulnerable to the negative effects of racial discrimination than older adults (Kessler et al., 1999), which may be due to a lack of adequate resources or tools necessary to confront such experiences. Maladaptive responses to experiences of racial discrimination may compromise the individual’s mental health. Specifically, racial discrimination may yield post-traumatic adaptations, which may, in turn, increase susceptibility to thinking about or attempting suicide.
Traumatic experiences are characterized as uncontrollable, sudden, negative events perceived as threats that trigger a stress response. This response may persist to become posttraumatic stress (Carlson & Dalenberg, 2000). There is growing evidence demonstrating that trauma exposure and traumatic stress may increase vulnerability to suicidal thoughts and behaviors (Belik et al., 2007; Marshall et al., 2001; Selaman, Chartrand, Bolton & Sareen, 2014; Stein et al., 2010). For instance, a cross-national study of adults from 21 countries examined the association between traumatic events and suicidal behavior, and found that exposure to at least one traumatic event is associated with the onset and persistence of suicidal ideation and attempts (Stein et al., 2010). Therefore, posttraumatic stress may increase risk for thinking about suicide among racial and ethnic minority emerging adults.

A common consequence of trauma exposure is increased stress sensitivity, or a dysregulated, hypersensitive stress response (Dougall et al. 2001; Grasso et al., 2012; Smid et al., 2012). In fact, hyperarousal is a recognized cluster of symptoms for stress-related disorders such as Posttraumatic Stress Disorder, as outlined by the Diagnostic and Statistical Manual for Mental Disorders, 5th edition (DSM-5; APA, 2015). Another common consequence of trauma exposure is dissociation, characterized as an experienced loss of control over mental processes that results in alterations in conscious awareness and self-attribution (for a review, see Carlson, Dalenberg & McDade-Montez, 2012; Dalenberg & Carlson, 2012). Specifically, Carlson and colleagues (2012) propose that dissociative states are momentary lapses from reality in response to a threatening situation that is perceived as emotionally taxing and results from a loss of control over the environment.

Considering that stress sensitivity and dissociation are common responses to trauma exposure (Carlson et al., 2000), perhaps they may provide some insight into the relation between
racial and ethnic discrimination, as a race-based traumatic stressor, and suicidal ideation and attempts. In fact, recent research suggests that racial discrimination may increase risk for dissociative symptoms (Polanco-Roman, Danies & Anglin, 2016). Thus, experiences of racial and ethnic discrimination may increase vulnerability to posttraumatic stress reactions including depression, stress sensitivity and dissociation, which may increase vulnerability to developing suicidal thoughts and behaviors. Furthermore, this relation may be moderated by gender, as females exhibit greater stress reactivity to social stress in particular than males (Stroud, Salovey, & Epel, 2002). The relation between racial/ethnic discrimination, posttraumatic stress, and risk for suicidal thoughts and behaviors may also be moderated by race/ethnicity as racial and ethnic minority individuals exhibit greater stress sensitivity (DeSantis et al., 2007; Skinner et al., 2011) and dissociative responses (Douglas, 2009) compared to their White counterparts.
CHAPTER 2: Literature Review

Suicide – an intentional and fatal act of self-directed harm – is a major public health concern worldwide, accounting for the deaths of over 800,000 people annually (World Health Organization, 2012). In the U.S., it is the 10th leading cause of death for the general population, and the 2nd leading cause of death for people between the ages 15 and 24 (CDC, 2013). For every suicide, it is estimated that there are 25 suicide attempts – a non-fatal intentional act of self-directed harm, with intent to die. Though suicide attempt rates are appreciably higher than suicide death rates, it is one of the most reliable predictors of a completed suicide. Global suicide rates have been steadily increasing since such data have become available to the public (Kann et al., 2014), drawing much warranted attention from researchers and clinicians alike to improve our understanding of the etiology of suicidal thoughts and behaviors. In fact, it has prompted the development of a new category (i.e., Suicidal Behavior Disorder) in the latest revision of the Diagnostic and Statistical Manual of Mental Disorders 5th edition (APA, 2013).

Suicide rates are more prevalent among White males in the U.S. compared to females and racial and ethnic minority individuals, not including Native Americans. However, adolescence and emerging adulthood is a particularly vulnerable period for engaging in suicidal thoughts and behaviors among racial and ethnic minority individuals, as it accounts for the most fatal deaths due to suicide compared to their White counterparts, whose suicide rates are highest among older adults, or people ages 45-54 (Centers for Disease Control and Prevention, 2013). Furthermore, rates of suicidal thoughts and attempts among racial and ethnic minority adolescents are appreciably higher than their White counterparts according to epidemiological data obtained from a national high school survey (Kann et al., 2014). This pattern has persisted over the last 3 decades, since the data became available. The most recent data found that 12% of Native
American, 11% of Latino, 10% of Asian, 9% of Black, and 11% of students identifying with more than one race reported attempting suicide in the previous year compared to 6% of White teenagers. This pattern changes among emerging adults. Using a nationally representative sample of emerging adults (i.e. 18-26 years old), Lorenzo-Luaces and colleagues (2014) reported that non-Hispanic White and Hispanic individuals were significantly more likely to report suicidal ideation than non-Hispanic Black individuals and that there were no significant racial and ethnic group difference in suicide attempts. It should be noted, however, that racial and ethnic minority youth are less likely to disclose suicidal ideation than their White counterparts, which may be due, in part, to less acceptability of suicide among these communities (Morrison & Downey, 2000).

Gender differences are also evident in suicide rates as well as suicidal thoughts and behaviors. Whereas males are more likely to die by suicide, females are more likely to think about and attempt suicide. This gender paradox is evident across all racial and ethnic groups. This long-standing gender and racial and ethnic disparity in suicide and suicidal behaviors allude to the critical role of social and environmental factors in the etiology of suicidal thoughts and behaviors. Miranda and colleagues provide a more comprehensive review of age, gender, and race/ethnicity related trends in suicide and suicidal behaviors (Miranda, Ortin, Polanco-Roman, & Valderrama, 2017).

Models of Suicide

Various theoretical frameworks offer explanations of the suicidal process, but very few directly address socio-cultural factors that may help explain the racial and ethnic disparity in suicidal thoughts and behaviors in young populations (for a review, see Barzilay-Levkowitz & Apter, 2015). Several models that lend themselves to the research aims of this paper will be
discussed in further detail. In one of the earliest theories of suicide, Durkheim (1951, 1897) offered a sociological perspective, where he examined differences in suicide rates based on religious affiliation. He found that suicide rates were lower among Catholics compared to Protestants and concluded that Protestants demonstrated lower societal integration and social control, which he posited increased their risk for suicide. This idea may help explain the high rates of suicide among racial and ethnic minority youth, relative to their older counterparts, as they may feel disconnected from society and lack social control, as noted by Leong and colleagues (2013). Durkheim extends this logic to explain the gender difference in suicide, with men being at greater risk for suicide deaths, because “being a more instinctive creature than man, woman has only to follow her instincts to find calmness and peace,” (Durkheim, 1897, p. 272).

While Durkheim acknowledges the role of society in impacting risk for suicide, he fails to recognize the social influences in explaining the gender disparity in suicide. Instead, he attributes them to biological dispositions, as he suggests that suicidal behavior is more naturally a male behavior (i.e., aggression, risky behaviors).

Clinical models of suicide expand on this biological perspective emphasizing aggression and impulsivity, and identify psychiatric illness as one of the most reliable predictors of suicide (Mann et al., 1999). Specifically, mood disorders, personality disorders, psychotic disorders and substance/alcohol use disorders, especially co-morbid disorders, are consistently linked to increased vulnerability to suicidal thoughts and behaviors (Nock et al., 2008). This is supported by family studies, which indicate that a family history of suicidal behavior increases risk for an individual to think about or attempt suicide (Mann et al. 1999). The clinical model further suggests that psychiatric illness serves as a stressor, and traits such as aggression or impulsivity in response to distress are likely to increase risk for suicidal behaviors. Recently, neurological
research suggests that disruption in serotonergic activity in the brain, namely deficiency of serotonin in the anterior cingulate and ventromedial prefrontal cortex, is evident in depression and suicide intent (Mann, 2013). In other words, low serotonin may contribute to the onset of mood disorder as well as compromise decision-making, and increase aggression and impulsivity, which interact to increase suicidal intentions. Thus, the pathway between psychiatric illness and suicidal behaviors need not be causal, as risk for suicide may exist without a psychiatric illness, and neuroimaging studies indicate psychiatric illness and suicidal behavior have overlapping, but distinct, neural pathways (Jollant et al., 2011).

Perhaps racial discrimination increases risk for suicidal behaviors in part by increasing risk for psychiatric symptoms, as research consistently demonstrates a link between racial and ethnic discrimination and psychiatric illness among Black, Latino, and Asian populations in the U.S. (Chou et al., 2012). Racial and ethnic discrimination is associated with high stress and poor health outcomes, particularly among emerging adults, who are less likely to cope adaptively with discrimination compared to older adults (APA, 2016). By attributing causes for suicidal risk to biological factors, the clinical model assumes a universal pathway of risk for suicide without accounting for the influence of social and environmental stressors. Thus, it offers little explanation for the link between racial and ethnic discrimination and risk for suicidal thoughts and behaviors among racial and ethnic minority emerging adults.

Canetto (2008) challenges assertions that biological dispositions toward aggression drive suicide and accounts for the gender paradox in suicide specifically. Instead, she proposes that beliefs and attitudes around suicide influence fatal and nonfatal suicidal behavior. Further, she proposes that societies in which suicide is viewed as masculine are more likely to exhibit the gender paradox by turning this belief into a social norm and model, thus serving to discourage
females from engaging in fatal suicidal behaviors. She cites the lack of disparity in certain countries such as India and China, where suicide is socially sanctioned as a last resort response among the powerless, who are more often girls and women. Canetto and Sakinofsky (1998) demonstrated that the gender paradox was not a mere artifact of data (e.g., under reporting of suicide in males and over reporting of suicide attempts in females), but a natural phenomenon that exists worldwide. They noted that social influences such as gendered-type role and expectations play a critical role in contributing to the paradox. This challenges essentialist views that males are biologically predisposed to aggression, risk-taking and impulsivity, which is more likely to result in a fatal suicide attempt. Further, variations seen in suicide rates worldwide are not explained by variation in individual distress like mental disorders (Canetto, 2008), which highlights the role of social forces. In a prospective study on depressed men and women, Oquendo and colleagues (2007) found that fewer reasons for living was a significant predictor of future suicide attempts among women, but not among men. Thus, a woman’s traditional role as caregiver for her family, including children and elderly parents, may be protective against suicidal behavior. These socially prescribed influences may also extend to explain the racial and ethnic disparities evidenced in suicidal thoughts and behaviors, particularly among younger populations. For instance, Morrison and Downey (2000) reported that African American college students reported greater reasons for living and moral objections to suicide compared to European American college students. Also in contrast to the clinical models, Schneidman’s (1993) model shifts toward a more psychological framework in emphasizing psychological pain, or psychache (i.e., emotional pain that is intense and intolerable), and responses to manage or mitigate this pain, which results from unfulfilled psychological needs. This model was instrumental in distinguishing between suicidal ideation and attempts by examining processes
contributing to the transition from thoughts to behaviors, and laid the foundation for more contemporary models (Barzilay-Levkowitz & Apter, 2015).

Cognitive models prevail in elucidating risk for suicide in part by highlighting the critical role of stress and subsequent responses, namely appraisal of the stressful event. Wenzel and Beck (2008) suggest that a suicidal crisis results when a stressor interacts with predisposition vulnerabilities (e.g., psychiatric disorder, impulsivity, poor problem-solving skills) to yield maladaptive cognitive processes such as hopelessness and rumination (i.e., perseveration on a negative mood), which maintain and/or exacerbate the effects of the stressor. As this pathway becomes activated, a suicidal schema develops. Over time, the schema becomes more automatic and biases responses to future stressors and appraisals. Thus, the threshold for tolerating stress decreases, requiring less effort to activate the pathway and ultimately triggering a suicidal act. This model has received significant empirical support (Wenzel, Brown & Beck, 2009); however, like many of the suicidal models currently available, it assumes a universal suicidal process with an exclusive focus on individual factors that fails to account for social and environmental factors. Such factors may greatly influence the nature of stress exposure, and consequently impact cognitive vulnerabilities, as well as appraisal and adaptations to stressful events. For instance, frequent and unavoidable experiences of racial and ethnic discrimination may yield hopelessness and helplessness, rendering an individual susceptible to maladaptive cognitive appraisals and adaptations in an effort to manage the resulting race-related stress.

With greater consideration for social and emotional factors, the Interpersonal Theory of Suicide proposed by Joiner and colleagues (Van Orden et al., 2010) may offer some insight into risk for suicidal thoughts and behaviors among racial and ethnic minority emerging adults. Specifically, Joiner suggests that suicide results from the convergence of three processes:
thwarted belongingness, perceived burdensomeness, and an acquired capability to die by suicide. The former two together represent a desire for suicide through hopelessness, where thwarted belongingness stems from feelings of isolation and an unfilled need to belong; and perceived burdensomeness stems from feeling as though one is an imposition and a burden on others due to one’s inability to effectively address one’s internal struggles or alleviate one’s pain. The final factor is characterized as the capacity to die by suicide, where one develops a higher tolerance for pain and a lower fear of death. Thus, thwarted belongingness may arise over time from chronic exposures to racism. In other words, when receiving explicit and implicit messages from society that invalidate an individual’s experience within a culture that is devalued or considered inferior, the individual may internalize this feeling of worthlessness and develop hopelessness about feeling a sense of belonging. Suicide may then be perceived as an appealing solution to an inescapable feeling of loneliness and isolation. A recent systematic review of this model by Ma and colleagues (2016) indicated that the evidence is mixed, with more robust findings for perceived burdensomeness, and less support for sense of belongingness and acquired capability. The review also noted the lack of diversity in the samples and questioned the generalizability of this model across different populations. Thus, this model is limited in its ability to elucidate vulnerability to suicidal thoughts and behaviors among racial and ethnic minority youths because of its failure to account for culturally-related experiences that are salient to racial and ethnic minority individuals.

One of the few models to offer a more integrative perspective, namely by combining elements from the diathesis-stress, cognitive, behavioral, and interpersonal frameworks, the Integrated Motivational-Volitional Model proposed by O’Connor (2011) suggests that distal factors such as stress from the environment or life events may yield feelings of defeat and
entrapment, as the sense of self is threatened. Feelings of defeat and entrapment may arise from experiences of racial/discrimination, which can be chronic, ubiquitous and unavoidable, as racism is entrenched in our society. In this model, proximal factors such as cognitive (e.g., memory biases, rumination) and social processes (e.g., social support, thwarted belongingness) serve as moderators to prompt a transition to the formation of suicidal thinking and intention. Similarly, these cognitive and social processes may be impacted by experiences of racial and ethnic discrimination by increasing cognitive vulnerability and decreasing social connectedness, thus, making the individual more susceptible to thinking about suicide. Behavioral processes (e.g., access to means, impulsivity) interact to then transition the person from suicidal thoughts to suicidal behavior.

As previously mentioned, females are more likely to make a nonfatal suicide attempt and males are more likely to make a fatal attempt. Canetto (2008) highlighted the significant role of social and environmental influences in risk for suicidal behaviors in part by shaping attitudes toward suicide to explain the gender paradox of suicide. Expanding on Canetto’s (2008) socialization model of suicide, and drawing upon a developmental framework, Chu and colleagues (2010) propose a three-factor cultural theory and model of suicide to help address the racial and ethnic disparity in suicidal behavior. Culture is conceptualized as a highly variable system of meaning that is learned and shared among an identifiable group of people objectively (e.g., tools) and subjectively (e.g., customs, values, roles) and often transmitted intergenerationally (Betancourt & Lopez, 1993). Furthermore, racial and ethnic categories are social constructs that differentiate between groups of people, creating a collectively shared experience among racial and ethnic minority individuals.
Recognizing the influence of culturally-related experiences on the evolution of the suicidal process, Chu and colleagues (2010) suggest that culture impacts the precipitating stressors leading to suicidal thoughts and behaviors. For instance, stress resulting from discrimination or acculturation (i.e., navigating and adapting to a novel cultural environment) may engender lower social status and interpersonal conflicts through social discord. Additionally, meanings or appraisals attributed to these stressors and suicide as a concept can also be culturally sanctioned through messages of approval or acceptability. For instance, strong religious beliefs have been identified as a potential protective factor against suicidal behavior among African Americans, in part because they make suicide less acceptable (Anglin et al., 2005). Lastly, culture impacts how suicidal thoughts and behaviors are expressed. If suicide is less approved or accepted within a culture, this may not only impact an individual’s intent to act on suicidal thoughts, but also their willingness to disclose such thoughts to others. Specifically, Morrison and Downey (2000) found that African American college students were less likely to disclose suicidal thoughts during an intake interview at their counseling center until a formal risk assessment was conducted, compared to their White counterparts. They also found that African American students reporter greater moral objections to suicide than European American students. Thus, culturally-related experiences are deeply embedded along the suicidal process, and racial and ethnic discrimination plays a significant role.

Although our understanding of the suicidal process has expanded over the years, very little is known about the causes of the racial and ethnic disparity in suicidal thoughts and behaviors among younger populations. This may be due in part to a lack of research on how cultural experiences that play an important role in the lives of racial and ethnic minority emerging adults, such as experiences of racial and ethnic discrimination (Kessler et al., 1999;
Pérez, Fortuna & Alegría, 2008), may impact risk for suicidal thoughts and behaviors. Thus, a better understanding of the interplay between culturally-specific factors (e.g., racial and ethnic discrimination), as well as more universal factors (e.g., psychiatric illness), may provide further insight into the suicidal process among racial and ethnic minority emerging adults.

*The Psychological Effects of Racism*

The impact of racism on the psychology of racial and ethnic minorities has garnered considerable attention in the literature (APA, 2016). According to Harrell (2000), racism occurs in multiple contexts, ranging from interpersonal – on the level of the individual – to sociopolitical – on a broader level of the institutions within society. Thus, racism is conceptualized as a:

“A system of dominance, power, and privilege based on racial group designations: rooted in the historical oppression of a group defined or perceived by dominant-group members as inferior, deviant, or undesirable; and occurring in circumstances where members of the dominant group create or accept their societal privilege by maintaining structures, ideology, values, and behavior that have the intent or effect of leaving non-dominant group members relatively excluded from power, esteem, status, and/or equal access to societal resources.”

(Harrell, 2000, pg.43).

In other words, racism is systemic, as racial and ethnic minority populations have faced a longstanding history of oppression in the U.S., wherein societal norms are prescribed and preserved based on European or White standards. Thus, racism can manifest on an institutional level (e.g., segregation), where access to and quality of resources such as healthcare, education, housing, and employment are inequitably distributed across race/ethnic groups. Racism can also manifest interpersonally in many forms, such as thoughts (e.g., stereotypes, prejudice), and behaviors (e.g., discrimination), which serve to promote and maintain racism (Harrell, 2000). Although anyone can be subjected to such experiences, they are a salient part of the lives of people of color. In fact, national statistics indicate that racially/ethnically-biased incidents
account for nearly 60% of hate crimes reported by law enforcement, and are more often perpetrated against racial and ethnic minority individuals, particularly Black or African American individuals (Hate Crime Statistics, 2014). Furthermore, research demonstrates that racist-based incidents, whether experienced on an individual level or a societal level, negatively impact the health of racial and ethnic minorities and contribute to health inequities, independently of demographics, including age, gender, income, and education (Gee, 2002).

Thus, the psychological effects of racism are pervasive, pernicious, and elusive and may have a cumulative effect, wherein greater incidents yield more harm and destruction over time.

Racial and ethnic minority populations are more likely to experience certain environmental stressors such as those resulting from racism, which may increase risk for psychopathology. Perhaps what is presently perceived as a pathological response to environmental stressors, once served as an adaptive response to a pathological society. For instance, the origins of racism dates back to times of slavery; thus, the trauma of slavery may have engendered responses that were adaptive at the time and intergenerationally transmitted, as we continue to witness the effects in present day society, particularly among Black populations (Harrell, 2000). Recent epigenetic research indicates that parental trauma may cause genetic changes in their offspring and conclude that the aftermath of trauma exposure may be inheritable (Yehuda, 2015). However, given the inequitable distribution of power along racial lines, where the dominant (i.e., White) group has a greater say in determining what is pathological, the experiences of the non-dominant group (i.e., people of color) are marginalized. A better understanding of the psychological effects of racism could provide a more comprehensive view of the cultural context in which psychopathology and treatment occurs. This will ultimately improve the cultural competency of the delivery of mental health services, including prevention
and intervention services targeted at reducing risk for suicidal thoughts and behaviors, particularly among racial and ethnic minority emerging adults.

