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Suicidal Ideation among Racial/Ethnic Minorities: Moderating Effects of Rumination and Depressive Symptoms

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Abstract

Among emerging adults and college students, racial and ethnic minorities experience greater risk for suicidal ideation and behavior than their White counterparts. Research has identified numerous cognitive risk factors for suicidal ideation. However, they have not been well studied among racial and ethnic minorities. The present study examined the association between these factors (brooding rumination, reflective rumination, hopelessness, and depressive symptoms) and suicidal ideation, among 690 Black, Latino, and biracial college students. Among all groups, hopelessness was positively associated with suicidal ideation. Brooding was negatively associated with suicidal ideation, after adjusting for reflection and hopelessness, although only at low levels of depressive symptoms. Black race/ethnicity and Latino race/ethnicity, compared with biracial race/ethnicity, each separately interacted with reflection to predict lower levels of suicidal ideation at moderate to high levels of reflection. Furthermore, Latino race/ethnicity, compared with biracial race/ethnicity, interacted with both reflection and depressive symptoms, such that reflection was negatively associated with suicidal ideation among Latino individuals reporting depressive symptoms above the 39th percentile. Biracial race/ethnicity, compared with monoracial race/ethnicity, also interacted with reflection and depressive symptoms, with reflection associated with greater amounts of suicidal ideation at depressive symptom levels above the 39th percentile. Our findings suggest reflective rumination differentially affects racial and ethnic groups and should be considered in conjunction with depressive symptoms among Latino and biracial individuals in suicide risk assessment and treatment.

Keywords

race; ethnicity; rumination; depression; suicidal ideation

Emerging adulthood, a period between the ages of 18 and 25 (Arnett, 2000), is a time of particular risk for major depression and suicidal behavior (Kessler, Berglund, Borges, Nock, & Wang, 2005; Riolo, Nguyen, Greden, & King, 2005; Somervell, Leaf, Weissman, Blazer, & Bruce, 1989). Despite a lower overall risk of depression and suicide among racial and ethnic minority (REM) individuals versus White individuals (Centers for Disease Control and Prevention, 2011; Kessler et al., 2003), emerging adulthood is a heightened risk period for these outcomes among REM versus White individuals (Alegría et al., 2007; Kim & Choi, 2010; & Williams et al., 2007). In 2010, between 24% and 32% of suicides among Asian, Black, and Hispanic individuals were in young adults aged 18 to 29, compared to 15% of suicides among similarly aged White individuals (Centers for Disease Control and Prevention, 2010). Among adolescents, Hispanic individuals have the second highest rate of suicide attempts, surpassed only by American Indian/Alaska Native (AI/AN) individuals (Goldston et al., 2008), and suicide increased 160% between 1981 and 1995 among African American youth (Centers for Disease Control and Prevention, 2006b), and more than doubled among African American male adolescents from 1991 to 2001 (Joe & Marcus, 2003). Suicidal ideation has also been reported to be more prevalent among individuals of more than one race/ethnicity than among Hispanic peers (Olvera, 2001). Additional research suggests multiracial adolescents report greater suicidal ideation, planning, and attempts, than both Black and White counterparts (Wong, Sugimoto-Matsuda, Chang, & Hishinuma, 2012).

Despite emerging adulthood being a high-risk period for REMs, suicide research in this population is limited. Addressing this gap and developing culturally relevant interventions requires greater study of disparities in cognitive vulnerabilities for depression and suicidality (i.e., suicidal ideation and behavior) among REM emerging adults. Previous research suggests a number of cognitive correlates of depression and suicidality, including rumination and hopelessness (Cukrowicz, Wingate, Driscoll, & Joiner, 2004; Smith, Alloy, & Abramson, 2006). Yet research examining disparities in these risk factors in REMs is limited. Emerging findings suggest that REM individuals experience greater rumination than White counterparts (Chang, Tsai, & Sanna, 2010). Rumination, a maladaptive, passive focus on negative mood (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), has been found to mediate the relation between perceived discrimination and depressive symptoms among REM college students (Borders & Liang, 2011; Miranda, Polanco-Roman, Tsypes, & Valderrama, 2013). Hopelessness, one of the strongest cognitive factors associated with suicidality (Abramson et al., 1998; Brown, Beck, Steer, & Grisham, 2000; Joiner & Rudd, 1996), has been identified as a greater risk factor for suicidal ideation among REM than among White individuals (Lamis & Lester, 2012). Taking this as rudimentary evidence of the divergent effects of cognitive biases on depression and suicidality among different racial and ethnic groups, the present study investigated the relationship between rumination, depressive symptoms, and hopelessness as risk factors for suicidal ideation among three REM groups: Black, Latino, and biracial college students.

Theories of Race/Ethnicity

Several theoretical frameworks seek to elucidate the effects of race and ethnicity on psychological outcomes. One such theory, termed the Minority Stress Model, suggests stress specific to minority status arises from stigmatization and discrimination (Meyer, 1995). Expanding on this theory, the Cultural Model of Suicide posits that race and ethnicity affect how stressors and their cultural meanings influence suicidality, and that minority stress influences the types of stressors that exacerbate suicide risk (Chu, Goldblum, Floyd, & Bongar, 2010). Consistent with this theory, previous research suggests that acculturative stress (Gomez, Miranda, & Polanco, 2011; Hovey & King, 1996; Joiner & Walker, 2002; Polanco-Roman & Miranda, 2013) and perceived discrimination (Gomez et al., 2011; Cheng, et al., 2010) increase risk for suicidality.

Biracial individuals, an infrequently studied REM group in suicide research, are unique in having more than one race and ethnicity (Shih & Sanchez, 2005). Scholars have proposed that these individuals experience elevated levels of racial discrimination and rejection, as they are subject to discrimination from both minority and non-minority groups (Poston, 1990; Root, 1996). Theory and research with biracial individuals has focused on ethnic identity and its development. One theory suggests that during biracial ethnic identity development, an inner conflict between internal (self) and external (outside world) definitions may occur (Nakashima, 1992). Conflict in internal representations of self, termed self-discrepancy, has been suggested to be positively linked to rumination and depressive symptoms via metacognitive beliefs about the positive and negative aspects of rumination (Roelofs et al., 2007). Such conflict has further been proposed to result in one of six identifications: with a society-assigned identity, with both racial groups, with a single racial group, with a new, "Biracial" group (Root, 1990), with a protean or situational identity (e.g., sometimes White, sometimes Black, and sometimes biracial), or with the absence of a racial identity (Rockquemore & Brunsma, 2002). Some research reports that the presence of ethnic identity corresponds to lower rates of depression, with the lowest rates corresponding to a protean identity type (Luske, Taylor, Nanney, & Austin, 2010). Additionally, increased reports of past year suicide attempts in mixed-Latino biracial (compared to "Latino-only") adolescents have been attributed to greater challenges with ethnic identity (Garcia, Skay, Sieving, Naughton, & Bearinger, 2008). These findings suggest that culturally-related stressors may increase risk for depression and suicidality in biracial individuals, beyond that of monoracial minority individuals.

Race/Ethnicity and Depression

Prior research has confirmed racial and ethnic disparities in experiences of depression, though findings are contradictory. Although some studies report lower risk for depression among REMs (Kessler et al, 2003; Zhang & Snowden, 1999), others report greater rates in REMs than in White individuals (Somervell et al., 1989; Plant & Sachs-Ericsson, 2004). Additional research suggests that REM individuals experience depressive symptoms more severely than White individuals (Williams et al., 2007). Furthermore, a study of adolescents with low levels of depressive symptoms revealed that suicide risk was greater for African American than White adolescents (Greening & Stoppelbein, 2002).