Racial and ethnic discrimination, or unfair treatment due to one’s racial or ethnic affiliation, is a behavioral manifestation of racism on an interpersonal level (Harrell, 2000). It may be experienced as a major life event (e.g., police unfairly stopping, searching, questioning, physically threatening or abusing them; being denied or overlooked for a promotion at work) or as a daily hassle or day-to-day experience (e.g., being treated with less respect and courtesy by neighbors, receiving poorer service than others). It may also be experienced in more subtle, ambiguous and covert forms (e.g., others invalidate or minimize your discriminatory experience), also referred to as microaggression (Sue et al., 2007). Moreover, racial and ethnic discrimination is commonly experienced among racial and ethnic minority individuals (Harrell, 2000; Landrine & Klonoff, 1996; Clark, Anderson, Clark & Williams, 1999), especially during emerging adulthood, or the period of development between adolescence and adulthood age (Kessler et al. 1999; Pérez, Fortuna, & Alegría, 2008). Thus, racial and ethnic minority emerging adults are particularly vulnerable to the psychological effects of racial and ethnic discrimination.

According to epidemiological estimates, almost half of the U.S. adult population perceives major discrimination of any kind at sometime in their life, and nearly 60% perceive day-to-day discrimination, and it is more commonly reported among individuals with social disadvantage status, including racial and ethnic minorities (APA, 2016). Similar estimates have been reported across racial and ethnic minority groups in relation to perceived racial or ethnic discrimination, including among Black (Seaton, Caldwell, Sellers, & Jackson, 2008), Latino (Perez, Fortuna & Alegría, 2008) and Asian (Gee, Spencer, Chen, Yip, & Takeuchi, 2007) populations in the U.S. Although findings from a nationally representative sample indicated that
African Americans report greater racial and ethnic discrimination than Asians and Latinos (Chou et al., 2012), findings are mixed. One study found that African American emerging adults reported greater racial and ethnic discrimination than Hispanic, but not Asian (Polanco-Roman et al., 2016) college students. Similar estimates have also been reported specifically among racial and ethnic minority adolescents (Tobler et al., 2013) and emerging adults (Kessler et al., 1999; Polanco-Roman et al., 2015). Research further suggests that younger adults report greater frequency of racial discriminatory experiences compared to older adults (Kessler et al., 1999; Pérez, Fortuna & Alegría, 2008), which makes emerging adults more vulnerable to the negative effects of racial discrimination than older adults. Thus, racial and ethnic discrimination is a salient aspect of the racial and ethnic minority youth experience, including emerging adults.

Nevertheless, these findings indicate that the nature of racial and ethnic discrimination and the subjective experience among racial and ethnic minority youth may vary across different racial and ethnic groups (Hwang & Goto, 2009; Greene, Way & Pahl, 2006). For instance, Hwang and Goto (2009) reported that Latino college students were more likely to report being accused or suspected of doing something wrong, and reported greater distress as a result, than their Asian peers. Similarly, Greene and colleagues (2006) found that Black and Puerto Rican urban high school students reported greater experiences of racial discrimination from adults (e.g., teachers, police officers), whereas Asian and Dominican students reported greater experiences of racial discrimination from peers. They further reported that while discrimination by adults increased over time across all groups, Black students reported the steepest increase. These differences allude to the wide-ranging effects of racial discrimination on the mental health of racial and ethnic minority youth, particularly Black youth.
The harmful effects of racial discrimination, specifically, are also well documented. It has been consistently linked to poor physical and mental health outcomes, including affective and stress-related disorders, across various racial and ethnic minority groups (Chou, Asnaani & Hofmann, 2012; Pascoe & Richman, 2009; Williams, Neighbors & Jackson, 2003; Williams & Mohammed, 2009). For instance, in a nationally representative sample of adults in the U.S., perceived racial discrimination was associated with a lifetime history of major depressive disorder, posttraumatic stress disorder and substance use disorder, independent of socioeconomic status, age, and gender (Chou, Asnaani & Hofmann, 2012). Chou and colleagues (2012) further reported racial and ethnic group differences in the relation between racial and ethnic discrimination and psychopathology. Specifically, Black and Hispanic adults were more likely to endorse psychopathology significantly associated with racial discrimination compared to Asian adults. Further, Black adults reporting racial and ethnic discrimination were more likely to meet criteria for Posttraumatic Stress Disorder (PTSD), whereas Hispanics reporting racial and ethnic discrimination were more likely to endorse symptoms of Major Depressive Disorder (MDD). This suggests that racial discrimination may be a unique and common social stressor that compromises the mental health of racial and ethnic minority individuals in varying ways. Research also indicates that greater frequency of experiences of racial discrimination have been linked to worse mental health outcomes compared to more isolated incidents (Kessler et al., 1999). This further suggests that there may be a cumulative effect of the toll that racial discrimination may take on an individual’s mental health. The chronicity and pervasiveness of the many forms in which racial discrimination occurs may explain the qualitative difference between race-related stressors and other stressors (e.g., work-related stress). Unfortunately, less is known about the underlying mechanisms through which racial discrimination may increase
vulnerability to psychopathology. However, how individuals respond to racial discrimination may provide some insight into the psychological effects of racial discrimination, and how it may impact risk for suicidal thoughts and behaviors.

**Stress as a Mechanism of Racial and Ethnic Discrimination**

Stress functions in part to mobilize an individual to avoid danger, and the effects of stress on mental health vary according to the nature of the stressor (Dougall et al., 2001). Racial and ethnic discrimination has been proposed as a race-related stressor that negatively impacts physical and mental health (Clark et al., 1999; Harrell, 2000), and the detrimental effects of racial and ethnic discrimination on mental health has received significant empirical support in the literature (Chou, Asnaani & Hofmann, 2012; Pascoe & Richman, 2009; Williams, Neighbors & Jackson, 2003; Williams & Mohammed, 2009). There is evidence to suggest race-related stress elicits a distinct coping response compared to general life stress (Brondolo et al., 2009; Hoggard et al., 2012; Sanders-Thompson, 2006). Additionally, physiological changes in response to racist-based incidents indicating dysregulation of the stress response system have been consistently identified (see Berger & Sanyai, 2015, for a review). Thus, the harmful effects of racial and ethnic discrimination may not be simply due to the resulting race-related stress, but also maladaptive responses elicited to manage the resulting distress.

Racial and ethnic discrimination may be experienced as a source of danger from the environment that threatens the physical and psychological well-being of an individual. It may also be experienced as an attack on behalf of the larger group with which the individual identifies; thus, making it a chronic and pervasive social stressor. As a result, the individual may lack agency and feel paralyzed to seek safety from the threat or lack the skills to adequately make sense or cope with this form of threat. Therefore, the effects of racial and ethnic
discrimination on mental health are influenced by ways in which individuals respond to manage the resulting distress (Brondolo et al., 2009; Pascoe & Richman, 2009; Sanders-Thompson, 2006), which may impact responses to future encounters of racial and ethnic discrimination. Considering its unique qualities, researchers have identified coping strategies specifically employed in response to race-related stress (Brondolo et al., 2009; Hoggard et al., 2012). For instance, Hoggard and colleagues (2012) found that Black college students employed distinct coping styles in response to race-related stress compared to general life stress. This prompted the development of the race-related coping scale and demonstrated preliminary support for the reliability and validity of the scale (Forsyth & Carter, 2014). Hoggard and colleagues (2012) found that African American college students reported significantly greater levels of rumination and avoidance in response to race-related stress compared to general life stress. As with general life stress, avoidant responses such as acceptance and resignation, while common responses to race-related stress, prove to be more harmful compared to more active approaches like problem-solving or seeking support (Utsey, Ponterotto, Reynolds & Cancelli, 2000; Noh & Kaspar, 2003). Similarly, Sanders Thompson (2006) reported that greater experiences of past racial discrimination were associated with re-experiencing symptoms among African Americans, but avoidance symptoms among European Americans. She further found that cognitive avoidance in response to experiences of racial and ethnic discrimination was associated with avoidance symptoms (e.g., emotional numbing, behavioral inhibition). Thus, certain responses to racial discrimination may exacerbate the effects of race-related stress and promote harmful adaptations. These findings indicate the harmful effects of racial discrimination may not be simply due to the resulting race-related stress, but also maladaptive responses elicited to manage the resulting stress.
The development of the self-concept plays a critical role in how individuals respond to and manage stress, as a sense of hope, agency, and competence are fundamental components obtained over time to form a healthy personality that are necessary to confront conflict and challenges in life (Erikson, 1963). According to Markus and Kitayama (2010), cultural experiences, whether positive or negative, impact the way in which we evaluate and organize our sense of self, identity, and agency. The process of identity development is dynamic and ever evolving, as our sense of self is influencing our behaviors, emotions, cognitions, and perceptions. It allows us to have a foundational understanding of our internal experiences and the external world as well as transactions between the two. It is composed of our past experiences, and informs the present and future experiences. They further propose a dynamic, cyclical relationship between the self and the cultural context in which the self exists in that they are mutually evolving and influencing one another. For instance, if an individual strongly identifies with a group that is marginalized and devalued in society, this may compromise the individual’s self-concept, as they may internalize messages of worthlessness, helplessness, and hopelessness.

Frequent experiences of racial discrimination may, over time, compromise an individual’s sense of hope, agency, and competence, and interfere with the acquisition and application of adaptive responses. Alternatively, if well-equipped to confront such experiences, the individual may respond by seeking contexts in which their experiences are validated and supported, and avoid contexts in which they lack a sense of belonging or feel their integrity is threatened. Furthermore, Markus and Kitayama (2010) have identified various patterns of conceptualizing the self, which guide normative standards of interactions between the self and others. One pattern is more egocentric where the needs of the individual are prioritized. Alternatively, a socio-centric pattern prioritizes the needs of a group, and the concept of the self
is rooted in relationships with others. Furthermore, these patterns may yield culturally-bound psychological processes. For instance, a differentiation between the self and other, which has been implicated in developing interpersonal and emotion regulation skills, may differ between these two patterns. Thus, the effect of experiences of racial and ethnic discrimination on mental health is due in part to the context in which it occurs, how it is subjectively experienced and appraised, and subsequently responded to by the individual. The effects of racial and ethnic discrimination may thus vary across racial and ethnic minority groups.

Racial and ethnic minority populations are likely to exhibit a socio-centric pattern, in that their sense of self is in large part influenced by their racial or ethnic group affiliations (Cross, 1995; Phinney, 1992). This may help explain the distress resulting from racial and ethnic discrimination, as it is perceived as an assault on the self, as well as the larger group. In fact, there is evidence to suggest that race-based incidents, such as experiences of racial and ethnic discrimination, spur the development of a racial and ethnic identity (Greene, Way, & Pahl, 2006). Further, racial and ethnic identity is believed to mitigate the harmful effects of racial and ethnic discrimination in part by promoting more adaptive coping responses such as attributing racial and ethnic discrimination to an external source instead of internal source (Neblett, Rivas-Drake & Umana-Taylor, 2012). A more cohesive sense of self wherein implicit and explicit messages transmitted from an individual’s environment are concordant and grounded in a strong sense of belonging to a group, albeit one that is socially stigmatized, contains protective properties. However, if a sense of self is overly compromised, a desire to escape reality may emerge, as the individual may feel ill-equipped to manage stress such as that resulting from racial discrimination. This desire to escape may ultimately engender suicidal thoughts and behaviors.
Recent neurophysiological research demonstrates that race-based events are experienced as stressors that trigger the arousal system. Specifically, racial and ethnic discrimination triggers the stress response, which gets activated when a threat is perceived. The state of arousal prompts the individual to respond to the threatening situation, which is organized by the hypothalamic-pituitary-adrenal (HPA) axis. Chronic stress dysregulates the arousal system, and this dysregulation has serious, long-term health consequences (Dougall et al., 2001). Thus, frequent exposure to race-based events, such as racial and ethnic discrimination, can be experienced as an additional stressor above and beyond general life stressors. This may make racial and ethnic minority individuals more vulnerable to physical and mental health problems, in part by dysregulating the stress response system.

Racial and ethnic differences have also been reported in stress activity (DeSantis et al., 2007; Skinner et al., 2011). Specifically, in a community sample of adolescents, DeSantis and colleagues (2007) found that African American and Hispanic teenagers exhibited a flatter cortisol response throughout the day compared to White teenagers, namely due to higher cortisol levels during bedtime, which they attribute to social and environmental factors that increase stress and accumulate throughout the day. They also examined social and emotional factors such as negative emotion, episodic and chronic life stress, and socioeconomic status as moderators, but found that they did not account for the group difference. Similarly, Skinner and colleagues (2011) found racial and ethnic group differences in stress responses among a group of emerging adults (i.e., 18-22 years old). They reported that Black young adults exhibited more blunted cortisol activity, with lower waking levels and higher bedtime levels, compared to White young adults, and this blunted cortisol activity was associated with HPA dysregulation and poor mental health outcomes. They also reported that experiences of racism (i.e., racial daily hassles) were
associated with flatter cortisol activity regardless of race. While this did not account for the racial and ethnic difference in stress responses, Black young adults reported greater and more chronic stress exposure than White young adults. These findings indicate that racial and ethnic minority emerging adults may exhibit greater stress sensitivity than their White counterparts, which may be due, in part, to increased and chronic exposure to race-related stressors such as that resulting from racial discrimination.

There is neurobiological evidence to suggest that race-related stress may disrupt the stress response (for a review, Berger & Sarnyai, 2015). For example, Richman and Jonassaint (2008) intended to simulate a race-related stressor by asking African American students recruited from Duke University to recount an experience of racial discrimination during a public speaking task while documenting their cortisol activity. Throughout the course of the study, however, a highly publicized scandal unexpectedly changed the study’s design. An African American woman was allegedly raped by White male students from Duke’s Lacrosse team, resulting in a tense racial climate on campus. The researchers found that participants assessed before the scandal had lower levels of cortisol compared to participants assessed after the scandal. This suggests elevated levels of race-related stress have a neurobiological effect on individuals, specifically, via stress hormones (i.e., cortisol). Moreover, participants assessed before the scandal exhibited a marked decline over time in cortisol activity after delivering their speech recounting a former experience of racial discrimination, whereas participants assessed after the scandal exhibited a flatter pattern of decline over time compared to participants assessed before the scandal. This suggests that race-related stress, which in this study was a combination of the racial tensions on campus deriving from the rape allegation and the delivery of a speech about a prior experience of racial discrimination, is a significant stressor that disrupts and blunts HPA activity, rendering the
individual vulnerable. Frequent exposure to such a stressor could have serious, deleterious effects on the mental health of racial and ethnic minority emerging adults.

Why racial discrimination may be experienced as a stressor may be further explained by cognitive and emotional responses, as evidenced by neural changes that occur in response to race-based events. Considering that racial discrimination may be experienced as threatening and processed as a psychological injury, researchers examined neural activity of racial and ethnic discrimination as psychological pain (Masten et al., 2011). Extending previous research demonstrating that ostracism and social rejection is processed as pain using fMRI technology, Masten and colleagues (2011) simulated racial discrimination using a computerized ball-tossing game, Cyberball, while tracking participants’ neural activity. The participants in the study identified as African American, and were instructed to play Cyberball with other players, who were White. Unbeknownst to participants, research confederates were instructed to exclude some participants from the game to induce a perception of racial discrimination. Thus, the researchers examined whether a race-related type of social rejection, or racial discrimination, would elicit similar neural activity in the brain that has been linked to processing pain stimuli. In comparison to the students who were not excluded from the game, those who were excluded exhibited activation in areas associated with pain and less activity in areas of the brain associated with emotion regulation. This suggests that racial discrimination may be processed as a painful stimulus, in part, because of a compromised ability to regulate emotions. Furthermore, participants who appraised the event as racial discrimination exhibited less neural activity in areas associated with pain and increased activity in areas associated with emotion regulation. Thus, the mere experience of race-based incidents, regardless of how the incident is appraised, will elicit a stress response. Further, an appraisal of the event may serve to regulate emotions to
mitigate the resulting distress, as ambiguity surrounding experiences of discrimination may be more distressing. This indicates that responses elicited to manage racial discrimination may impact the effect that race-based incidents may have on an individual’s well-being.

Increased stress activity in anticipation of racial discrimination has also been documented (Sawyer et al., 2012). Sawyer and colleagues (2012) instructed Latina emerging adults to work on a task together with a White peer (unknowingly a research confederate), and were informed whether their peer held racial and ethnic prejudices. They found in anticipation of the task, Latinas in the prejudice group reported greater concern about getting along with their partner and a more harmful cardiovascular profile (i.e., greater blood pressure and heart rate), than their peers in the non-prejudice group. This suggests that previous, painful experiences of racial discrimination may leave an indelible imprint on an individual that impacts their response to future encounters, or potential encounters, of discrimination.

Taken together, these recent findings demonstrate the neurobiological changes that occur in response to racial and ethnic discrimination and provide further support to suggest that racial discrimination functions as a race-related stressor, as it triggers and dysregulates stress response systems. Racial and ethnic discrimination may be experienced as painful, triggering a stress response to attend to the painful stimulus, and the effects of racial and ethnic discrimination are due, in part, to an individual’s assessment of his or her experience, as cognitive and emotional responses are key elements in managing a threat. As evidenced by Masten and colleagues’ (2011) findings, the discordance between an individual’s assessment of the event and the actual intention of the event appears to be more distressing, as individuals who appraised the event as racial discrimination exhibited less physical pain and more emotion regulation as indicated by neural activity in the brain. This suggests that the ambiguous nature of subtle and more covert
forms of race-based events may be more taxing, requiring additional resources (e.g., cognitive, ego) to cope with the event than would be required to address overt and direct forms of racism. This may be due in part to the conflicting and opposing messages the individual is receiving about this particular incident. In other words, the event may at first glance appear harmless and non-threatening, but subtle cues may have been processed as a potential threat, triggering the stress response system unbeknownst to the individual. An inability to reconcile the internal reaction with the external experience may consequently make the individual more vulnerable to adaptively respond to and mitigate the harmful effects of racial discrimination. Chronic exposure to such events may result in maladaptive reactions, whereby an individual may, over time, begin to exhibit posttraumatic stress symptoms in response to future experiences of racial and ethnic discrimination.

*Trauma Exposure and Suicidal Thoughts and Behaviors*

As previously noted, various models of suicide emphasize the role of stress, as the existing literature demonstrates that acute and chronic stressors are reliable risk factors for suicide (Nock et al., 2008). More recently, research suggests that severe stress resulting from exposure to trauma (i.e., posttraumatic stress) may increase risk for suicidal behavior (Belik et al., 2007; Mazza, 2000; Marshall et al., 2001; Selaman, Chartrand, Bolton & Sareen, 2014; Stein et al., 2010). For instance, individuals reporting at least one traumatic event in their lives were more likely to engage in suicidal thoughts and behaviors than individuals without trauma history (Belik et al., 2007). Furthermore, increases in the number or frequency of traumatic events was associated with greater frequency of suicide attempts (Stein et al., 2010). One way posttraumatic stress may increase risk for suicidal behaviors is through a dysregulated stress response that increases sensitivity and reactivity to future stressors (Van der Kolk, 2004). This dysregulation
has been linked to trauma exposure (Grasso et al., 2012) and suicidal behaviors (Giletta et al., 2014) independently. Dissociation may be another avenue through which posttraumatic stress may increase risk for suicidal behaviors, as research demonstrates PTSD and Dissociative Disorders may mediate the relation between psychological trauma and suicidal ideation and attempts (for a review, see Ford & Gomez, 2015b).