Rates of depression have not been studied as extensively in biracial as in monoracial individuals. However, one study reported that biracial (African American/Latino) adolescents exhibited greater levels of interpersonal and somatic depressive symptoms than their African American, Latino, and European American counterparts (Ramos, Jaccard, & Guilamo-Ramos, 2003).

Race/Ethnicity, Hopelessness, and Suicide

Hopelessness, or believing future outcomes will be negative rather than positive (Abramson, Metalsky, & Alloy, 1989), is one of the most prominent cognitive factors associated with depression (Romens, Abramson, & Alloy, 2009) and suicidality (Christensen, Batterham, Soubelet, & Mackinnon, 2013). Prior research suggests hopelessness varies between racial and ethnic groups. For example, in one study European American individuals endorsed more hopelessness than African American individuals, but the association between hopelessness and suicidal ideation was stronger among African American individuals (Lamis & Lester, 2012). In contrast, another study reported no significant difference in the degree of hopelessness between these groups, but did report that nearly lethal suicide attempts were more strongly associated with hopelessness among African American than among White individuals (Durant et al., 2006). Further research found no significant differences in hopelessness across White, African American, and Latino college students (Hirsch, Visser, Chang, & Jeglic, 2012).

Previous research has considered factors that may impact hopelessness in African American adolescents. Molock and colleagues found that individuals who reported a self-directive religious coping style (i.e., "I act to solve problems without God's help") (Molock, Puri, Matlin, & Barksdale, 2006, p. 375), reported a greater degree of hopelessness, compared to individuals who did not do so. Additional research suggested African American adolescents may find the expression of hopelessness to be negative, manipulative of others, and culturally inappropriate (Molock et al., 2007). Breland-Noble (2004) further suggested self-reliant coping among Black adolescents may be more culturally acceptable than expressing hopelessness-related cognitions.

High rates of hopelessness and suicidality have also been noted among Latina emerging adults (CDC, 2006), with hopelessness and loneliness positively predicting suicidality in undergraduate Latina students (Chesin & Jeglic, 2012). Conflict between emerging autonomy and parental cultural expectations has been suggested to be a risk factor for depression (Chang, Hirsch, Sanna, Jeglic, & Fabian, 2011) and suicidality (Zayas, Gulbas, Fedoravicius, & Cabassa, 2010; Zayas, Lester, Cabassa, & Fortuna, 2005) among Latina emerging adults. However, Latino adolescent immigrants' experience of cultural heritage has been found to be negatively related to hopelessness (Smokowski, Buchanan, & Bacallao, 2009). These findings suggest that determining culture's influence on hopelessness and suicidality in Latino individuals requires further inquiry.

Research on hopelessness in biracial individuals has been limited. One study found a significantly greater degree of hopelessness in biracial individuals of mixed White and African American ancestry than in African American individuals, but not White individuals

(Bolland et al., 2007). Further study of the potential relationship between hopelessness and suicidal ideation in biracial individuals is also required.

Race/Ethnicity, Ruminative Subtypes, and Risk for Depression and Suicidality

Rumination is defined as perseveration on negative thoughts or moods, with a particular focus on their associated causes, consequences, and circumstances (Nolen-Hoeksema, 1991). A well-documented risk factor for both depression (Nolen-Hoeksema, 2000), and suicidal ideation (Miranda & Nolen-Hoeksema, 2007), rumination has been divided into two subtypes. The first, brooding, is a passive and mood-driven comparison of one's current context with an unachieved and desired state (Trenor, Gonzalez, & Nolen-Hoeksema, 2003). The second, reflection, is a more purpose-driven internal pondering of one's depressed state, characterized by problem-solving exploration in order to alleviate depression (Trenor et al., 2003).

Generally thought to be more maladaptive than reflection, brooding has been associated with depressive symptoms and with passive coping (Marroquín, Fontes, Scilletta, & Miranda, 2010). Reflection has been associated with a more active coping style, but has been the subject of debate regarding whether or not it is an adaptive mechanism facilitating a review-oriented and problem-solving approach towards depression (Marroquín et al., 2010). While prior research has found it less strongly correlated with depressive symptoms than brooding, reflection has been suggested to be maladaptive when present with low levels of active coping (Marroquín et al., 2010), and associated with suicidal ideation among emerging adults with a suicide attempt history (Surrence, Miranda, Marroquín, & Chan, 2009). This suggests that when certain populations, such as those at high risk for suicidality, engage in reflection, the outcome may be deleterious.

Prior research suggests racial and ethnic differences in rumination. Chang and colleagues (2010) found greater rumination among Asian American than European American college students, but rumination was more strongly associated with depressive symptoms for European American than Asian American individuals. Race-related experiences may thus affect cognitive responses employed during distress, but it is unclear whether such patterns apply to other REM groups, or to suicidality in these groups. More recently, Miranda and colleagues (2013) found that brooding, but not reflection, mediated the relation between perceived discrimination and depressive symptoms among REM college students, but not their White counterparts. However, this study did not examine differences among REM subgroups.

The Present Study

Taken together, these findings suggest that cognitive vulnerabilities for depression and suicidality may vary by race and ethnicity, and that relations between these factors may differ between REM groups. Given biracial individuals' greater vulnerability to discrimination and to challenges in ethnic identity development (Nakashima, 1992; Root, 1990; Rockquemore & Brunson, 2002), we anticipate a corresponding increased

vulnerability to suicidality. The present study seeks to elucidate racial/ethnic differences in cognitive vulnerability to depressive symptoms and suicidal ideation, in order to inform cultural competence in prevention and interventions that reduce depression and suicidality in REM individuals.

We hypothesize that (1) biracial individuals will exhibit greater levels of brooding, reflection, hopelessness, depressive symptoms, and suicidal ideation than monoracial individuals; (2) brooding and reflection will each interact with biracial race/ethnicity such that these interactions will be associated with greater levels of suicidal ideation in biracial individuals than will interactions with other racial and ethnic groups; and (3) depressive symptoms will moderate the interactions between ruminative subtypes and biracial race/ethnicity as predictors of suicidal ideation.

Method

Participants

First- and second-year college undergraduates ($N = 690$; 73% female), aged 18-34 ($M = 19.28$, $SD = 2.44$) were recruited from an urban public university and from other colleges in the New York City metropolitan area to participate for fulfillment of a research requirement in an Introduction to Psychology course or for monetary compensation (\$25). Participants were recruited from an ongoing study of cognitive predictors of suicidality among young adults. The racial and ethnic composition of the sample was 11% biracial, 31% Black, and 57% Latino. Of participants identifying as biracial, 17% were of Black/White background, 44% were Latino/White, and 39% were Latino/Black.

Measures

Demographic Information—Participants completed a self-report form that queried their race/ethnicity, age, gender, sexual orientation, country of origin, and parents' countries of origin. For the race/ethnicity item, participants were instructed to circle one of the following from a list of options: Black (non-Hispanic) (referred to in the current study as Black), Hispanic/Latino/a (referred to in the current study as Latino), and biracial. Participants who reported being biracial were further asked to specify their dual races/ethnicities in an open-ended question.

Brooding and Reflective Rumination—Rumination was assessed via the Ruminative Responses Scale (RRS; Nolen-Hoeksema & Morrow, 1991), a 22-item self-report measure. The RRS examines an individual's tendency to respond to sad or depressed mood by thinking about the causes, meanings, and consequences of his or her mood. A factor analysis (Treyner et al., 2003) subdivided the RRS into Brooding (e.g., “Think ‘What am I doing to deserve this’”) and Reflection (e.g., “Analyze recent events to try to understand why you are depressed”) scales, each consisting of 5 items ($\alpha = .77$ and $.72$, respectively) rated by participants on a scale of 1 (almost never) to 4 (almost always). The remaining 12 items of the RRS have been found to overlap with depressive symptoms and thus were not included in the present analyses (Treyner et al., 2003; see also Burwell & Shirk, 2007). Possible

scores on each subscale range from 5 to 20. The internal consistency reliability in the present sample was .79 for brooding and .73 for reflection.