According to Carlson and Dalenberg (2000), traumatic experiences are characterized as uncontrollable, sudden, negative events perceived as threats that trigger a stress response, which may persist to engender posttraumatic stress. They further suggest that such experiences are emotionally distressing and induce feelings of helplessness, which subsequently impact cognitive, affective and biological processes. Specifically, they propose that traumatic stressors elicit a posttraumatic reaction if an event is appraised or perceived as negative. Therefore, the meaning attributed to the event and social context of the event are critical in inducing a response to mitigate the effects of the distress. The unanticipated nature of the event is believed to leave the individual ill-equipped to respond, placing them in a vulnerable position to effectively protect themselves from the threatening exposure. A lack of control or agency over the traumatic experiences may thus promote helplessness and discourages more active or healthy adaptations. They also outline posttraumatic reactions characterized by intrusive thoughts of the traumatic experiences, over-active stress response, affective alterations, and numbing, which are recognized as selection criteria for stress-related disorders by the latest revision of the Diagnostic and Statistical Manual for Mental Disorders, 5th edition (APA, 2013).

Evidence suggests that the link between trauma exposure and risk for suicide is in part due to a posttraumatic stress reaction elicited by the trauma exposure. In a meta-analysis of nearly 60 studies examining the relationship between PTSD and risk for suicide, Panagioti and
colleagues (2012) found that having a diagnosis of PTSD was strongly and positively associated with increased rates of suicidal thoughts and behaviors. This relation was consistent regardless of the type of trauma exposure (e.g., war veteran, interpersonal violence, natural disaster, childhood abuse), type of population (i.e., clinical, general), time of diagnosis (i.e., current, lifetime PTSD), or degree of suicidality (e.g., suicidal ideation, suicide attempt, completed suicide). Similarly, in another meta-analytic review of 50 studies examining the relation between PTSD and suicidal ideation and behaviors, Krysinska and Lester (2010) found that the relation remained even after adjusting for psychiatric diagnoses, including depression. These findings suggest an independent relationship between PTSD and suicidal thoughts and behavior, and indicate that more individuals are exposed to trauma than attempt or die by suicide. Thus, appraisal and response to trauma exposure plays a significant role in this relation.

Although not recognized as a clinical syndrome in the DSM as is Posttraumatic Stress Disorder (PTSD), complex trauma is proposed as an alternative posttraumatic reaction (Herman, 1992). PTSD often results from a type of trauma exposure that is isolated and acute, while complex trauma is conceptualized as a type of trauma that is chronic and cumulative that occurs within a specific context or relationship (Herman, 1992). It has often been used to characterize victims of abuse or combat exposure. Complex trauma is believed to generate several adaptations to the chronic trauma exposure, which may have been adaptive in response to the trauma, but is otherwise maladaptive, particularly in the area of interpersonal functioning. Such adaptations include: alterations in the regulation of affect and impulses; alterations in attention and consciousness; alterations in self-perception; alterations in perception of the perpetrator; alterations in relationship to others; somatization or medical problems; and alterations in systems of meaning. Similar adaptations have been reported among of individuals subjected to racism.
Furthermore, just as traumatic stress violates their existing meaning of their self and the world, racist experiences can yield similar reactions.

Adaptations to traumatic stress may also affect genetic expression, which may be transmitted to future generations; thus, some scholars propose the intergenerational transmission of environmental traumatic experiences such as slavery (Harrell, 2000). In fact, epigenetic research provides early evidence to support this notion in holocaust survivors (Yehuda et al., 2015). Specifically, Yehuda and colleagues (2015) examined genetic changes in parent-child dyads among holocaust survivors and their children in comparison to individuals with no exposure to the holocaust, and found that holocaust survivors exhibited genetic changes compared to non-trauma exposed individuals. Further, they found that the children of trauma survivors exhibited similar genetic changes as their parents independent of genetic changes associated with the child’s direct exposure to trauma. Thus, the effects of chronic traumatic exposure such as the byproducts of slavery, including racism, may be long lasting and hereditary.

Similar findings have been observed as it relates to risk for suicide in Native American populations, who have the highest suicide rates in the U.S. (CDC, 2013). Historical trauma, or trauma transmitted inter-generationally from earlier generations to later generations, is cited as contributing to risk for suicide among Native Americans (for a review, see Odafe et al., 2016). Specifically, children whose caregivers attended boarding school, as Native American children were forcibly removed from their homes and placed in boarding schools, were more likely to report increased thoughts of suicide and suicide attempts than children whose caregivers did not attend boarding school.

Trauma exposure, independent of a diagnosis of PTSD or any other stress-related disorder, has been linked to increased risk for suicidal behaviors, namely through subclinical
manifestations of posttraumatic stress or stress-related symptoms. For instance, in a school-based sample of adolescents, Mazza (2000) found that higher PTSD symptoms were associated with higher current suicidal ideation, independently of gender and depressive symptoms (and with having a suicide attempt history, though not after accounting for gender and depressive symptoms). Similarly, in a clinical sample of adults, Marshall and colleagues (2001) found that subclinical PTSD symptoms significantly raised the risk for concurrent suicidal ideation independently of a diagnosis of major depression. In one of the few studies to examine this relation prospectively, Hooper and colleagues (2015) used 14-year longitudinal data of low-income Black American adolescents in the U.S., and found that posttraumatic stress prospectively predicted future suicidal ideation, independently of prior suicidal ideation, among males and females. Recent research has also identified differences across stress-related symptom subclusters. Specifically, a nationally representative study investigating the relation between suicide attempts and PTSD symptoms in the U.S. found a significant relationship between suicide attempts and re-experiencing and avoidance symptoms, specifically, but not hyperarousal symptoms (Selaman, Chartrand, Bolton & Sareen, 2014). This finding alludes to the difference within the suicidal process, namely the relation between posttraumatic stress and risk for suicide may vary along the process. Thus, there is compelling evidence to suggest that posttraumatic stress, independent of a stress-related diagnosis including PTSD, is a significant risk factor for thinking about and attempting suicide. However, further information is warranted to better understand the mechanisms underlying this relationship.

One avenue that has been identified as a possible mechanism underlying the relation between exposure to trauma and increase risk for suicidal thoughts and behaviors is dissociation. Carlson and colleagues (2012) identified dissociation as a common response among trauma-
exposed individuals and characterized it as an avoidant response through which to manage acute distress. While the initial response may have been adaptive at the time of the stressor, it may develop over time into less adaptive dissociative symptoms. In other words, an individual may be unable to effectively process the intense negative affect resulting from an experience that compromises an individual’s sense of safety and security at the time, and momentarily disconnecting their internal experience from the threatening external environment is an attempt to manage the resulting acute distress. Trauma-exposed individuals may experience a varied severity in manifestations of dissociative symptoms across various dimensions, such as 1) distortions in perception of the self, events, and sensory information; 2) intrusions of trauma-related experiences, and 3) gaps in memory and awareness. There is empirical evidence demonstrating the relation between traumatic experiences and dissociation. For instance, the prevalence of trauma exposure is significantly greater than the prevalence of individuals reporting dissociative experiences; however, 90% of individuals in a community-based study reporting clinically significant dissociation reported a history of trauma (Briere, 2006). While exposure to trauma may not cause dissociation, it is likely to increase risk, and the nature of the trauma may impact this relation by compromising the manner in which individuals manage the resulting distress. Considering the chronic and pervasive quality of racial and ethnic discrimination as a race-related stressor, perhaps it may also elicit dissociative symptoms in response, particularly among racial and ethnic minority emerging adults with compromised coping skills.

Dissociation has also been characterized as existing on a spectrum that ranges from healthy (e.g., daydreaming, meditation) to pathological (e.g., Dissociative Disorder), and is further described as a culturally mediated process in which the experience of the self is
disengaged from the environment (Lewis-Fernandez et al., 2007). Lewis-Fernandez and colleagues (2007) further suggest that racial and ethnic minority individuals may be more likely to dissociate in response to environmental stressors such as racial discrimination, which may create the sense of an unsafe and threatening environment. There is empirical evidence to support this idea. For instance, one study found that Black and Asian college students reported significantly higher levels of dissociation compared to White college students (Douglas, 2009), but that dissociation was more strongly associated with psychological symptoms (i.e., depression, anxiety) among the White students. Unfortunately, there is a dearth of information about the relation between dissociation and suicidal behaviors, so very little is known about the nature of this relation. A few studies found that more pathological manifestations of dissociation, or dissociative symptoms, are linked to increased risk for suicidal thoughts and behaviors, particularly among trauma-exposed individuals (for a review, see Ford & Gomez, 2015a). Thus, dissociation may help explain the relation between posttraumatic stress and suicidal thoughts and behaviors. Orbach (1994) proposed that early and continuous stress leads to the development of dissociative reactions (e.g., indifference to joy and pain) and increased vulnerability to stress, which increases susceptibility to engaging in suicidal behaviors through stress intolerance, hopelessness, and helplessness. Ford and Gomez (2015b) further suggest that dissociation may interfere with regulation of emotions, which may increase vulnerability to thinking about or attempting suicide.

Another response to trauma exposure that has been linked to risk for suicide is increased stress sensitivity, or a hyperresponsive stress response (Turecki et al 2012, Giletta et al, 2014; Grasso et al., 2012). Traumatic experiences may elicit a severe stress reaction and promote hypersensitivity to cues associated with the trauma, which may serve as a preparatory response
to avoid future traumatic experiences (Carlson, 2000). This pattern of dysregulation of the stress response has been observed in individuals at high risk for suicidal behaviors. Turecki and colleagues (2012) further propose that traumatic experiences interfere with the healthy development of regulatory systems including the stress response, which has received empirical support. For instance, Giletta and colleagues (2014) found that teenage females with a hyperresponsive stress system (as measured by cortisol levels) were more likely to report suicidal ideation three months later compared to adolescents with a hyporesponsive or normative stress response, even after adjusting for prior suicidal ideation. Looking at heart rate variability among females, Wilson and colleagues (2016) found that females with a history of suicide attempts exhibited a decrease in high frequency heart rate variability in response to social stress, which is indicative of a dysregulated stress response. Thus, stress sensitivity is a reliable risk factor for suicidal thoughts and behaviors. Gender differences have been documented in stress responses, with women endorsing greater sensitivity to social stress than men (Stroud et al., 2002). Specifically, Stroud and colleagues (2002) found that women exhibited greater cortisol levels in response to social rejection, whereas men exhibited greater cortisol in response to achievement-related stress (e.g., academic tasks). This indicates that the nature of stress may elicit different responses between males and females, and that women, in particular, may be more sensitive to social stress.

*Racial and Ethnic Discrimination and Suicidal Thoughts and Behaviors*

The majority of suicide models have largely focused on intrapersonal and more universal risk factors such as increased aggression and hostility, hopelessness, impulsivity, psychiatric disorders, brain dysfunction and neurophysiological vulnerabilities (Barzilay-Levkowitz & Apter, 2015; Nock et al., 2008; Miranda et al., 2017). Additionally, the research on preventing
suicide among youth has relied heavily on Eurocentric perspectives due in part to the study of suicide among predominantly White samples (Joe, Canetto, & Romer, 2008). Thus, these models are limited in explaining risk for suicidal thoughts and behaviors among racial and ethnic minority emerging adults, as the suicidal process may be influenced by cultural experiences, and thus varies across racial and ethnic groups (Leong et al., 2013; Goldston et al., 2008). This has been empirically supported, as research indicates racial and ethnic differences in risk factors associated with risk for suicide, particularly among young adults (Durant et al., 2006; Gutierrez et al., 2001; Hirsch et al., 2012a; Hirsch et al., 2012b; Lorenzo-Luaces & Phillips, 2014; Perez-Rodriguez et al., 2008; Watt et al., 2002). For instance, Hirsch and colleagues (2012a) reported that trait hope (i.e., self-efficacy) moderates the relation between depressive symptoms and suicidal behavior among White college students, but not among Black, Asian, or Hispanic students, whereas hopelessness (i.e., a negative outlook on the future) significantly moderated the relation only among Black students. Similarly, Hirsch and colleagues (2012b) further found that while loneliness moderated the relation between social problem-solving and suicidal behavior among White, Black, and Asian students, life stress was a significant moderator among Hispanic students. Additionally, Gutierrez and colleagues (2001) found that negative attitudes toward life was a significant predictor of suicidal ideation among White college students, but not among Black and Hispanic students, despite reporting lower levels. These findings indicate that the pathway to vulnerability for suicide may vary across racial and ethnic groups, as an individual’s social and cultural environment may influence the type of stressors they are exposed to, how distress manifests, and responses elicited to manage distress, all of which play a significant role in the suicidal process.

Models focusing on more culturally-specific factors may offer additional insight in
elucidating risk for suicide among racial and ethnic minority youth. For instance, the Cultural Theory and Model of Suicide proposed by Chu and colleagues (2010) specifically cites exposure to environmental stressors as early insults that may interact with other culturally influenced factors such as idioms of distress and attitudes toward suicide, and these may increase vulnerability to endorsing suicidal thoughts and behaviors. Specifically, they propose that repeated exposure to such social adversities may develop into suicidal ideation through a generation of maladaptive cognitive biases and affective states that can result in the formation of suicidal symptomatology. For instance, repeated exposure to a threat may, over time, dysregulate emotional processes and attenuate cognitive control, rendering the individual less able to cope, and consequently, more vulnerable to future injuries. There is empirical evidence to suggest that culturally-related stressors may increase risk for suicidal thoughts and behaviors (for a review see, Chu et al., 2010). These include stress resulting from acculturation, in which an individual adapts to a new cultural environment (i.e., acculturative stress), stress resulting from being a minority and lacking a sense of belonging and support (i.e., minority stress), and stress resulting from racial discrimination, in particular.

Our understanding of the effects of racial and ethnic discrimination and mental health has expanded over the years. However, we are only beginning to examine the relation between racial discrimination and risk for suicide. There is growing empirical evidence that racial discrimination may increase risk for thinking about and attempting suicide, and this has been reported across various racial and ethnic minority populations, including Asian, Black and Latino individuals (Cheng et al., 2010; Perez-Rodriguez et al., 2014; Hwang & Goto, 2009; Gomez, Miranda & Polanco, 2011; Odafe et al., 2016; Polanco-Roman & Miranda, 2013; Walker, Salami, Carter & Flowers, 2014). For instance, in a community sample of African American
adults, Walker and colleagues (2014) found a direct and indirect association between racial and ethnic discrimination and suicidal ideation via depressive symptoms. In a nationally representative sample of Asian American adults, individuals who reported greater racial discrimination were significantly more likely to report a history of suicidal ideation and suicide attempts (Cheng et al., 2010). There were similar findings among adolescents and emerging adults across racial and ethnic groups. In a sample of Latino and Asian college students, Hwang & Goto (2009) found that higher racial and ethnic discrimination was significantly associated with higher suicidal ideation. Among Latino, Asian, and White adolescents, Tobler and colleagues (2013) found that greater frequency in experiences of racial discrimination and greater subjective distress associated with said experience was associated with higher odds of reporting suicidal ideation in the past year. Gomez and colleagues (2011) reported that racial and ethnic discrimination was associated with 5 times higher odds of endorsing a suicide attempt history. They also found racial and ethnic group differences in the relation between racial and ethnic discrimination and risk for suicide, as the relation was significant among Latino and White, U.S.-born participants, but not among Asian and Black participants. Similarly, in a sample of African American emerging adults, Castle and colleagues (2011) found no direct relation between racial discrimination and suicidal ideation or attempts. These findings suggest that racial and ethnic discrimination may increase risk for suicidal thoughts and behaviors among racial and ethnic minority emerging adults. They also allude to the complexity of the relation, as it may vary across racial and ethnic groups. Thus, the relation between racial and ethnic discrimination and risk for suicide may be less direct, which calls for a better understanding of the underlying mechanisms in this relation.

Researchers have begun to explore various psychological processes as potential
explanatory factors to provide some insight into the relation between racial and ethnic discrimination and risk for suicide, including well-documented risk factors such as hopelessness (Polanco-Roman & Miranda, 2013). Specifically, while Polanco-Roman and Miranda (2013) reported no direct relation between racial and ethnic discrimination and suicidal ideation, they did find an indirect relation through hopelessness among individuals reporting low levels of ethnic identity. In other words, higher racial and ethnic discrimination was associated with higher suicidal ideation to the degree that it was associated with higher hopelessness, but only among individuals who did not strongly identify with their racial and ethnic group. This finding indicates that racial and ethnic discrimination may be a unique and added stressor among racial and ethnic minority emerging adults that may yield hopeless cognitions, and subsequently increase risk for suicidal ideation if they do not have strong ethnic group affiliation to assist them in developing adaptive coping responses. Religiosity has also been identified as a factor that may help explain the relation between racial and ethnic discrimination and risk for suicide, particularly among African American adults, as Walker and colleagues (2014) reported that racial discrimination was more significantly associated with suicidal ideation through depressive symptoms among African American adults with lower religiosity. Thus, culturally-specific factors (e.g., ethnic identity and religiosity) have been identified to elucidate the relation between racial discrimination and risk for suicidal thoughts and behaviors, as, as they may impact the cross-cultural differences in the manifestations and response to distress, including race-related stress through experiences with racial and ethnic discrimination. These findings suggest that some reactions to racial and ethnic discrimination may be more adaptive than others, and more maladaptive reactions may increase vulnerability to thinking about and attempting suicide among racial and ethnic minority emerging adults. A model that incorporates culturally-specific as well
as the more well-documented and universal factors may better elucidate the risk for suicidal thoughts and behaviors among racial and ethnic minority youth.

Racial and ethnic discrimination is a unique race-related stressor, in that it is a chronic, pervasive, and pernicious type of stressor that some racial and ethnic minority youth may be ill-equipped to confront. An inability to adaptively respond to and manage the stress resulting from racial discrimination may then elicit maladaptive responses that render the individual vulnerable to thinking about suicide and/or enacting these thoughts. A better understanding of the underlying mechanism in the relation between racial discrimination, and suicidal behaviors may provide some insight into the racial and ethnic disparity in suicidal behaviors among young populations. This would continue the line of inquiry originally posited by W.E.B. DuBois when he introduced the concept of double-consciousness to highlight a split in identity in which one views oneself through their lens and through the lens of the oppressor. These different views often conflict, and may be a source of vulnerability by testing the boundary of reality, making an escape from reality an appealing alternative. Perhaps an individual may see suicide as a way to permanently disconnect from a society that is experienced as unwelcoming, threatening, and oppressive. Considering that more individuals experience racial discrimination than actually think about or make a suicide attempt, some individuals find more adaptive ways of coping with such an environment, as this buffers against the harmful effects of racism. Thus, it remains unclear what aftereffects of racial and ethnic discrimination may increase risk for thinking about and attempting suicide, specifically among racial and ethnic minority youth. A framework that may provide some insight is that of race-based trauma, as it highlights the significance of how racial and ethnic minority individuals respond to experiences of discrimination.

*Racial Discrimination as Race-Based Traumatic Stress*
With the growing empirical evidence demonstrating stress as a mechanism of the effects of racial and ethnic discrimination, scholars have expanded on the concept of racial discrimination as a race-related stressor by highlighting the manners in which individuals respond to such experiences and proposing that some individuals may be more vulnerable than others to processing racial and ethnic discrimination as a traumatic stressor (Bryant-Davis & Ocampo, 2005; Carter, 2007; Ford, 2008; Harrell, 2000). This framework draws upon various models of trauma, including, specifically, cognitive models (Ehlers & Clark, 2000) and developmental models (Carlson, 2000; Herman, 1992). Thus, subjective experiences may impact how individuals respond to future experiences, and frequent experiences may engender maladaptive reactions to elicit and maintain stress-related reactions. Carter (2007) proposes that racial discrimination may be perceived as a threat to the integrity and safety of the individual and function as a potential source of traumatic stress, also referred to as race-based traumatic stress. Specifically, racial discrimination may yield emotional and psychological injury that negatively impacts mental health through eliciting traumatic stress responses, as such events are often perceived as negative, unexpected, ambiguous, repeated, and out of the individual’s control. He further proposes that there are a variety of ways in which individuals may respond, cope, and adapt to race-based traumatic stress, including hypervigilance, avoidance or numbing, and emotional distress. While the responses may be adaptive in the short-run to mitigate the distress resulting from racial and ethnic discrimination, they may be maladaptive outside of this context. However, given the chronicity and pervasiveness of racial and ethnic discrimination, racial and ethnic minority individuals may find few spaces or experience difficulty in discerning between safe and unsafe places where they are protected from such experiences. These maladaptive responses may increase susceptibility to psychopathology, including suicidal thoughts and
behaviors.

The cognitive model of posttraumatic stress proposes that cognitive biases in the processing of trauma are at the root of the pathology. Specifically, appraisal of the traumatic experiences and the nature of the trauma memory foster a sense of ongoing threat and promote maladaptive cognitions and behavior, which interfere with reformulating the appraisals and memories (Ehlers & Clark, 2000). Maladaptive behavioral strategies are also cited by Ehlers and Clark (2000) as contributing to posttraumatic stress symptoms and interfering with the change in appraisal and nature of the trauma memories. They propose that these strategies are attempts to seek safety in that they serve to avoid thinking about the traumatic experience. These safety-seeking behaviors are indicative of dysfunction in inhibitory control, as they are often counterproductive and destructive. For instance, alcohol use is a common safety seeking strategy, as it promotes avoidance and numbing, but also serves as an impediment to the reprocessing of the appraisals and memories. Thus, this model highlights the appraisal and the meaning-making process of the traumatic experience, which fosters a perception of threat, and promotes subsequent attempts to avoid the perceived threat. Racial and ethnic discrimination may thus be appraised as persistent and ongoing threat, rendering the individual vulnerable to developing maladaptive cognitions and behaviors in an attempt to seek safety from the threat. The developmental models of posttraumatic stress (Carlson, 2000; Herman, 1992) highlight the cumulative and deleterious effect of persistent exposure to trauma where maladaptive reactions to the trauma develop overtime and render the individual more vulnerable to the effects of future stressors. Such maladaptive reactions include cognitions and behaviors as cited by the cognitive models, but also difficulties in self-regulation, including tolerating distress, regulating emotions, and interpersonal experiences.
Such models of trauma provide a framework to conceptualize racial discrimination as a race-based traumatic stressor. Racial discrimination is one form of race-based traumatic stress (Bryant-Davis & Ocampo, 2005; Carter, 2007; Ford, 2008; Harrell, 2000), as such experiences are often chronic, interpersonal, ambiguous in nature, and yield considerable helplessness and distress. A power dynamic is at the root of the trauma in which individuals subjected to racial and ethnic discrimination are rendered powerless and helpless, which may promote fear and isolation without adequate support. In support, the sequelae of racial discrimination are also commonly experienced in response to trauma exposure, as disruptions in arousal and reactivity, negative alterations in cognitions and mood, and behavioral/cognitive avoidance are symptomatic criteria for stress-related disorders, including PTSD, as outlined in the DSM-5 (American Psychiatric Association, 2013). Furthermore, Carter and Forsyth (2010) found that racial and ethnic minority adults who reported direct experiences with racism also reported higher levels of anxiety, guilt/shame, avoidance/numbing, and hypervigilance compared to individuals who did not. When queried further about their racist experiences, 78% of individuals experienced the events as stressful, and 44% reported feeling stressed for a long period of time after the event (i.e., 2-12 months). Similarly, experiences of racial discrimination have also been linked to posttraumatic stress symptoms (Cheng & Mallinckrodt, 2015; Flores, Tschann, Dimas, Pasch, & de Groat, 2010; Pieterse, Carter, Evans, & Walter, 2010; Wei, Wang & Heppner, 2012). For example, Pieterse and colleagues (2010) reported that higher levels of perceived racial discrimination was significantly associated with higher levels of self-reported posttraumatic stress symptoms among Black college students, even after adjusting for general life stress. Among Asian students, this relationship was not evident, but researchers did find that a negative racial climate was associated with increases in posttraumatic stress symptoms. In a
similar vein, Flores and colleagues (2010) found that among adolescents who reported more racial discrimination, increases in posttraumatic stress symptoms was associated with increases in drug and alcohol use, a common avoidant coping strategy evident in trauma-exposed individuals. Most recently, Polanco-Roman and colleagues (2016) found that increases in racial and ethnic discrimination among a racially/ethnically diverse sample of college students was associated with increases in dissociative symptoms, even after adjusting for more general trauma experiences. Taken together, these findings offer empirical support for the theoretical model of racial discrimination functioning as a race-based traumatic stressor among racial and ethnic minority emerging adults. This may offer some insight into the relation between racial/ethnic discrimination and risk for suicidal thoughts and behaviors, particularly among racial/ethnic minority emerging adults.

The Present Study

The overall goal of the present study was to determine the underlying mechanisms in the relation between racial/ethnic discrimination stress and risk for suicidal behaviors. The framework of racial/ethnic discrimination as a race-based traumatic stressor was used to help explain the relation, considering the established association between trauma exposure and risk for suicide. Specifically, the present study examined trauma-induced reactions as potential mechanisms underlying the relation between racial/ethnic discrimination and risk for suicidal ideation (SI) and suicide attempts (SA), particularly among racial/ethnic minority emerging adults for whom experiences of racial/ethnic discrimination is common.

This goal was addressed via two studies. The goal of Study 1 was to examine posttraumatic stress and depression as explanatory factors in the relation between racial/ethnic discrimination stress and suicidal ideation, and whether this relation would vary across
racial/ethnic groups, given that racial/ethnic minority emerging adults are more vulnerable to the harmful effects of racial/ethnic discrimination than their White counterparts. Sex was also examined as a moderator, considering that females are more vulnerable to the harmful effects of social stress compared to males. The goal of Study 2 was to build on the severity of risk for suicide and examine whether the pathway of risk for suicidal ideation from racial/ethnic discrimination extends to suicide attempts among racial/ethnic minority emerging adults. Thus, Study 2 examined trauma-induced reactions (i.e., stress sensitivity, dissociation, depression and suicidal ideation) as explanatory factors in the relation between frequency of racial/ethnic discrimination and suicide attempts among racial/ethnic minority emerging adults, as increased frequency of experiences of racial/ethnic discrimination has a harmful, cumulative effect over time.

It was hypothesized that racial and ethnic discrimination stress would be positively associated with SI through increases in posttraumatic stress and depression. Race/ethnicity was expected to moderate this relation, in that the relation between racial and ethnic discrimination and SI through posttraumatic stress and depression would be stronger among racial and ethnic minority emerging adults compared to their White counterparts, given the increased frequency of experiences of racial/ethnic discrimination among racial/ethnic minority emerging adults. Similarly, it was expected that the relation between racial and ethnic discrimination, posttraumatic stress, depression and SI would be stronger among females than males.

**Hypothesis 1:** There will be a significant, positive relation between racial/ethnic discrimination stress, suicidal ideation, posttraumatic stress, and depressive symptoms.

**Hypothesis 2:** Posttraumatic stress and depressive symptoms will mediate the relation between racial/ethnic discrimination stress and suicidal ideation.
Hypothesis 3: Race/ethnicity and sex will moderate the mediation effect of posttraumatic stress and depressive symptoms on the relation between racial/ethnic discrimination stress and suicidal ideation.

These hypotheses were tested with Study 1. Thus, the findings from Study 1 established a relation between racial and ethnic discrimination stress, posttraumatic stress, depressive symptoms, and suicidal ideation as well as whether this relation would vary across race/ethnicity and sex. It was hypothesized the pathway would be moderated by race/ethnicity and sex such that it would be stronger among racial/ethnic minority and female.

In Study 2, it was hypothesized that frequency in racial/ethnic discrimination would be positively associated with stress sensitivity, dissociation, depression, suicidal ideation, and suicide attempts. Furthermore, it was hypothesized that stress sensitivity and dissociation would help explain the relation between frequency of racial/ethnic discrimination and suicide attempt to the degree that it increased depression and suicidal ideation among racial and ethnic minority emerging adults, adjusting for general trauma exposure.

Hypothesis 4: There will be a significant, positive relation between frequency of racial/ethnic discrimination, suicide attempts, suicidal ideation, dissociation, and stress sensitivity.

Hypothesis 5: The relation between frequency of racial and ethnic discrimination and suicide attempt will be explained through a serial relation between stress sensitivity, depression and suicidal ideation.

Hypothesis 6: The relation between frequency of racial and ethnic discrimination and suicide attempt will be explained through a serial relation between dissociation, depression and suicidal ideation.
These hypotheses were tested in Study 2. The findings from Study 2 will establish a relation between racial/ethnic discrimination frequency and suicide attempts through a serial mediation from depressive symptoms, stress sensitivity, dissociation, and suicidal ideation, among racial/ethnic minority emerging adults.
CHAPTER 3: Sex and Racial/Ethnic Differences in Posttraumatic Stress and Depressive Symptoms Mediating the Relation Between Racial/Ethnic Discrimination and Suicidal Ideation (Study 1)

The aim of study 1 is to examine whether the relation between racial/ethnic discrimination stress and suicidal ideation is explained by posttraumatic stress and depressive symptoms among emerging adults. It also aims to examine the extent to which this relation is consistent across race/ethnicity and sex. It was hypothesized that stress from racial and ethnic discrimination would be positively associated with suicidal ideation, posttraumatic stress, and depressive symptoms. It was hypothesized that the relation between racial/ethnic discrimination stress would be mediated by posttraumatic stress and depressive symptoms. It was also hypothesized that this mediated relation would be moderated by race/ethnicity in that the effect of racial/ethnic discrimination stress on suicidal ideation through posttraumatic stress and depressive symptoms would be stronger among racial and ethnic minority (i.e., Black, Hispanic, Asian, Other non-White) than among White emerging adults, as racial/ethnic minority individuals are more likely to experience racial/ethnic discrimination as stressful, and thus, more vulnerable to developing posttraumatic stress and depressive symptoms compared to White individuals. It was also hypothesized that the mediated relation would be moderated by sex in that the effect of racial and ethnic discrimination on suicidal ideation through posttraumatic stress and depressive symptoms would be stronger among women than men, as women are more vulnerable to social stressors than men.

Method: Study 1

Sample
Participants ($N = 1,541$) were emerging adults, ages 18-29 ($M = 19.88; SD = 2.25$), from a public university in the Northeastern U.S., who were recruited for a larger, ongoing study examining risk and protective factors associated with suicidal thoughts and behaviors. The sample was predominantly (72%) female. Further, 76% of individuals reported they were born in the U.S. The sample was racially and ethnically diverse, with 46% identifying as Hispanic/Latino, 20% non-Hispanic White, 18% non-Hispanic Black, 12% Asian, and 4% identifying as other race/ethnicity. For more information on sample characteristics by sex and race/ethnicity, see Table 1.

Measures

Demographic. Information was collected, such as age, sex, race/ethnicity, and place of birth of self and parents. Participants self-identified sex and a category for female and male was created. Participants self-identified race/ethnicity in response to from various options in response to “Choose one category that best captures how you see yourself?” and from the options provided, five categories were created: White, Black, Asian, Hispanic, and other race/ethnicity.

Racial/ethnic Discrimination Stress. Racial and ethnic discrimination stress was assessed using the General Ethnic Discrimination Scale (GEDS; Landrine et al., 2006), an 18-item self-report scale that inquires about the frequency with which individuals perceive racial and ethnic discrimination in the past year across various settings (e.g., “How often have you been treated unfairly by teachers and professors because of your race/ethnic group?”), and responses ranged from 1 “Never” to 6 “Almost all the time.” Participants also reported on the subjective distress experienced by each item (e.g., “How stressful was this for you?”), with responses ranging from 1 (“Not at all stressful”) to 6 (“Extremely stressful”). The GEDS has demonstrated high internal consistency reliability in frequency and stress appraisal among a racially/ethnically diverse group.
of college students and adults in the community ranging in age 18-86 ($\alpha = .91 - .95$). Summing all frequency items, with a greater total representing greater frequency, a composite was created for frequency of racial/ethnic discrimination. In the present sample, frequency of racial/ethnic discrimination experiences ranged from 17-90, and demonstrated high internal consistency reliability ($\alpha = .94$). Similarly, summing all stress items, with a greater total representing greater stress, a composite was created for racial/ethnic discrimination stress. In the present sample, racial/ethnic discrimination stress ranged from 17-102, and demonstrated high internal consistency reliability ($\alpha = .95$).

_posttraumatic stress symptoms_. The impact of events scale-revised (IES-R; Weiss, 2007) is a 22-item self-report scale that inquires about the subjective distress within the past week resulting from a stressful experience. Items correspond directly to the symptoms of PTSD as outlined in the DSM-IV-TR (APA, 2000), and fall within 3 symptom clusters: 6 items for hyperarousal (e.g., “I was jumpy and easily startled”), 8 items for avoidance (e.g., “I felt as if it hadn’t happened or wasn’t real”), and 8 items for intrusion (e.g., “Any reminder brought back feelings about it”). Participants are instructed to indicate the degree to which they were distressed or bothered by a stressful life event during the previous 7 days on a Likert-type scale ranging from 0 (“Not at all”) to 4 (“Extremely”). The scale has demonstrated high internal consistency reliability among adults with trauma exposure across the 3 subscales ($\alpha = .95$), and strongly correlates with other measures of stress-related disorders such as PTSD (Beck, et al., 2008). In the present sample, the overall scores ranged from 0-88, and demonstrated high internal consistency reliability ($\alpha = .96$). Each of the subscales demonstrated high internal consistency as well: hyperarousing ($\alpha = .89$); avoidance ($\alpha = .90$); and intrusion ($\alpha = .93$).
Depressive Symptoms. The Beck Depression Inventory (BDI-II; Beck, Steer & Brown, 1996) is a 21-item self-report inventory that measures the presence and severity of depressive symptoms, such as bouts of crying, hopelessness, anhedonia, guilt, and sleep disturbance in the past two weeks. Items are scored on a Likert-type scale ranging from 0 to 3, with higher totals representing more severe depressive symptoms. The scale has demonstrated high internal consistency reliability in a non-clinical college student sample ($\alpha = .93$), high test-retest reliability ($\alpha = .93$), and is strongly correlated with other depression measures (Beck et al., 1996). In the present sample, scores ranged from 0-49, and the scale demonstrated strong internal consistency reliability ($\alpha = .89$).

Suicidal Ideation. The Suicidal Behaviors Questionnaire-Revised (SBQ-R; Linehan & Nielsen, 1981) is a widely used 4-item self-report measure that assesses risk for future suicidal behaviors by inquiring about lifetime suicidal ideation and suicide attempts, frequency of suicidal ideation in the past year, disclosure of suicidal ideation, and likelihood of future suicide attempts. The scale has been found to be a reliable and valid measure of risk for suicidal behavior with a nonclinical sample of young adults (Osman, et al., 2001). The scale has demonstrated adequate internal consistency reliability in a non-clinical sample of undergraduate college students ($\alpha = .76$). Suicidal ideation was assessed with item 2 (i.e., “How often have you thought about killing yourself in the past year?”), with responses on a Likert-type scale ranging from 0 (“Never”) to 4 (“Very often: 5 or more times”).

Procedure

Participants completed a battery of self-report questionnaires online on a computer in a research lab. The measures took about 3-4 hours to complete. Informed consent was obtained from each participant before completing the online surveys, and each participant received credit
toward partial fulfillment of their introduction to psychology course’s research requirement. Study procedures received Institutional Review Board (IRB) approval from the City University of New York (CUNY). Data were collected between 2012 and 2013.

Data Analysis

Missing data were excluded from analyses. Variables did not violate basic assumptions of linear regression models including sample being randomly selected and variables being independent, demonstrating a linear relationship, being normally distributed, and demonstrating homogeneity of variance with the exception of suicidal ideation, which was positively skewed with a skewness value of 2.66 (0.06). Sex differences in racial discrimination, posttraumatic stress, depressive symptoms, and suicidal ideation were examined using independent samples t-tests, whereas racial and ethnic differences were examined using a one-way ANOVA with post hoc Bonferroni corrected t-tests.

To test the hypothesis that posttraumatic stress would mediate the relation between racial and ethnic discrimination stress and suicidal ideation (SI), hierarchical linear regression models were conducted with racial and ethnic discrimination stress entered as the independent variable, posttraumatic stress and depressive symptoms, entered as the mediators, and SI entered as the dependent variable. Models adjusted for age. Interaction terms between racial and ethnic discrimination stress and sex were created and entered into the regression models to test the moderating effects of sex. To further examine the direct and indirect effects of racial and ethnic discrimination stress on SI through posttraumatic stress and depressive symptoms, bootstrapping procedures with 95% confidence intervals and 10,000 resampling distribution were used via PROCESS, a computational tool for SPSS (Hayes, 2013). These mediation models were analyzed for the entire sample as well as in analyses stratified by race/ethnicity to examine the
mediation effect across race/ethnicity. The five groupings were White, Black, Hispanic, Asian and other race/ethnicity. For interaction terms, continuous variables were centered around their respective means to reduce multicollinearity (Jaccard & Turrisi, 2003).

Results: Study 1

Descriptive Analyses

The means for depression ($M = 10.44; SD = 8.58$) and posttraumatic stress ($M = 27.52; SD = 21.30$) fall below the recommended clinical cutoff, 14 and 33 respectively, suggesting minimal symptomology among this sample, thus, reflective of a non-clinical group of emerging adults. Approximately 80% of the sample reported no suicidal ideation in the past year, with 11% reporting once, 5% reporting two times, 2% reported 3-4 times, and 1% reported 5 or more times.

Sex differences in racial/ethnic discrimination stress and frequency, posttraumatic stress, depressive symptoms and suicidal ideation were examined using t-tests. There were significant sex differences in the frequency of racial discrimination experiences, $t (616.32) = 2.53, p < .05$, as males reported greater frequency than females. However, there was no significant sex difference in stress appraisal of racial/ethnic discrimination, $t (1377) = 0.08, p = .94$. Sex differences were also evident in PTS, $t (1448) = 3.04, p < .05$, as females reported greater PTS than males. Specifically, there was a significant sex difference in intrusion, $t (1448) = 2.62, p < .05$, with females reporting significantly greater intrusion than males; and avoidance, $t (1448) = 3.83, p < .05$, with females reporting significantly greater avoidance than males. However, the sex difference in hyperarousal was only a trend, $t (1448) = 3.83, p = .06$, with females reporting greater hyperarousal than males. There was a significant sex difference in depressive symptoms, $t (1534) = 5.26, p < .05$, as females reported greater depressive symptoms than males. While
females reported greater frequency of suicidal ideation in the last year than males, this difference was marginally significant, \( t (1539) = 8.11, p = .07 \). For more information on means and standard deviations, see Table 1.

Racial/ethnic differences across the same variables were examined using One-way ANOVA with Bonferroni corrected post hoc t-tests. There were significant racial/ethnic group differences in the frequency of racial discrimination in the past year, \( F (4,1414) = 5.06, p < .05 \). Specifically, Black and Asian emerging adults reported significantly greater frequency than White emerging adults. Hispanic emerging adults also reported more frequently than White emerging adults, but this difference was only a trend \( (p = .06) \). Racial/ethnic group differences in the stress appraisal of racial/ethnic discrimination experience were also evident, \( F (4,1376) = 9.36, p < .05 \). Specifically, emerging adults identifying as Black, Asian, Hispanic, and other race/ethnicity reported significantly greater stress from racial discrimination than White emerging adults. There were no racial/ethnic group differences in posttraumatic stress, \( F (4,1447) = 0.11, p = .98 \), nor across the subclusters within posttraumatic stress, including intrusions, \( F (4,1447) = 0.11, p = .98 \), avoidance, \( F (4,1447) = 0.39, p = .81 \), and hyperarousal, \( F (4,1447) = 0.42, p = .80 \). Similarly, there were also no significant race/ethnic differences in depressive symptoms, \( F (4,1532) = 0.64, p = .63 \), nor in frequency of suicidal ideation in the past year, \( F (4,1541) = 0.80, p = .53 \).

Pearson correlation analyses were used for bivariate analyses among the predictor and mediator variables. There was a significant, positive correlation between racial discrimination stress and frequency of racial discrimination \( (r = .78) \). There was a significant, positive correlation between frequency of racial discrimination and hyperarousal symptoms \( (r = .30) \), avoidance symptoms \( (r = .19) \), intrusion symptoms \( (r = .23) \), depressive symptoms \( (r = .17) \) and
suicidal ideation \( (r = .11) \). There was also a significant, positive correlation between frequency of racial discrimination stress and hyperarousal symptoms \( (r = .34) \), avoidance symptoms \( (r = .24) \), intrusion symptoms \( (r = .27) \), depressive symptoms \( (r = .20) \) and suicidal ideation \( (r = .09) \).

For more information on correlation analyses, see Table 2.

Regression Analyses

Multiple hierarchical linear regression models were created to examine the relation between racial/ethnic discrimination stress, posttraumatic stress, depressive symptoms, and suicidal ideation, adjusting for age. Analyses were stratified by race/ethnicity to examine the mediation effect of racial/ethnic discrimination stress on suicidal ideation through posttraumatic stress and depression. Interaction terms were created with sex and racial/ethnic discrimination stress in predicting posttraumatic stress, depression, and suicidal ideation to examine the moderation effect of sex. For interaction terms, continuous variables were centered around their respective means to reduce multicollinearity (Jaccard & Turrisi, 2003). Male was entered as the reference group for sex.

**Hypothesis 1: Racial/Ethnic Discrimination Stress was Positively Associated with Suicidal Ideation, Posttraumatic Stress, and Depressive Symptoms**

Adjusting for age, sex and race/ethnicity, the model with racial/ethnic discrimination stress predicting posttraumatic stress accounted for 9% of the variance, \( R^2 = .09 \), \( F(7, 1315) = 19.66 \), \( p < .01 \), and was significant, \( b = 0.35 \), 95% CI = 0.29 - 0.41, \( p < .05 \). Adjusting for age, sex and race/ethnicity, the model with racial/ethnic discrimination stress predicting depressive symptoms accounted for 6% of the variance, \( R^2 = .06 \), \( F(7, 1374) = 12.95 \), \( p < .01 \), and was significant, \( b = 0.10 \), 95% CI = 0.08 - 0.12, \( p < .05 \). Results from hierarchical linear regression models with racial/ethnic discrimination stress, posttraumatic stress, and depressive symptoms
predicting suicidal ideation adjusting for age, sex, and race/ethnicity are displayed in Table 3.

The model with racial/ethnic discrimination stress predicting suicidal ideation accounted for 2% of the variance, $R^2 = .02$, $F(7, 1312) = 4.37$, $p < .05$, and the effect was significant, $b = .005$, 95% CI = .002 - .007, $p < .05$.

**Hypothesis 2: Posttraumatic Stress and Depressive Symptoms Mediated the Relation Between Racial/ethnic Discrimination and Suicidal Ideation**

The model with racial/ethnic discrimination stress, and posttraumatic stress predicting suicidal ideation accounted for 6% of the variance, $R^2 = .06$, $F(8, 1312) = 11.82$, $p < .01$. The effect of racial/ethnic discrimination stress on suicidal ideation, $b = 0.02$, 95% CI = -0.001 - 0.004, $p = .14$, was no longer significant once posttraumatic stress was entered in the model. Meanwhile, there was a significant effect of posttraumatic stress on suicidal ideation, $b = 0.008$, 95% CI = 0.006 - 0.01, $p < .01$. The model with racial/ethnic discrimination stress, posttraumatic stress, and depression predicting suicidal ideation accounted for 19% of the variance, $R^2 = .19$, $F(9, 1312) = 34.54$, $p < .01$. The effect of racial/ethnic discrimination stress on suicidal ideation, $b = 0.00$, 95% CI = -0.002 - 0.003, $p = .70$, was no longer significant once depression and posttraumatic stress were entered in the model. While there was a significant effect of depression on suicidal ideation, $b = 0.04$, 95% CI = 0.03 - 0.04, $p < .05$, the effect of posttraumatic stress on suicidal ideation was not significant, $b = 0.002$, 95% CI = 0.000 - 0.004, $p = .12$. 
Hypothesis 3: Posttraumatic Stress and Depressive Symptoms as Mediators in the Relation Between Racial/Ethnic Discrimination Stress and Suicidal Ideation is Moderated by Race/Ethnicity and Sex

Mediation effect of posttraumatic stress and depressive symptoms in the relation between racial/ethnic discrimination stress and suicidal ideation was further examined using bootstrapping procedures resampling the distribution with 95% confidence intervals. Moderation effect of sex was examined with interaction terms constructed between sex and the independent variables (i.e., racial/ethnic discrimination stress) and the mediators (i.e., posttraumatic stress, depressive symptoms). The moderation effect of race/ethnicity was examined through direct and indirect effects stratified by race/ethnicity. Findings are presented below and displayed in Figures 1-5.

Direct and Indirect Effect of Racial/ethnic Discrimination Stress on Suicidal Ideation through Posttraumatic Stress and Depressive Symptoms among White Emerging Adults

Findings are displayed in Figure 1. Among White emerging adults, the model with racial/ethnic discrimination stress and sex predicting posttraumatic stress accounted for 9% of the variance, $R^2 = .09$, $F(4, 255) = 6.20, p < .01$. Adjusting for age, there was a significant direct effect of racial/ethnic discrimination stress on posttraumatic stress, $b = 0.31, 95\% \, CI = 0.03 - 0.58, p < .05$, but no significant interaction between racial/ethnic discrimination stress and sex, $b = 0.11, 95\% \, CI = -0.24 - 0.46, p = .53$. The model with racial/ethnic discrimination stress and sex predicting depression accounted for 6% of the variance, $R^2 = .06$, $F(4, 255) = 3.94, p < .01$. Adjusting for age, there was no significant direct effect of racial/ethnic discrimination stress on depression, $b = 0.02, 95\% \, CI = -0.09 - 0.13, p = .70$, nor a significant interaction between racial/ethnic discrimination stress and sex, $b = 0.04, 95\% \, CI = -0.09 - 0.18, p = .54$. The model
with racial/ethnic discrimination stress predicting suicidal ideation, adjusting for age and sex, accounted for 1% of the variance, \( R^2 = .01, F(3, 273) = 2.27, p = .08 \), and was not significant, \( b = 0.01, 95\% \text{ CI} = -0.001 - 0.01, p = .10 \). Lastly, the model with racial/ethnic discrimination stress, posttraumatic stress, depression, and sex predicting suicidal ideation accounted for 24% of the variance, \( R^2 = .24, F(8, 251) = 9.93, p < .01 \). Adjusting for age, there was a significant direct effect of racial/ethnic discrimination stress, \( b = 0.01, 95\% \text{ CI} = 0.004 - 0.02, p < .01 \), and there was a significant effect of depression, \( b = 0.04, 95\% \text{ CI} = 0.01 - 0.06, p < .01 \), but no significant direct effect of posttraumatic stress, \( b = -0.0002, 95\% \text{ CI} = -0.01 - 0.01, p = .96 \), on suicidal ideation. While there was no significant interaction effect of posttraumatic stress and sex on suicidal ideation, \( b = 0.0001, 95\% \text{ CI} = -0.01 - 0.01, p = .98 \), nor depression and sex, \( b = 0.01, 95\% \text{ CI} = -0.02 - 0.04, p = .61 \), there was a significant interaction effect of racial/ethnic discrimination stress and sex, \( b = -0.02, 95\% \text{ CI} = -0.03 - (-0.005), p < .01 \). Specifically, the direct effect of racial/ethnic discrimination stress was significant among males, \( b = 0.01, 95\% \text{ CI} = 0.004 - 0.02, p < .01 \), but not among females, \( b = -0.003, 95\% \text{ CI} = -0.01 - 0.004, p = .43 \). Further, there was no significant indirect effect of racial/ethnic discrimination stress on suicidal ideation through posttraumatic stress among males, \( b = -0.0004, 95\% \text{ CI} = -0.004 - 0.002 \), or females, \( b = 0.000, 95\% \text{ CI} = -0.002 - 0.003 \). Similarly, there was no significant indirect effect of racial/ethnic discrimination stress on suicidal ideation through depression among males, \( b = 0.0008, 95\% \text{ CI} = -0.003 - 0.006 \), or females, \( b = 0.003, 95\% \text{ CI} = -0.001 - 0.01 \).

**Direct and Indirect Effect of Racial/Ethnic Discrimination Stress on Suicidal Ideation through Posttraumatic Stress and Depressive Symptoms among Black Emerging Adults**

Findings are displayed in Figure 2. Among Black emerging adults, the model with racial/ethnic discrimination stress and sex predicting posttraumatic stress accounted for 18% of
the variance, $R^2 = .18$, $F(4, 228) = 12.57$, $p < .01$. Adjusting for age, there was a significant direct effect of racial/ethnic discrimination stress on posttraumatic stress, $b = 0.31$, 95% CI = 0.04 - 0.59, $p < .05$, but no significant interaction between racial/ethnic discrimination stress and sex, $b = 0.20$, 95% CI = -0.11 - 0.51, $p = .21$. The model with racial/ethnic discrimination stress and sex predicting depression accounted for 8% of the variance, $R^2 = .08$, $F(4, 228) = 4.91$, $p < .01$. Adjusting for age, there was a significant direct effect of racial/ethnic discrimination stress on depression, $b = 0.12$, 95% CI = 0.01 - 0.23, $p < .05$, but no significant interaction between racial/ethnic discrimination stress and sex, $b = -0.01$, 95% CI = -0.13 - 0.11, $p = .91$ on depression. The model with racial/ethnic discrimination stress predicting suicidal ideation, adjusting for age and sex, accounted for 5% of the variance, $R^2 = .05$, $F(3, 246) = 5.23$, $p < .01$, and was significant, $b = 0.01$, 95% CI = 0.002 - 0.23, $p < .05$. Lastly, the model with racial/ethnic discrimination stress, posttraumatic stress, depression, and sex predicting suicidal ideation accounted for 14% of the variance, $R^2 = .14$, $F(8, 224) = 4.87$, $p < .01$. Adjusting for age, there was no significant direct effect of racial/ethnic discrimination stress, $b = -0.001$, 95% CI = -0.01 - 0.01, $p = .82$, and no significant direct effect of depression, $b = 0.01$, 95% CI = -0.02 - 0.04, $p = .59$, but there was a significant direct effect of posttraumatic stress, $b = 0.01$, 95% CI = 0.001 - 0.02 $p < .05$, on suicidal ideation. Further, there was no significant interaction effect of posttraumatic stress and sex on suicidal ideation, $b = -0.01$, 95% CI = -0.02 - 0.003, $p = .13$, depression and sex, $b = 0.02$, 95% CI = -0.02 - 0.05, $p = .36$, nor racial/ethnic discrimination and sex, $b = 0.007$, 95% CI = -0.005 - 0.02, $p = .24$. Specifically, the direct effect of racial/ethnic discrimination stress on suicidal ideation was marginally significant among females, $b = 0.006$, 95% CI = -0.0001 - 0.01, $p = .05$, but not significant among males, $b = -0.001$, 95% CI = -0.01 - 0.01, $p = .82$. While there was a significant indirect effect of racial/ethnic discrimination stress
on suicidal ideation through depression among females, $b = 0.003$, 95% CI = -0.001 - 0.006, this was not significant among males, $b = 0.001$, 95% CI = -0.006 - 0.007. Lastly, there was no significant indirect effect of racial/ethnic discrimination stress on suicidal ideation through posttraumatic stress among males, $b = 0.004$, 95% CI = -0.001 - 0.02, or females, $b = 0.001$, 95% CI = -0.001 - 0.004.

Direct and Indirect Effect of Racial/Ethnic discrimination Stress on Suicidal Ideation through Posttraumatic Stress and Depressive Symptoms among Hispanic Emerging Adults

Findings are displayed in Figure 3. Among Hispanic emerging adults, the model with racial/ethnic discrimination stress and sex predicting posttraumatic stress accounted for 9% of the variance, $R^2 = .09$, $F(4, 605) = 14.08$, $p < .01$. Adjusting for age, there was a significant direct effect of racial/ethnic discrimination stress on posttraumatic stress, $b = 0.37$, 95% CI = 0.19 - 0.55, $p < .01$, but no significant interaction between racial/ethnic discrimination stress and sex, $b = -0.05$, 95% CI = -0.26 - 0.15, $p = .61$. The model with racial/ethnic discrimination stress and sex predicting depression accounted for 5% of the variance, $R^2 = .05$, $F(4, 605) = 8.12$, $p < .01$. Adjusting for age, there was a significant direct effect of racial/ethnic discrimination stress on depression, $b = 0.12$, 95% CI = 0.04 - 0.20, $p < .01$, but no significant interaction between racial/ethnic discrimination stress and sex, $b = -0.04$, 95% CI = -0.13 - 0.05, $p = .42$. The model with racial/ethnic discrimination stress predicting suicidal ideation, adjusting for age and sex, accounted for 2% of the variance, $R^2 = .02$, $F(3, 637) = 5.03$, $p < .01$, and was not significant, $b = 0.002$, 95% CI = -0.001 - 0.01, $p = .28$. The model with racial/ethnic discrimination stress, posttraumatic stress, depression and sex predicting suicidal ideation accounted for 25% of the variance, $R^2 = .25$, $F(8, 601) = 25.42$, $p < .01$. Adjusting for age, there was a significant direct effect of depression on suicidal ideation, $b = 0.03$, 95% CI = 0.01 - 0.04, $p < .01$. However, there
was no significant direct effect of racial/ethnic discrimination stress, $b = 0.0004$, 95% CI = -0.006 - 0.006, $p = .89$, nor posttraumatic stress, $b = 0.001$, 95% CI = -0.005 - 0.006, $p = .75$, on suicidal ideation. Further, there was no significant interaction effect of posttraumatic stress and sex on suicidal ideation, $b = 0.0000$, 95% CI = -0.007 - 0.008, $p = .99$, depression and sex, $b = 0.01$, 95% CI = -0.004 - 0.03, $p = .14$, nor racial/ethnic discrimination and sex, $b = -0.003$, 95% CI = -0.01 - 0.004, $p = .35$. Further, there was no significant indirect effect of racial/ethnic discrimination stress on suicidal ideation through posttraumatic stress among males, $b = -0.0003$, 95% CI = -0.001 - 0.003, or females, $b = 0.0003$, 95% CI = -0.001 - 0.002. However, there was a significant indirect of racial/ethnic discrimination stress on suicidal ideation through depression among males, $b = 0.004$, 95% CI = 0.001 - 0.01, and females, $b = 0.004$, 95% CI = 0.001 - 0.006.

**Direct and Indirect Effect of Racial/Ethnic Discrimination Stress on Suicidal Ideation through Posttraumatic Stress and Depressive Symptoms among Asian Emerging Adults**

Findings are displayed in Figure 4. Among Asian emerging adults, the model with racial/ethnic discrimination stress and sex predicting posttraumatic stress accounted for 7% of the variance, $R^2 = .07$, $F(4, 150) = 2.89$, $p < .05$. Adjusting for age, there was a significant effect of racial/ethnic discrimination stress on posttraumatic stress, $b = 0.29$, 95% CI = 0.01 - 0.57, $p = .05$, but no significant interaction between racial/ethnic discrimination stress and sex, $b = -0.05$, 95% CI = -0.39 - 0.29, $p = .76$. The model with racial/ethnic discrimination stress and sex predicting depression accounted for 14% of the variance, $R^2 = .14$, $F(4, 150) = 6.20$, $p < .01$. Adjusting for age, there was no significant direct effect of racial/ethnic discrimination stress on depression, $b = 0.06$, 95% CI = -0.04 - 0.17, $p = .24$, and no significant interaction between racial/ethnic discrimination stress and sex, $b = 0.05$, 95% CI = -0.08 - 0.18, $p = .42$. The model with racial/ethnic discrimination stress predicting suicidal ideation, adjusting for age and sex,
accounted for 2% of the variance, $R^2 = .02$, $F(3, 161) = 1.14$, $p = .34$, and was not significant, $b = 0.006$, 95% CI = -0.001 - 0.01, $p = .08$. The model with racial/ethnic discrimination stress, posttraumatic stress, depression, and sex predicting suicidal ideation accounted for 14% of the variance, $R^2 = .14$, $F(8, 146) = 3.02$, $p < .01$. Adjusting for age, there was no significant direct effect of racial/ethnic discrimination stress, $b = 0.003$, 95% CI = -0.008 - 0.01, $p = .56$, nor posttraumatic stress, $b = 0.001$, 95% CI = -0.01 - 0.01, $p = .82$, nor depression, $b = 0.01$, 95% CI = -0.02 - 0.04, $p = .45$, on suicidal ideation. Further, there was no significant interaction effect of posttraumatic stress and sex on suicidal ideation, $b = 0.007$, 95% CI = -0.006 - 0.02, $p = .27$, nor depression and sex, $b = 0.02$, 95% CI = -0.02 - 0.06 $p = .31$, nor racial/ethnic discrimination stress and sex, $b = 0.002$, 95% CI = -0.02 -0.01, $p = .70$. Lastly, there was a significant indirect effect of racial/ethnic discrimination stress on suicidal ideation through posttraumatic stress among females, $b = 0.002$, 95% CI = 0.0001 - 0.007, but not among males, $b = 0.0003$, 95% CI = -0.002 - 0.003. Similarly, there was a significant indirect effect of racial/ethnic discrimination stress on suicidal ideation through depression among females, $b = 0.004$, 95% CI = 0.001 - 0.01, but not among males, $b = 0.001$, 95% CI = -0.001 - 0.008.

**Direct and Indirect Effect of Racial/ethnic discrimination Stress on Suicidal Ideation through Depressive Symptoms and Posttraumatic Stress among Other Emerging Adults**

Findings are presented in Figure 5. Among emerging adults identifying as other race/ethnicity, the model with racial/ethnic discrimination stress and sex predicting posttraumatic stress accounted for 12% of the variance, $R^2 = .12$, $F(4, 50) = 1.78$, $p = .15$. Adjusting for age, there was a trending effect of racial/ethnic discrimination stress on posttraumatic stress, $b = 0.30$, 95% CI = -0.04 - 0.63, $p = .08$, and no significant interaction between racial/ethnic discrimination stress and sex, $b = -0.15$, 95% CI = -0.61 - 0.34, $p = .53$. The model with
racial/ethnic discrimination stress and sex predicting depression accounted for 28% of the variance, $R^2 = .28$, $F(4, 150) = 4.74$, $p < .01$. Adjusting for age, there was a significant direct effect of racial/ethnic discrimination stress on depression, $b = 0.18$, 95% CI = 0.04 - 0.31, $p < .05$, but no significant interaction between racial/ethnic discrimination stress and sex, $b = -0.06$, 95% CI = -0.25 - 0.13, $p = .53$. The model with racial/ethnic discrimination stress predicting suicidal ideation, adjusting for age and sex, accounted for 11% of the variance, $R^2 = .11$, $F(3, 56) = 2.11$, $p = .11$, and was not significant, $b = 0.006$, 95% CI = -0.005 - 0.02, $p = .28$. The model with racial/ethnic discrimination stress, posttraumatic stress, depression, and sex predicting suicidal ideation accounted for 32% of the variance, $R^2 = .32$, $F(8, 46) = 2.65$, $p < .05$. Adjusting for age, there was no significant direct effect of racial/ethnic discrimination stress, $b = -0.003$, 95% CI = -0.02 - 0.02, $p = .77$, nor depression, $b = 0.04$, 95% CI = -0.02 - 0.10, $p = .15$, nor posttraumatic stress, $b = 0.007$, 95% CI = -0.01 - 0.03, $p = .50$, on suicidal ideation. There was a trending interaction effect of posttraumatic stress and sex on suicidal ideation, $b = -0.02$, 95% CI = -0.06 - 0.002, $p = .06$, and no significant interaction effect of racial/ethnic discrimination and sex, $b = 0.003$, 95% CI = -0.02 -0.03, $p = .80$, nor depression and sex, $b = 0.03$, 95% CI = -0.04 - 0.11, $p = .37$. Lastly, there was a significant indirect effect of racial/ethnic discrimination stress on suicidal ideation through depression among females, $b = 0.009$, 95% CI = -0.002 - 0.03, but not among males, $b = 0.007$, 95% CI = -0.002 - 0.02. However, there was no significant indirect effect of racial/ethnic discrimination stress on suicidal ideation through posttraumatic stress among females, $b = -0.003$, 95% CI = -0.01 - 0.001, nor males, $b = 0.002$, 95% CI = -0.001 - 0.01.
Preliminary Discussion: Study 1

Summary of Findings

Study 1 sought to examine the role of posttraumatic stress and depressive symptoms as explanatory factors in the relation between racial/ethnic discrimination stress and suicidal ideation among a racially/ethnically diverse group of emerging adults – specifically, whether racial/ethnic discrimination stress was associated with suicidal ideation through posttraumatic stress and depressive symptoms, and whether these relationships vary across sex and racial/ethnic groups. It was expected that there would be a significant relation, and that the relation would be stronger among racial/ethnic minority emerging adults and females compared to White and male emerging adults. The hypotheses were partially supported. Specifically, as predicted, there was a significant relation between racial/ethnic discrimination stress and posttraumatic stress. Specifically, increases in subjective stress associated with experiences of racial/ethnic discrimination was associated with increases in posttraumatic stress symptoms. This relation did not vary across race/ethnicity or sex, and thus, it was evident among emerging adults identifying as White, Black, Hispanic, Asian, and other race/ethnicity. The hypothesis that there would be a significant relation between racial/ethnic discrimination stress and depressive symptoms was supported in that increases in racial/ethnic discrimination stress was associated with increases in depressive symptoms. Furthermore, this relation varied across race/ethnicity and sex. Specifically, racial/ethnic discrimination was associated with depression among Black, Hispanic, and other race/ethnicity, but not among White or Asian individuals.

While racial/ethnic discrimination stress was not directly associated with suicidal ideation, except among White males, there was an indirect relation through posttraumatic stress and depression among Black, Hispanic, Asian, and other race/ethnicity, and this relation varied across sex. Specifically, among Black females, depression mediated the relation between
racial/ethnic discrimination stress and suicidal ideation. In other words, increases in racial/ethnic discrimination stress was associated with increases in depression, which, in turn, was associated with increases in suicidal ideation. This was not evident among Black males, nor did posttraumatic stress mediate the relation in Black males or Black females. Among Asian females, posttraumatic stress and depression mediated the relation between racial/ethnic discrimination and suicidal ideation, but not among Asian males. Among Hispanic males and females, posttraumatic stress did not mediate the relation between racial/ethnic discrimination and suicidal ideation; however, depression was a significant mediator. Lastly, among emerging adults identifying as other race/ethnicity, posttraumatic stress did not mediate the relation between racial/ethnic discrimination stress and suicidal ideation, but depression did among females and not males. In other words, depression mediated the relation between racial/ethnic discrimination stress and suicidal ideation among all racial/ethnic minority females, but only among Hispanic males. Meanwhile, posttraumatic stress helped explain the relation only among Asian females.

Extending the Literature

The present findings support existing research that suggests that experiences of racial/ethnic discrimination may increase risk for posttraumatic stress symptoms, which has been reported among Black (Pieterse et al., 2010), Hispanic (Cheng & Mallinckrodt, 2015; Flores et al., 2010), and Asian individuals (Wei et al. 2012). Furthermore, findings indicate no sex differences in the relation. This study expands on these findings by examining sex in the relation, given well-documented sex differences in posttraumatic stress symptoms (Tolin & Foa, 2006). The present findings also support previous research demonstrating that experiences of racial/ethnic discrimination may increase risk for depressive symptoms (Pascoe & Richmann, 2012).
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2009; Williams & Mohammed, 2009), particularly among Black and Hispanic individuals (Chou et al., 2012; Hwang & Goto, 2009), and further suggests that the relation between racial/ethnic discrimination and depressive symptoms does not vary between males and females. This information broadens our understanding of the harmful effects of experiences of racial/ethnic discrimination on risk for suicidal ideation through posttraumatic stress and/or depression among racial/ethnic minority emerging adults. Furthermore, it demonstrates how this relation may be more relevant among racial/ethnic minority females. There is evidence to suggest that depression mediates the relation between racial/ethnic discrimination and suicidal ideation among African Americans adults (Walker et al., 2014). The present findings expand upon this research by demonstrating that this relation may exist among Black, Asian, and Hispanic emerging adults. It also demonstrates that depression may be more helpful in understanding this relation among females than males because depression emerged as a significant mediator in the relation between racial/ethnic discrimination stress and suicidal ideation, but only among females. This may be due in part to racial/ethnic differences in the nature of racial/ethnic discrimination experiences (Hwang & Goto, 2009; Greene, Way & Pahl, 2006). While there was no significant sex difference in racial/ethnic discrimination stress reported, there was a significant sex difference in frequency of racial/ethnic discrimination experiences, as males reported significantly greater frequency than females. For instance, Hwang and Goto (2009) found that Latino students were more likely to report being accused of doing something wrong compared to Asians students. Additionally, coping styles elicited specifically in response to discrimination may also be impacted by cultural experiences and vary across different populations (Forsyth & Carter, 2014). In fact, Polanco-Roman and colleagues (2016) found that females employ more active coping styles in response to racial/ethnic discrimination than males, who employ more passive coping
styles, though they reported no racial/ethnic differences in coping with racial/ethnic discrimination.

In summary, the present findings provide further insight into some of the underlying mechanisms through which experiences of racial/ethnic discrimination may increase risk for suicidal ideation, particularly among racial/ethnic minority emerging adults. Specifically, the present findings suggest that stress resulting from experiences of racial/ethnic discrimination may yield posttraumatic stress and/or depressive symptoms, among racial/ethnic minority emerging adults, but not among White emerging adults. This may be due in part because White emerging adults are less likely to experience racial/ethnic discrimination, experience it with less frequency, or are less impacted by it. Furthermore, depression mediated the relation between racial/ethnic discrimination stress and suicidal ideation among racial/ethnic minority females and Hispanic males, but not among males of other racial/ethnic minority group or White emerging adults. Additionally, posttraumatic stress mediated the relation only among Asian females. These findings indicate that racial/ethnic discrimination may increase vulnerability to thinking about suicide to the degree that it increases depression and posttraumatic stress among racial/ethnic minority emerging adults.
CHAPTER 4: Stress Sensitivity and Dissociative Symptoms Mediate the Relation Between Racial/Ethnic Discrimination and Suicide Attempts Through Depressive Symptoms and Suicidal Ideation (Study 2)

The findings from study 1 establish a relation between racial/ethnic discrimination stress and suicidal ideation through posttraumatic stress and depressive symptoms, particularly among racial/ethnic minority females, thus, study 2 aims to extend this pathway to understand risk for suicide attempts. Considering that increased frequency in racial/ethnic discrimination has a cumulative, deleterious effect, the first aim of study 2 was to examine the relation between frequency of racial/ethnic discrimination and suicide attempts (SA) among racial/ethnic minority emerging adults. The second aim of the study was to test a serial mediation that includes dissociation, stress sensitivity, depressive symptoms, and suicidal ideation. It was hypothesized increases in frequency of racial/ethnic discrimination will be positively associated with increases in stress sensitivity, dissociation, depressive symptoms, and suicidal ideation. It was further hypothesized that dissociation and stress sensitivity would mediate the relation between frequency of racial/ethnic discrimination and suicide attempts through depressive symptoms and suicidal ideation, in that increases in the frequency of racial and ethnic discrimination experiences would be positively associated with SA to the degree that it increased dissociation and stress sensitivity, by increasing depression and suicidal ideation, adjusting for sex, age, and general trauma exposure.

Methods: Study 2

Sample

Participants (N = 747) were racial and ethnic minority emerging adults ages 18-29 (M = 19.84; SD = 2.22), recruited from an urban, public university in the Northeast U.S. Participants
were recruited from a larger, ongoing study examining cultural influences on risk for psychosis. The sample was predominantly female (61%), born in the U.S. (63%), and racially/ethnically diverse: 34% Asian, 33% Hispanic, 23% Black, and 10% other race/ethnicity (e.g., Biracial, Middle Eastern).

Procedures

Participants completed a battery of self-report surveys online via Qualtrics. Informed consent was obtained from all participants in the lab, who received credit toward partial course requirement for their participation. Participants completed surveys in the lab within about an hour in groups ranging from 1-6. Study procedures were approved by the CUNY IRB.

Measures

Demographic Information was collected such as age, sex, race/ethnicity, place of birth of self and parents, household income.

Suicidal Ideation and Suicide Attempts. The Self-Injurious Thoughts and Behaviors Interview was used to assess suicidal ideation and attempts (Nock et al., 2007), and is a structured interview that inquires about characteristics of suicidal thoughts, plans, gestures, attempts, and non-suicidal self-injury. For any item endorsed, participants were queried further about characteristics such as frequency, severity, and method. The scale has demonstrated strong test re-test reliability among adolescents and young adults in suicidal ideation ($\kappa = .70$) and suicide attempts ($\kappa = .80$), and strongly correlates with other well-established measures of suicidal ideation and attempts (Nock et al., 2007). For the purpose of this study, the scale was administered as an online survey. Previous research has demonstrated strong psychometric properties of the scale administered as a survey; however, the items used were on non-suicidal self-injury and not suicidal ideation or attempts due to the research aims of the study (Latimer,
Meade & Tennant, 2013). Suicidal ideation (SI) was assessed with the following item: “During how many separate times in the past year have you had thoughts about killing yourself?” Suicide attempt (SA) was assessed using the following item: “How many suicide attempts have you made in the past year?” Frequency was summed with higher scores representing greater risk of engaging in future suicidal thinking or behavior.

*Racial and Ethnic Discrimination Frequency.* The Experiences of Discrimination scale was used to assess frequency of racial and ethnic discrimination (EOD; Krieger et al., 2005), and is a 9-item self-report scale where participants specify the setting (e.g., school, work, place of service, on the streets, law enforcement) and frequency with which they experienced “discrimination, been prevented from doing something, or been hassled or made to feel inferior in any of the following situations because of your race, ethnicity, or color.” Participants rate if they have experienced discrimination from each setting on a binary yes/no scale. Subsequently, for each item endorsed, they rate the frequency on Likert-type scale ranging from 1 (i.e., once) to 3 (i.e., 4 or more times). The EOD has demonstrated good internal consistency reliability ($\alpha = .74$) and test-retest reliability ($r = .70$) in a racially/ethnically diverse non-clinical sample of adults (Krieger et al., 2005). For the present study, the total scores were computed by aggregating the frequency of endorsed discriminatory experiences across all settings. In the present sample, scores ranged from 0-24 ($M=3.68; SD=3.94$), and demonstrated good internal consistency reliability ($\alpha = .70$).

*Stress Sensitivity.* The Perceived Stress Scale was used to assess stress sensitivity (Cohen, Kamarck & Mermelstein, 1983), and is a 14-item self-report scale that measures perceived global stress. The scale has demonstrated high internal consistency reliability ($\alpha = .84 – .86$), good test-retest reliability ($r = .55 – .85$), and high convergent validity ($r = .24 – .49$) with the
Life Events Scale (Sarason et al., 1978) in nonclinical and clinical samples. Participants indicated how frequently they felt or thought a particular way in the last month (e.g. “In the last month, how often have you felt nervous or “stressed?”). Responses range from 0 (“Never”) to 4 (“Very often”), with a higher rating indicating heightened stress sensitivity. Total scores were computed by summation of all responses. In the present sample, scores ranged from 5-49 ($M=28.00; SD=7.16$), and the internal consistency reliability was good ($\alpha = .78$).

**Dissociative Symptoms.** The Dissociative Symptoms Scale was used to assess dissociative symptoms in response to trauma exposure (DSS; Carlson et al, 2016). The DSS is a 20-item self-report questionnaire used to assess dissociative symptoms in response to trauma exposure and consists of four subscales: depersonalization/derealization (e.g., “My body felt strange or unreal”); gaps in awareness and memory (e.g., “ I suddenly realized that I hadn't been paying attention to what was going on around me”); sensory misperception (e.g., “ I saw something that seemed real, but was not”); and cognitive-behavioral re-experiencing (e.g., “ I had moments when I lost control and acted like I was back in an upsetting time in my past”). Participants reported on the frequency with which they have experienced each item on a Likert-type scale ranging from 0 (i.e., Not at all) to 4 (i.e., More than once a day). The scale has demonstrated strong test-re-test reliability ($r = .70$) and strong internal consistency reliability of ($\alpha = .87$) with a non-clinical sample. Further, it demonstrated convergent validity with a widely used measure of dissociation (i.e., Dissociative Experiences Scale; $r = .57 – .63$) and a widely used measure of trauma exposure (i.e., Trauma History Screen; $r = .44 – .86$) in a clinical sample comprised of residential and homeless veterans, and non-clinical sample comprised of Midwestern college students, Western college students, and community adults (Carlson et al., 2016). In the present sample, all of the items were totaled, with scores ranging from 0-62
(M=8.46; SD = 8.99), and the scale demonstrated strong internal consistency reliability (α = .91).

**Trauma History.** The Life Events Checklist (LEC; Gray, et al., 2004) was used to assess trauma exposure. The self-report questionnaire lists 17 discrete threatening experiences (e.g., physical assault, sexual assault, natural disaster, combat/war exposure), and participants were instructed to select whether each event happened directly to them, if they witnessed it, learned about it, didn’t know, or if it didn’t apply to them. The scale has demonstrated good convergent validity with other widely used assessments of trauma exposure such as the Traumatic Life Events Questionnaire (r = .55) and the Clinician-Administered PTSD Scale (r = .39) (Gray, et al., 2004). In the present study, an aggregate of the number of traumatic events directly experienced by the participant was created to reflect a composite of cumulative traumatic experience, and scores ranged from 0-10 (M=2.29; SD=2.00). The internal consistency reliability in the present sample was fair (α = .61).

**Depressive Symptoms.** The brief version of the Center for Epidemiologic Studies Depression Scale (CESD; Kohout et al., 1993) is a 10-item self report measure that assesses the frequency in the past week of depressive symptoms including anhedonia, avolition, sleep and appetite disturbance, and depressed mood. Participants respond on Likert-type scale ranging from 0 (Rarely or none of the time) to 3 (All the time/5-7 days). This brief version of the CESD has demonstrated good internal consistency reliability among a nonclinical sample of older adults (α = .80), and strongly correlated with other measures of depression (Kohout et al., 1993). In the present sample, scores ranged from 0-28 (M=8.58; SD=5.15), and the internal consistency reliability was good (α = .81).
Data Analysis

Sex differences in racial discrimination, stress sensitivity, traumatic events, and dissociative symptoms were examined via t-tests; meanwhile, racial and ethnic group differences were examined via one-way ANOVA with post-hoc Bonferroni corrected t-tests. Chi-square analyses were conducted to examine sex and racial and ethnic group differences in suicide ideation and attempts. Missing data were removed from further analyses. To examine a serial mediation effect of stress sensitivity, dissociation, depression, and suicidal ideation on the relation between racial/ethnic discrimination frequency and suicide attempts, multiple hierarchical linear regression models were created with racial/ethnic discrimination frequency entered as the predictor, stress sensitivity, dissociation, depression, and suicidal ideation as the mediators, and suicide attempts as the outcome, adjusting for age, race/ethnicity, and traumatic events. Dummy variables were created for race/ethnicity. Male was entered as the reference group for sex, and Black was entered as the reference group for race/ethnicity.

Following the recommendations of Preacher and Hayes (2004) to test direct and indirect effects, the relation between the independent variable (i.e., racial/ethnic discrimination frequency), the mediators (i.e., stress sensitivity, dissociation, depression, suicidal ideation) and the outcome variable (i.e., suicide attempt) were examined. Unlike in traditional mediation models (Baron & Kenny 1986), which have been criticized for low power, a significant relation among predictor and outcome variables is not required in contemporary mediation models (Preacher & Hayes, 2004). Thus, direct and indirect effects were further examined using bootstrapping procedures with the SPSS computational tool PROCESS (Hayes, 2013), resampling the distribution by 10,000 with 95% confidence intervals. This facilitated an examination of the change in the effect of racial/ethnic discrimination frequency on suicide
attempt, with stress sensitivity, dissociation, depressive symptoms, and suicidal ideation entered in the model.

**Results: Study 2**

*Descriptive Analyses*

In the present sample, 27% (N=219) of participants reported thinking about suicide at least once in their lifetime, and 4% (N=31) reported having made at least one suicide attempt in their lifetime. Fourteen percent (N=114) reported suicide ideation at least once in the previous year, and frequency ranged from 0-27. Meanwhile, 2% (N=11) reported at least one suicide attempt in the previous year, and frequency ranged from 0-2. Chi-square analyses were conducted to explore sex and racial/ethnic differences in suicide ideation and attempts in the past year. There were no significant sex differences in suicidal ideation, \( \chi^2(1,747) = 0.10, p = .75 \), or suicide attempts, \( \chi^2(1,747) = 0.36, p = .55 \). While there was no significant racial/ethnic difference in suicide ideation, \( \chi^2(3,747) = 3.00, p = .39 \), there was a significant difference in suicide attempts, \( \chi^2(3) = 11.49, p < .05 \). Specifically, individuals identifying as other race/ethnicity were more likely to report a suicide attempt in the past year than Black, Hispanic, and Asian individuals.

Independent sample t-tests were conducted to examine sex differences in racial/ethnic discrimination, trauma exposure, depressive symptoms, dissociative symptoms, and stress sensitivity. There was a significant sex difference in stress sensitivity, \( t (746) = 2.21, p < .05 \), as females (\( M=8.71; SD=5.32 \)) reported greater stress sensitivity than males (\( M=8.54; SD=4.98 \)). However, there was no significant sex difference in frequency of racial/ethnic discrimination, \( t (747) = 0.34, p = .73 \), trauma exposure, \( t (747) = 0.72, p = .47 \), dissociative symptoms, \( t (746) = -0.20, p = .85 \), and depressive symptoms, \( t (746) = 0.44, p = .66 \).
Racial/ethnic differences were examined using one-way ANOVA with Bonferroni corrected post hoc t-tests. There were significant racial/ethnic difference in racial/ethnic discrimination, $F(3, 748) = 4.71, p < .05$, as Black emerging adults ($M=4.80; SD=4.15$) reported greater frequency of racial/ethnic discrimination compared to Asian ($M=3.63; SD=3.66$) and Hispanic ($M=3.44; SD=4.02$), but not emerging adults identifying as other race/ethnicity ($M=4.28; SD=4.30$). There was also significant difference in trauma exposure, $F(3, 748) = 3.11, p < .05$, as Black individuals ($M=2.68; SD=2.19$) reported greater trauma exposure than Asian ($M=2.08; SD=1.87$) individuals. There was a significant difference in depressive symptoms, $F(3, 747) = 4.21, p < .05$, as Asian emerging adults ($M=9.21; SD=5.05$) reported greater depressive symptoms than Hispanic emerging adults ($M=7.72; SD=4.91$). There was a trending effect in dissociative symptoms, but it was not significant, $F(3, 748) = 2.36, p = .07$. Furthermore, there was no significant difference across race/ethnicity in stress sensitivity, $F(3, 748) = 0.77, p = .51$.

Bivariate analyses were conducted with Pearson Correlations and findings indicated a significant, positive relationship between racial/ethnic discrimination and trauma exposure ($r = .32$), depressive symptoms, ($r = .29$), dissociative symptoms, ($r = .25$), stress sensitivity, ($r = .19$), frequency of SI in the past year ($r = .08$), but not SA ($r = .06$). Frequency of SI in the past year was significantly and positively related to frequency of SA in the past year ($r = .31$), trauma exposure ($r = .08$), dissociative symptoms ($r = .16$), stress sensitivity ($r = .22$), and depressive symptoms ($r = .26$). Frequency of SA was significantly, positively associated with trauma exposure ($r = .12$), dissociative symptoms ($r = .10$), depressive symptoms ($r = .15$), but there was no significant relationship with stress sensitivity ($r = .06$).
Regression Analyses

Multiple hierarchical linear regression models were created with racial/ethnic discrimination frequency entered as the predictor, stress sensitivity, dissociation, depression, and suicidal ideation as the mediators, and suicide attempts as the outcome, adjusting for age, sex, race/ethnicity, and traumatic events, to examine a serial mediation effect of stress sensitivity, dissociation, depression, and suicidal ideation on the relation between racial/ethnic discrimination frequency and suicide attempts.

Hypothesis 4: Frequency in Racial/Ethnic Discrimination is Positively Associated with Stress, Sensitivity, Dissociative Symptoms, and Depressive Symptoms, but not Suicidal Ideation and Suicide Attempts

The model with racial/ethnic discrimination frequency predicting dissociation accounted for 12% of the variance, $R^2 = .12$, $F (7,739) = 13.91, p < .05$. After adjusting for age, sex, race/ethnicity, and trauma exposure, there was a significant effect of racial/ethnic discrimination frequency on dissociation, $b = 0.51$, 95% CI = 0.35 - 0.68, $p < .05$. The model with racial/ethnic discrimination frequency predicting stress sensitivity accounted for 6% of the variance, $R^2 = .06$, $F (7,739) = 6.96, p < .05$. After adjusting for age, sex, race/ethnicity, and trauma exposure, there was a significant effect of racial/ethnic discrimination frequency on stress sensitivity, $b = 0.36$, 95% CI = 0.22 - 0.50, $p < .05$. The model with racial/ethnic discrimination frequency predicting depressive symptoms accounted for 11% of the variance, $R^2 = .11$, $F (7,747) = 14.67, p < .05$. After adjusting for age, sex, race/ethnicity, and trauma exposure, there was a significant effect of racial/ethnic discrimination frequency on depressive symptoms, $b = 0.33$, 95% CI = 0.23 - 0.42, $p < .05$. The model with racial/ethnic discrimination frequency predicting suicidal ideation accounted for .3% of the variance, $R^2 = .003$, $F (7,747) = 1.36, p = .22$. After adjusting for age,
sex, race/ethnicity, and trauma exposure, there was not a significant effect of racial/ethnic discrimination frequency on suicidal ideation, \( b = 0.03, 95\% \text{ CI} = -0.01 - 0.07, p = .14 \). The model with racial/ethnic discrimination frequency predicting suicide attempts accounted for 3% of the variance, \( R^2 = .03, F (7,746) = 4.12, p < .05 \). After adjusting for age, sex, race/ethnicity, and trauma exposure, there was not a significant effect of racial/ethnic discrimination frequency on suicide attempts, \( b = 0.001, 95\% \text{ CI} = -0.002 - 0.004, p = .44 \).

**Hypothesis 5: Direct and Indirect Effects of Racial/Ethnic Discrimination on Suicide Attempts Through Dissociative Symptoms, Depressive Symptoms, and Suicidal Ideation**

The model with racial/ethnic discrimination frequency and dissociation predicting depression accounted for 32% of the variance, \( R^2 = .32, F (8,738) = 42.65, p < .05 \). After adjusting for age, sex, race/ethnicity, and trauma exposure, there was a significant effect of racial/ethnic discrimination frequency on depression, \( b = 0.19, 95\% \text{ CI} = 0.10 - 0.28, p < .05 \). There was also a significant effect of dissociation on depression, \( b = 0.26, 95\% \text{ CI} = 0.23 - 0.30, p < .05 \). The model with racial/ethnic discrimination frequency, dissociation, and depression predicting suicidal ideation accounted for 8% of the variance, \( R^2 = .08, F (9,737) = 6.80, p < .05 \). After adjusting for age, sex, race/ethnicity, and trauma exposure, there was no significant effect of racial/ethnic discrimination, \( b = -0.007, 95\% \text{ CI} = -0.05 - 0.03, p = .74 \), nor dissociation, \( b = 0.009, 95\% \text{ CI} = -0.01 - 0.03, p = .35 \), on suicidal ideation. However, there was a significant effect of depression, \( b = 0.10, 95\% \text{ CI} = 0.06 - 0.13, p < .05 \).

The model with racial/ethnic discrimination frequency, dissociation, depression, and suicidal ideation predicting suicide attempts accounted for 13% of the variance, \( R^2 = .13, F (10,736) = 11.37, p < .05 \). After adjusting for age, sex, race/ethnicity, and trauma exposure, there was no significant effect of racial/ethnic discrimination frequency, \( b = 0.0001, 95\% \text{ CI} = -0.003 - 0.003 \).
0.003, \( p = .97 \), dissociation, \( b = 0.0000, 95\% \text{ CI} = -0.001 - 0.001, p = .99 \), or depression, \( b = 0.001, 95\% \text{ CI} = -0.001 - 0.004, p = .31 \), on suicidal attempts. However, there was a significant effect of suicidal ideation, \( b = 0.02, 95\% \text{ CI} = 0.02 - 0.03, p < .05 \). Furthermore, though there was no direct effect of racial/ethnic discrimination frequency on suicide attempts, there was a significant indirect effect through dissociation to depression to suicidal ideation, \( b = 0.003, 95\% \text{ CI} = 0.0001 - 0.0008 \). There was also a significant indirect effect through depression to suicidal ideation, \( b = 0.0004, 95\% \text{ CI} = 0.0001 - 0.001 \). For more information on the mediation effect of dissociation, depression and suicidal ideation in the relation between racial/ethnic discrimination frequency and suicide attempts, see Figure 6.

**Hypothesis 6: Direct and Indirect Effects of Racial/Ethnic Discrimination on Suicide Attempts Through Stress Sensitivity, Depressive Symptoms, and Suicidal Ideation**

The model with racial/ethnic discrimination frequency and stress sensitivity predicting depression accounted for 49% of the variance, \( R^2 = .49, F (8,738) = 88.19, p < .05 \). After adjusting for age, sex, race/ethnicity, and trauma exposure, there was a significant effect of racial/ethnic discrimination frequency on depression, \( b = 0.16, 95\% \text{ CI} = 0.09 - 0.24, p < .05 \). There was also a significant effect of stress sensitivity on depression, \( b = 0.45, 95\% \text{ CI} = 0.41 - 0.49, p < .05 \). The model with racial/ethnic discrimination frequency, stress sensitivity, and depression predicting suicidal ideation accounted for 8% of the variance, \( R^2 = .08, F (9,737) = 7.05, p < .05 \). After adjusting for age, sex, race/ethnicity, and trauma exposure, there was no significant effect of racial/ethnic discrimination frequency, \( b = -0.006, 95\% \text{ CI} = -0.04 - 0.03, p = .77 \), nor stress sensitivity, \( b = 0.02, 95\% \text{ CI} = -0.003 - 0.05, p = .09 \), on suicidal ideation. However, there was a significant effect of depression, \( b = .08, 95\% \text{ CI} = 0.04 - 0.11, p < .05 \).
The model with racial/ethnic discrimination frequency, stress sensitivity, depression, and suicidal ideation predicting suicide attempts accounted for 14% of the variance, $R^2 = .14$, $F(10,736) = 11.80, p < .05$. After adjusting for age, sex, race/ethnicity, and trauma exposure, there was no significant effect of racial/ethnic discrimination frequency, $b = 0.0002, 95\% CI = -0.003 - 0.003, p = .91$, nor stress sensitivity, $b = -0.002, 95\% CI = -0.004 - 0.0000, p = .05$, on suicidal attempt. There was, however, a significant effect of depression, $b = 0.003, 95\% CI = 0.0002 - 0.006, p < .05$, and suicidal ideation, $b = .02, 95\% CI = 0.02 - 0.03, p < .05$, on suicide attempts. Though there was no significant direct effect of racial/ethnic discrimination frequency on suicide attempts, there was a significant indirect effect through stress sensitivity to depression, $b = 0.0005, 95\% CI = 0.0000 - 0.001$. There was also a significant indirect effect through stress sensitivity to suicidal ideation, $b = 0.0002, 95\% CI = 0.0000 - 0.0007$, and a significant indirect effect through stress sensitivity to depression to suicidal ideation, $b = 0.0003, 95\% CI = 0.0001 - 0.0008$. Additionally, there was a significant indirect effect through depression, $b = 0.0005, 95\% CI = 0.0001 - 0.001$, and through depression to suicidal ideation, $b = 0.0003, 95\% CI = 0.0001 - 0.0008$. For more information on the mediation effect of stress sensitivity, depression and suicidal ideation in the relation between racial/ethnic discrimination frequency and suicide attempts, see Figure 7.

**Preliminary Discussion: Study 2**

**Summary of Findings**

Findings from Study 1 demonstrated that posttraumatic stress and depressive symptoms help explain how racial/ethnic discrimination stress may increase risk for suicidal ideation among racial/ethnic minority emerging adults, particularly among females. Given these findings, Study 2 further examined trauma-induced reactions (i.e., dissociation, stress sensitivity) as
explanatory factors of the relation between racial/ethnic discrimination and risk for suicidal behaviors among racial/ethnic minority emerging adults. Specifically, study 2 examined whether stress sensitivity and dissociation was positively associated with depressive symptoms and suicidal ideation to help explain the relation between frequency of racial/ethnic discrimination and suicidal attempts after accounting for other traumatic experiences. It was hypothesized that frequency of racial/ethnic discrimination would be positively associated with stress sensitivity, dissociation, depressive symptoms, suicidal ideation and attempts. The findings partially supported the hypothesis in that racial/ethnic discrimination was positively associated with stress sensitivity, dissociation, and depressive symptoms. Furthermore, while there was no significant direct relation between racial/ethnic discrimination and suicide attempts, there were indirect relations through depressive symptoms and suicidal ideation.

As hypothesized, increases in the frequency of racial/ethnic discrimination was associated with increases in dissociation, even after adjusting for trauma exposure. Also as hypothesized, increases in frequency of racial/ethnic discrimination was associated with increases in stress sensitivity, adjusting for trauma exposure. The hypothesis that increases in racial/ethnic discrimination frequency would be associated with increases in suicide attempts was partially supported. While racial/ethnic discrimination frequency was not directly associated with suicidal ideation or suicide attempt, there was an indirect relation through dissociation to depression to suicidal ideation. Perhaps racial/ethnic discrimination increases risk for suicide attempts to the degree that it increases dissociation, which in turn increases depression, which in turn increases suicidal ideation. Similarly, there was an indirect relation between racial/ethnic discrimination frequency and suicide attempt through stress sensitivity to depression to suicidal ideation. Specifically, racial/ethnic discrimination may increase risk for suicide attempts to the
degree that it increases stress sensitivity, which in turn increases depression, which in turn increases suicidal ideation.

**Extending the Literature**

These present findings expand on previous research demonstrating a relation between racial/ethnic discrimination and dissociative symptoms (Polanco-Roman et al., 2016). Specifically, it suggests that cumulative experiences of racial/ethnic discrimination may increase vulnerability for stress sensitivity and dissociative symptoms among racial/ethnic minority emerging adults. This lends additional support to Carter’s (2007) race-based traumatic stress theory, which proposes that race-based incidents including racial/ethnic discrimination may elicit traumatic stress reactions. The present findings also support previous research demonstrating that depression mediates the relation between racial/ethnic discrimination and suicidal ideation (Walker, et al., 2014). The present findings expand upon existing research by demonstrating that posttraumatic stress reactions, such as increased stress sensitivity and dissociation, may be an underlying mechanism through which frequent experiences of racial/ethnic discrimination may increase risk for suicidal thoughts and behaviors. Thus, stress sensitivity and dissociation provide some insight into how racial/ethnic discrimination may increase vulnerability for suicidal behaviors among racial/ethnic minority emerging adults, specifically through increases in depression and suicidal ideation.

Taken together, the present findings broaden our understanding of the relation between racial/ethnic discrimination and risk for suicide by further demonstrating how trauma-induced reactions such as dissociation and stress sensitivity may yield depression and suicidal ideation, and thus increase risk for engaging in suicidal behaviors among racial/ethnic minority emerging adults.
CHAPTER 5: General Discussion

Emerging adulthood, or the developmental period between adolescence and adulthood (Arnett, 2000), is a particularly vulnerable time in which racial/ethnic minority individuals are most likely to die by suicide (CDC, 2013). Unfortunately, while much of what we know about the suicidal process is grounded in our understanding of risk for suicide among White, male adults (Joe, Canetto, & Romer, 2008), there is growing evidence to suggest that culture-related experiences may impact risk for suicidal thoughts and behaviors (Chu et al., 2010). Thus, little information is available about vulnerability to suicidal thoughts and behaviors among racial/ethnic minority emerging adults. One of the few suicide models available to highlight the role of cultural experiences in the suicidal process is the cultural model and theory of suicide proposed by Chu and colleagues (2010), which notes the various avenues through which cultural experiences may impact the pathway to suicidal thoughts and behaviors. Such avenues include the types of stressors racial/ethnic minority individuals are exposed to, including race-based incidents such as racial/ethnic discrimination, how such experiences may manifest into distress and are managed, and the ways in which suicidal thoughts and behaviors are expressed.

With the growing evidence suggesting a link between racial/ethnic discrimination and risk for suicidal thoughts and behaviors among racial/ethnic minority emerging adults (Cheng et al., 2010; Perez-Rodriguez et al., 2014; Hwang & Goto, 2009; Gomez, Miranda & Polanco, 2011; Polanco-Roman & Miranda, 2013; Walker, Salami, Carter & Flowers, 2014), the present study sought to examine the mechanisms underlying this relation. Drawing upon the race-based traumatic stress theory proposed by Carter (2007), which suggests that race-based incidents such as experiences of racial/ethnic discrimination may elicit trauma-induced reactions among some racial/ethnic minority individuals, the present study examined trauma-induced reactions as
explanatory factors through which experiences of racial/ethnic discrimination may increase risk for suicidal thoughts and behaviors among racial/ethnic minority emerging adults.

**Extending the Literature**

The direct relation between racial/ethnic discrimination and suicidal ideation among White males was an unexpected finding. Although the prevalence of racial/ethnic discrimination among this group is generally lower compared to racial/ethnic minority individuals, perhaps White males are more sensitive to the harmful effects of racial/ethnic discrimination. This may be due to the limited racial/ethnic socialization evident among White individuals, which may not allow for the opportunity to acquire race-related coping skills to thwart the harmful effects of race-related stress (Neblett et al., 2012). In a similar vein, considering that the sample was recruited from a minority serving institution (i.e., the student population is largely comprised of racial/ethnic minority individuals), the White students may be more susceptible to minority stress within this context, and thus, increasing their susceptibility to the harmful effects of racial/ethnic discrimination (Meyer, 2003). Perhaps existing models of suicide that highlight the role of impulsivity and aggression are more relevant among White males compared to racial/ethnic minority males and females, as these models have been cited to address gender disparity in suicidal deaths, as males are more likely to die by suicide than females (Mann et al., 1999; Van Orden et al., 2010). Furthermore, aggression and impulsivity has been linked to increased risk for suicide among younger populations compared to older populations (McGirr et al., 2008).

Furthermore, there was a indirect relation between racial/ethnic discrimination and suicidal ideation among Asian, Black, Latino, and other emerging adults identifying as non-White, through posttraumatic stress reactions (i.e., posttraumatic stress symptoms, depressive symptoms, stress sensitivity, and dissociative symptoms), particularly among women.
Depressive symptoms emerged as the most robust mediator in the relation between racial/ethnic discrimination and suicidal ideation among females, which may be due in large part to the strong relation between depression and risk for suicide (Nock et al., 2008). Similarly, while experiences of racial/ethnic discrimination has been linked to various psychiatric symptoms, it is most strongly associated with depressive symptoms (Pascoe & Richman, 2009). Thus, racial/ethnic discrimination may increase risk for suicidal thoughts and behaviors to the degree that it increases depressive symptoms. As previously noted, racial/ethnic minority individuals are more likely to experience racial/ethnic discrimination compared to their White counterparts, which may impact the nature of the relation between racial/ethnic discrimination and risk for suicide through cumulative exposure to race-based traumatic stress. Similarly, the nature of discriminatory experiences has been shown to vary across race and ethnicity (Hwang & Goto, 2009; Greene, Way & Pahl, 2006), which may also impact the nature of this relation. Unlike White males where experiences of racial/ethnic discrimination in it of itself may increase risk for suicidal thoughts, among racial/ethnic minority emerging adults, females in particular, the deleterious effect of racial/ethnic discrimination on mental health through stress-related reactions appears to increase vulnerability to suicidal thoughts and behaviors.

The present findings support previous research that demonstrated depression as an explanatory factor in the relation between perceptions of racism and thoughts of death among African American girls (Walker et al., 2017), though their finding extended to African American boys as well. Additionally, Walker and colleagues (2017) reported gender differences in anxiety as an explanatory factor in the relation between perceptions of racism and thoughts of death, as anxiety was a significant mediator among African American girls, but not among African American boys. Taken together, these findings highlight the racial/ethnic and gender differences
in the underlying mechanism through which experiences of discrimination may increase risk for suicidal thoughts and behaviors. Brondolo and colleagues (2016) offer a social cognitive perspective to explain the deleterious effects of racism on mental health. They note that lifetime exposure to racism yields a biological vulnerability to future experiences of racism, which compromises cognitive flexibility and engenders negative schemas and appraisals. This then elicits maladaptive cognitive coping responses serving to prolong exposure to the negative thoughts and feelings associated with the race-related experience, and thus, maintaining the depressive symptoms.

These findings expand on previous research demonstrating that racial/ethnic discrimination is associated with symptoms of Posttraumatic Stress Disorder (PTSD) and Major Depressive Disorder (MDD) to varying degrees across Black, Hispanic, and Asian adults in the U.S. (Chou et al 2012), by suggesting this is particularly so among females. Specifically, the findings suggest that the relation between racial/ethnic discrimination and suicidal ideation varies by racial/ethnic group and sex, and that posttraumatic stress and depression may help explain the relation, particularly among racial/ethnic minority emerging adult women. In other words, racial/ethnic discrimination stress may elicit different psychological responses across White, Black, Asian, Hispanic, and other race/ethnicity individuals (e.g., biracial), and across females and males, which may differentially impact the trajectory of the suicidal process. Alternatively, it is possible that our current understanding and assessment of depression among Black males may be limited, as previous research suggests that Black adolescents may uniquely express depressive symptoms (Lu, Lindsey, Irsheid & Nebbitt, 2017). In a similar vein, posttraumatic stress symptoms offers some insight into how Asian females may respond to racial/ethnic discrimination stress, and subsequently, be at risk for thinking about suicide. This
may be due in part to the high prevalence of PTSD among Southeast Asian subgroup, as research suggests that Southeast Asian immigrants are particularly vulnerable to developing posttraumatic stress symptoms, as Asian individuals are more likely to report psychological distress as somatic symptoms (Sue et al., 2012).

These findings further suggest that responses to racial/ethnic discrimination and the suicidal process, in particular, may indeed be impacted by cultural experiences, as risk for suicide may vary across race/ethnicity and sex. It supports the cultural theory and model of suicide proposed by Chu and colleagues (2010) by elucidating the underlying mechanisms in the relation between racial/ethnic discrimination and risk for suicidal thoughts and behaviors among racial/ethnic minority emerging adults through the framework of race-based traumatic stress (Carter, 2007). Thus, the present findings demonstrate that racial/ethnic discrimination may potentially increase risk for suicidal thoughts and behaviors through posttraumatic stress reactions, above and beyond other trauma exposure. This demonstrates that racial/ethnic discrimination functions as a unique traumatic stressor and warrants further attention in the assessment and treatment of depressive and posttraumatic stress symptoms among racial/ethnic minority youth.

The relation between racial/ethnic discrimination and risk for suicide is nuanced. Specifically, experiences of racial/ethnic discrimination, whether through perceived, subjective distress or through a cumulative effect of frequent exposure over time, may yield posttraumatic stress reactions such as stress sensitivity, dissociation, posttraumatic stress symptoms, and depression, which may yield suicidal thoughts and behaviors among racial/ethnic minority emerging adults. The emotional and psychological injury sustained through race-based incidents like racial/ethnic discrimination takes a significant toll on the mental health of racial/ethnic
minority individuals, particularly emerging adults. This is so for a number of reasons, one of which is the prevalence and pervasiveness of said experiences among this population. Thus, it is an environmental stressor that is difficult to avoid or escape and functions similarly to other environmental and social stressors (e.g., poverty).

Research also indicates that emerging adults are less likely to respond to or cope adaptively to these experiences compared to older adults (APA, 2016), placing them at increased risk for developing posttraumatic stress reactions, depressive symptoms, and ultimately, suicidal behavior. Similarly, racial/ethnic minority youth are less likely to seek and benefit from mental health services compared to their White counterparts (Downs & Eisenberg, 2012), which further increases their risk for thinking about or engaging in suicidal behavior. With increasing exposure to racial/ethnic discrimination, and the subsequent cumulative, deleterious effect over time, compounded with the lack of seeking mental health services, racial/ethnic minority are vulnerable to implementing maladaptive and unhealthy responses to the growing and inescapable emotional distress. This then promotes suicidal thoughts and behaviors, as it is deemed the only viable solution to end the aversion of the psychological and emotional pain.

Coping responses have also been implicated in moderating the deleterious mental health effects of racial/ethnic discrimination (Brondolo et al., 2008), which extends to buffering against risk for suicidal ideation. Neblett and colleagues (2012) suggest that the process of developing of a racial/ethnic identity may buffer the harmful effects of racial discrimination by promoting adaptive attributions of the race-based incidents as well as coping strategies such as utilizing social support in response to such experiences. In fact, researchers have identified unique coping strategies specific to racism-related experiences (Forsyth & Carter, 2014), alluding to the unique demands of race-related stress. Religiosity/spirituality has also been identified as a protective
factor against suicidal thoughts and behaviors, particularly among Black populations, by promoting adaptive coping styles such as negatives attitudes toward suicide and increased social support (Chu et al., 2010).

The effects of coping with racial/ethnic discrimination may be better understood through examining emotion regulation processes, or behavioral, experiential and physiological responses to environmental factors such as race-related stressors (Gross, 2002), particularly as cultural determinants impact emotional processes including emotion regulation (Gross & John, 2003; Mesquita & Frijda, 1992; Matsumoto et al., 2008). For instance, Gross and John (2003) found that racial/ethnic minorities were more likely than White individuals to suppress their emotions, and while suppression is more strongly associated with negative adjustment among White individuals, this is not evident among racial/ethnic minority individuals (Matsumoto et al., 2008). While little is known about emotion regulation responses elicited by racial/ethnic discrimination in an attempt to regulate the resulting distress, one study by Hatzenbuhler and colleagues (2009) reported that certain maladaptive emotion regulation strategies (i.e., rumination and suppression) mediated the relation between discrimination stress and psychological distress. Furthermore, there is growing literature suggesting that limited emotion regulation strategies were associated with increased risk for suicidal behaviors (Rajappa et al., 2012). Thus, future research should examine emotion regulation processes elicited in response to racial/ethnic discrimination, and how it may impact risk for suicidal thoughts and behaviors among racial/ethnic minority emerging adults.

Limitations and Future Directions

There are several limitations that should be considered when interpreting these findings. Both studies recruited emerging adults from a college student population in the Northeast U.S.;
thus, while the student bodies of these colleges are representative of the larger community with regard to sociodemographic factors such as race/ethnicity, immigration status, socioeconomic status, the findings may not generalize to the greater emerging adult population due to regional influences or experiences unique to college life. The studies also relied on non-clinical samples, and while racial/ethnic minority youth are underrepresented in clinical settings, the findings may not account for increased clinical severity in suicide risk.

Another limitation of the studies is the cross-sectional design, which limits causal inferences or temporal directionality in the relations among the variables. Similarly, the measures capture different time frames. Therefore, while it is suggested that experiences of racial/ethnic discrimination may yield posttraumatic stress reactions, which may yield suicidal thoughts and behaviors, perhaps the suicidal process itself makes an individual more vulnerable to experiencing posttraumatic stress, dissociation, stress sensitivity, and/or experiences of racial/ethnic discrimination. Nonetheless, there is evidence to suggest that experiences of racial/ethnic discrimination may increase risk for suicidal ideation, as previous research demonstrated that increases in racial/ethnic discrimination prospectively predicted increases in suicidal ideation through increases in hopelessness (Polanco-Roman & Miranda, 2013).

Similarly, in a longitudinal sample of African American youth, Walker and colleagues (2017) found that perceived racism predicted thoughts of death. The data is also subject to self-report bias, as the data was collected exclusively through self-report surveys. Although Study 1 did not account for trauma history including childhood trauma, which is a well-documented risk factor for suicidal thoughts and behaviors (Nock et al., 2008); and thus, unable to rule out the possibility that general trauma may impact the relation between racial/ethnic discrimination and suicidal thoughts, this information was collected and accounted for in Study 2. Therefore, there
may have been some overlap between posttraumatic stress and racial/ethnic discrimination stress in Study 1, as the Impact of Events Scale used to measure posttraumatic stress inquires about a broadly defined distressing experience. Additionally, while suicidal ideation was assessed with a single item in Study 1, Study 2 assessed suicidal ideation and attempts with a more comprehensive measure, SITBI (Nock et al., 2008).

Lastly, though the present sample was racially/ethnically diverse, facilitating the exploration of racial/ethnic differences in the relation between perceptions of racism and risk for suicide, it did not account for within group differences such as immigration status, time in the U.S., and country of origin, which may impact this relation. For instance, Duldulao and colleagues (2009) found that U.S.-born Asian American women reported higher prevalence of suicidal ideation and suicide attempts compared to U.S.-born Asian American men as well as foreign-born Asian men and women. Similarly, Joe and colleagues (2009) found that African American adolescents were five times more likely to report suicide attempts compared to Caribbean Black Americans. Within group differences have also been cited in perceptions of racism as it relates to mental health (Gee, Ryan, Laflamme & Holt, 2006). For instance, among Latinos, U.S.-born and immigrants arriving to U.S. as a young child were more likely to report racial/ethnic discrimination compared to immigrants arriving to the U.S. as an adult (Perez et al., 2008).

Despite these limitations, this study provides much needed information about some of the mechanisms underlying the relation between racial/ethnic discrimination and risk for suicidal thoughts and behaviors among racial/ethnic minority emerging adults. Specifically, the present study adds to the existing body of literature by focusing exclusively on emerging adults, who are more vulnerable to the harmful effects of racial/ethnic discrimination compared to older adults.
Racial/Ethnic Discrimination and Risk for Suicide

(APA, 2016). Lastly, the size and diversity of the sample facilitated the examination of sex and racial/ethnic group differences in the relation between racial/ethnic discrimination and risk for suicidal thoughts and behaviors. A noteworthy strength of this study is the varied assessment of racial/ethnic discrimination: a more subjective measure (i.e., distress) and a more objective measure (i.e., frequency of events during lifetime). However, while this study focused on overt displays of racism through concrete discriminatory events, there is also growing evidence demonstrating deleterious mental health effects of subtle, chronic, and covert displays of racism, also referred to as microaggressions (Sue et al., 2007). In fact, a meta-analytic study examining the harmful effects of overt and covert displays of discrimination reported that covert forms of racism may be more injurious than overt discrimination due to their ambiguous and chronic nature, which the authors suggest impairs cognitive performance and engenders maladaptive misattributions (Jones et al., 2013). Future research should explore the relation between racial microaggressions and risk for suicidal thoughts and behaviors among racial/ethnic minority youth, as a recent study by Hollingsworth and colleagues (2017) found that racial microaggressions were associated with increases in suicidal ideation among African American college students. Similarly, researchers reported that depressive symptoms mediated the relation between racial microaggression and suicidal ideation among racial and ethnic minority college students (O’Keefe et al, 2015).

Clinical Implications and Concluding Remarks

The present findings have significant clinical implication as they provide further insight into the suicidal process among racial/ethnic minority youth and contribute to the efforts of combating the racial/ethnic and gender disparity in suicidal thoughts and behaviors among emerging adult populations. Specifically, the findings suggest that racial/ethnic minority
emerging adults, namely women, who experience racial/ethnic discrimination are at increased risk for psychological stress akin to stress-related or posttraumatic stress reactions that require clinical attention. If left untreated, the additive exposure to racial/ethnic discrimination over time could further heighten susceptibility to more severe manifestations of psychological distress in the form of suicidal thoughts or behaviors. Identifying psychological symptoms that may result in response to racial/ethnic discrimination facilitates a more culturally competent approach to outreach, assessment, and treatment for racial/ethnic minority youth who are at increased risk for suicide. For instance, assessments for trauma exposure should account for interpersonal experiences of racism such as racial/ethnic discrimination so as to not overlook race-based traumatic stress as a potential source of trauma reactions or adaptations. Although national data indicate risk for suicide tapers by later adulthood among racial/ethnic minority individuals (Centers for Disease Control and Prevention, 2013), it remains unclear whether this is due to generational differences across age groups, or whether the pattern evident in younger populations will persist through adulthood and ultimately change the trajectory of risk for suicide among racial/ethnic minority adults. Nonetheless, racial/ethnic minority youth are more likely to die by suicide than adults, and emerging adulthood is a particularly vulnerable period. Thus, further information about the suicidal process among racial/ethnic minority emerging adults is further warranted. While there is growing evidence to suggest that risk for suicide is influenced by cultural experiences, this remains a relatively understudied area in suicide literature, which is a disservice to racial/ethnic minority youth at risk for suicide.

The evidence for the pernicious effects of racial/ethnic discrimination on mental health is unequivocal, and there is growing research demonstrating that racial/ethnic discrimination may increase risk for suicidal thoughts and behaviors. This is particularly evident among racial/ethnic
minority emerging adults, who are increasingly exposed to, while ill-prepared to cope with, experiences of racial/ethnic discrimination, compared to older adults. The present findings suggest that experiences of racial/ethnic discrimination and associated stress may increase vulnerability to suicidal thoughts and behaviors among racial/ethnic minority emerging adults to the degree that it increases traumatic stress reactions (i.e., depressive symptoms, posttraumatic stress, stress sensitivity, dissociative symptoms) and this is especially true for females of color. Thus, racial/ethnic discrimination may function as a unique source of traumatic stress among racial/ethnic minority emerging adults, which may engender suicidal thoughts and behaviors. Racial/ethnic discrimination and other interpersonal manifestations of racism that yield emotional distress can create such an unbearable, inescapable, insurmountable psychological pain, making suicide a viable option, and potentially resulting in the untimely death of racial and ethnic minority youth. Racism comes at a cost, and the ultimate price society pays is a life.
Table 1

Sample characteristics, means and standard deviations and comparison by sex and race/ethnicity in Study 1

<table>
<thead>
<tr>
<th></th>
<th>Total (N=1,541)</th>
<th>Male (N=441)</th>
<th>Female (N=1,100)</th>
<th>t</th>
<th>White (N=314)</th>
<th>Black (N=274)</th>
<th>Hispanic (N=715)</th>
<th>Asian (N=180)</th>
<th>Other (N=58)</th>
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<tbody>
<tr>
<td><strong>Age</strong></td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>19.88 (2.25)</td>
<td>19.96 (2.35)</td>
<td>19.85 (2.21)</td>
<td></td>
<td>20.12 (2.54)</td>
<td>19.94 (2.27)</td>
<td>19.74 (2.09)</td>
<td>19.77 (2.07)</td>
<td>20.05 (2.84)</td>
<td>2.60*</td>
</tr>
<tr>
<td><strong>BDI</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.44 (8.58)</td>
<td>8.73 (7.74)</td>
<td>11.27 (8.88)</td>
<td>5.26*</td>
<td>10.85 (8.75)</td>
<td>10.22 (8.12)</td>
<td>10.74 (8.97)</td>
<td>9.78 (7.91)</td>
<td>10.31 (8.70)</td>
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</tr>
<tr>
<td><strong>GEDS-Frequency</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24.43 (9.87)</td>
<td>25.53 (11.51)</td>
<td>23.90 (9.24)</td>
<td>2.53*</td>
<td>22.42 (8.33)</td>
<td>26.15 (11.00)</td>
<td>24.38 (10.33)</td>
<td>25.43 (10.48)</td>
<td>24.48 (9.93)</td>
<td>5.01*</td>
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<tr>
<td><strong>GEDS-Stress</strong></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>32.46 (18.52)</td>
<td>32.46 (18.83)</td>
<td>32.37 (18.44)</td>
<td></td>
<td>27.19 (15.23)</td>
<td>34.81 (19.51)</td>
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<td>36.19 (22.62)</td>
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<tr>
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<tr>
<td></td>
<td>27.52 (21.30)</td>
<td>24.78 (21.47)</td>
<td>28.55 (21.15)</td>
<td></td>
<td>27.11 (21.73)</td>
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<tr>
<td><strong>Hyperarousal</strong></td>
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<td></td>
<td></td>
<td>1.90+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.04 (1.01)</td>
<td>.97 (1.03)</td>
<td>1.08 (1.01)</td>
<td></td>
<td>1.06 (1.05)</td>
<td>1.06 (1.05)</td>
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<td><strong>Intrusion</strong></td>
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<td></td>
<td></td>
<td>2.62*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>1.27 (1.06)</td>
<td>1.16 (1.06)</td>
<td>1.32 (1.05)</td>
<td></td>
<td>1.28 (1.07)</td>
<td>1.26 (1.10)</td>
<td>1.27 (1.06)</td>
<td>1.31 (1.01)</td>
<td>1.22 (0.96)</td>
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</tr>
<tr>
<td><strong>Avoidance</strong></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>1.38 (1.02)</td>
<td>1.22 (1.01)</td>
<td>1.44 (1.01)</td>
<td></td>
<td>1.31 (1.01)</td>
<td>1.40 (1.08)</td>
<td>1.39 (0.96)</td>
<td>1.38 (0.96)</td>
<td>1.41 (0.94)</td>
<td>0.39</td>
</tr>
<tr>
<td><strong>SBQ-R</strong></td>
<td></td>
<td></td>
<td></td>
<td>8.11+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.34 (0.79)</td>
<td>0.28 (0.75)</td>
<td>0.36 (0.80)</td>
<td></td>
<td>0.36 (0.79)</td>
<td>0.31 (0.76)</td>
<td>0.32 (0.77)</td>
<td>0.41 (0.86)</td>
<td>0.42 (0.91)</td>
<td>0.80</td>
</tr>
</tbody>
</table>

Note. BDI = Beck Depression Inventory-II; GEDS = General Ethnic Discrimination Scale; PTS = Posttraumatic Stress; SBQ-R = Suicidal Behavior Questionnaire-Revised. * p < .05; + p < .10.
Table 2

Bivariate analyses for variables of interest in Study 1

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tbody>
<tr>
<td>1. BDI</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2. GEDS-Frequency</td>
<td>.17*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. GEDS-Stress</td>
<td>.20*</td>
<td>.78*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PTS Total</td>
<td>.47*</td>
<td>.25*</td>
<td>.30*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. PTS-Hyperarousal</td>
<td>.47*</td>
<td>.30*</td>
<td>.34*</td>
<td>.92*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. PTS-Avoidance</td>
<td>.39*</td>
<td>.19*</td>
<td>.24*</td>
<td>.93*</td>
<td>.76*</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. PTS-Intrusion</td>
<td>.46*</td>
<td>.23*</td>
<td>.27*</td>
<td>.96*</td>
<td>.87*</td>
<td>.82*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>8. SBQ-R (SI)</td>
<td>.43*</td>
<td>.09*</td>
<td>.11*</td>
<td>.24*</td>
<td>.19*</td>
<td>.24*</td>
<td>.26*</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. BDI = Beck Depression Inventory-II; GEDS = General Ethnic Discrimination Scale; PTS = Posttraumatic Stress; SBQ-R = Suicidal Behavior Questionnaire-Revised; SI = Suicidal Ideation Frequency in the past year. *p < .05.
### Table 3

Hierarchical linear regression model with racial/ethnic discrimination stress, posttraumatic stress, and depression predicting suicidal ideation, adjusting for age, sex, and race/ethnicity.

<table>
<thead>
<tr>
<th></th>
<th>Model 1 Adj. $R^2$</th>
<th>Model 2 Adj. $R^2$</th>
<th>Model 3 Adj. $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.03 (.01)*</td>
<td>-.03 (.01)*</td>
<td>-.02 (.01)*</td>
</tr>
<tr>
<td>Sex</td>
<td>.10 (.05)*</td>
<td>.07 (.05)</td>
<td>-.002 (.04)</td>
</tr>
<tr>
<td>Black</td>
<td>-.11 (.07)</td>
<td>-.09 (.07)</td>
<td>-.04 (.06)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-.11 (.06)</td>
<td>.09 (.06)</td>
<td>-.07 (.05)</td>
</tr>
<tr>
<td>Asian</td>
<td>-.05 (.08)</td>
<td>-.03 (.08)</td>
<td>.02 (.07)</td>
</tr>
<tr>
<td>Other</td>
<td>.03 (.12)</td>
<td>.06 (.11)</td>
<td>.07 (.10)</td>
</tr>
<tr>
<td>GEDS-Stress</td>
<td>.005 (.001)*</td>
<td>.002 (.001)</td>
<td>.000 (.001)</td>
</tr>
<tr>
<td>PTS</td>
<td>.008 (.001)*</td>
<td>.002 (.001)</td>
<td></td>
</tr>
<tr>
<td>BDI</td>
<td>.04 (.003)*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. BDI = Beck Depression Inventory-II; GEDS = General Ethnic Discrimination Scale; PTS = Posttraumatic Stress; SBQ-R = Suicidal Behavior Questionnaire-Revised. * $p < .05$. 
Figure 1

Mediation effect through posttraumatic stress and depressive symptoms in the relation between racial/ethnic discrimination stress and suicidal ideation, adjusting for age, among White emerging adults

Note. * $p < 0.05$; $b =$ Unstandardized regression coefficient; [Direct Effect]; (Indirect Effect)
Figure 2
Mediation effect through posttraumatic stress and depressive symptoms in the relation between racial/ethnic discrimination stress and suicidal ideation, adjusting for age, among Black emerging adults

Note. * p < 0.05; b = Unstandardized regression coefficient; [Direct Effect]; (Indirect Effect)
Figure 3

Mediation effect through posttraumatic stress and depressive symptoms in the relation between racial/ethnic discrimination stress and suicidal ideation, adjusting for age, among Hispanic emerging adults.

Note. * $p < 0.05$; $b =$ Unstandardized regression coefficient; [Direct Effect]; (Indirect Effect)
Figure 4

Mediation effect through posttraumatic stress and depressive symptoms in the relation between racial/ethnic discrimination stress and suicidal ideation, adjusting for age, among Asian emerging adults

Note. * $p < 0.05$; $b$ = Unstandardized regression coefficient; [Direct Effect]; (Indirect Effect)
**Figure 5**

Mediation effect through posttraumatic stress and depressive symptoms in the relation between racial/ethnic discrimination stress and suicidal ideation, adjusting for age, among emerging adults of other race/ethnicity.

Note. *p < 0.05; + p < .10; b = Unstandardized regression coefficient; [Direct Effect]; (Indirect Effect)
Table 4
Means and standard deviations and comparison across race/ethnicity in Study 2

<table>
<thead>
<tr>
<th></th>
<th>Total (N=749)</th>
<th>Black (N=174)</th>
<th>Hispanic (N=246)</th>
<th>Asian (N=256)</th>
<th>Other (N=72)</th>
<th>F</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Depression</td>
<td>8.64 (5.19)</td>
<td>8.83 (5.59)</td>
<td>7.72 (4.91)</td>
<td>9.21 (5.05)</td>
<td>9.34 (5.25)</td>
<td>4.21</td>
<td>0.01*</td>
</tr>
<tr>
<td>Stress Sensitivity</td>
<td>28.18 (7.18)</td>
<td>28.47 (8.00)</td>
<td>27.62 (7.14)</td>
<td>28.43 (6.66)</td>
<td>28.58 (6.99)</td>
<td>0.78</td>
<td>0.51</td>
</tr>
<tr>
<td>Dissociation</td>
<td>8.61 (9.18)</td>
<td>8.97 (9.33)</td>
<td>7.39 (8.09)</td>
<td>9.18 (9.76)</td>
<td>9.89 (9.92)</td>
<td>2.36</td>
<td>0.07+</td>
</tr>
<tr>
<td>Traumatic Events</td>
<td>2.30 (2.01)</td>
<td>2.68 (2.19)</td>
<td>2.27 (1.97)</td>
<td>2.08 (1.87)</td>
<td>2.28 (2.11)</td>
<td>3.11</td>
<td>0.03*</td>
</tr>
<tr>
<td>Discrimination Frequency</td>
<td>3.90 (3.99)</td>
<td>4.80 (4.15)</td>
<td>3.44 (4.02)</td>
<td>3.63 (3.66)</td>
<td>4.28 (4.30)</td>
<td>4.71</td>
<td>0.003*</td>
</tr>
<tr>
<td>Suicidal Ideation</td>
<td>0.43 (1.99)</td>
<td>0.62 (2.57)</td>
<td>0.39 (2.11)</td>
<td>0.36 (1.63)</td>
<td>0.28 (0.86)</td>
<td>0.79</td>
<td>0.50</td>
</tr>
<tr>
<td>Suicide Attempts</td>
<td>0.02 (0.16)</td>
<td>0.01 (0.11)</td>
<td>0.01 (0.11)</td>
<td>0.01 (0.13)</td>
<td>0.08 (0.37)</td>
<td>4.69</td>
<td>0.003*</td>
</tr>
</tbody>
</table>

Note. * p < 0.05; + p < .10
Figure 6

Mediation effect of frequency of racial/ethnic discrimination on suicide attempts through stress sensitivity, depressive symptoms, and suicidal ideation.

Note. * p < 0.05; b = Unstandardized regression coefficient
Figure 7
Mediation effect of frequency of racial/ethnic discrimination on suicide attempts through dissociative symptoms, depressive symptoms, and suicidal ideation.

Note. * p < 0.05; b = Unstandardized regression coefficient
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