Depression—The 21-item Beck Depression Inventory (BDI-II; Beck, Brown, & Steer, 1996) was used to measure depressive symptom severity over the course of the two weeks prior to study participation. Scores range from 0 to 63. It has previously been found to have strong internal consistency reliability with college students ($\alpha = .93$). In the present sample, internal consistency reliability was .91.

Hopelessness—The Beck Hopelessness Scale (BHS; Beck & Steer, 1988) consists of 20 (11 negatively and 9 positively phrased) true/false statements that measure future expectations. Scores range from 0 to 20. The BHS is a reliable measure of hopelessness (α ranges from .82 to .93). In the present sample, internal consistency reliability was .87.

Suicidal Ideation—The 21-item Beck Scale for Suicidal Ideation (BSS; Beck & Steer, 1993) is a reliable ($\alpha = .87$) self-report questionnaire used to assess passive and active suicidal ideation, as experienced in the previous week. Each item consists of three statements with point values ranging from 0 to 2. Total scores, calculated by summing items 1-19, range from 0 to 38. In the present sample, internal consistency reliability was .90.

Procedure

After providing informed consent in compliance with the Institutional Review Board, participants completed a battery of self-report questionnaires either individually or in small groups. Questionnaires included the DIQ, RRS, BDI-II, BHS, and BSS. Participants were then evaluated with a risk assessment procedure and debriefed. Participants who reported suicidal ideation with a plan (as assessed by the BSS) were assessed by a licensed clinical psychologist or a licensed clinical social worker, and if necessary, referred for further evaluation at a student counseling center.

Statistical Analyses

An analysis of variance (ANOVA) was conducted to determine whether racial and ethnic groups (with group membership assigned based on the participant's response to the race/ethnicity item in the DIQ) differed in means on study measures. Moderated regression analyses were conducted via the PROCESS script for SPSS (Hayes, 2013). Moderation occurs when the effects of ruminative subtypes on suicidal ideation differ at various levels of reported depressive symptoms. Preliminary analyses indicated that brooding did not moderate the association between race/ethnicity, depressive symptoms, and suicidal ideation. Thus we excluded brooding as a moderator from our final analyses. Our final moderated regression model consisted of the following variables: reflection, depressive symptoms, hopelessness, brooding, and dummy variables relevant to REM group membership for Black and Latino groups (with biracial as the reference group). The following interaction terms were also entered to assess moderation: Black \times reflection, Latino \times reflection, reflection \times depressive symptoms, Black \times depressive symptoms, Latino \times depressive symptoms, Black \times reflection \times depressive symptoms, and Latino \times reflection \times depressive symptoms. To best visualize the interactions between reflection and each racial group, we conducted an

additional moderated regression analysis for biracial individuals. The variables included in this model were reflection, brooding, depressive symptoms, hopelessness, biracial race/ethnicity, and the following interactions: biracial \times reflection, biracial \times depressive symptoms, reflection \times depressive symptoms, and biracial \times reflection \times depressive symptoms. All continuous variables were centered around their means (Jacard, 2001). Age and gender did not predict ideation and were thus excluded from these analyses. Given that we conducted two regression analyses, a Bonferroni correction was used to adjust our p value required for statistical significance to .025.

Finally, all significant two- and three-way interactions were probed according to Johnson-Neyman procedures via the PROCESS script for SPSS (Hayes, 2013). The Johnson-Neyman technique identifies regions of significance of the moderator for the conditional effect of the predictor on the dependent variable. This method allows for a more accurate inspection of the moderator's effect on the predictor-outcome relation, and is superior to methods identifying arbitrary low, mean, and high values of the moderator (Hayes, 2013).

Results

Table 1 displays means and standard deviations for study variables. Black individuals in our sample were older than Latino individuals, $t(687) = 2.62, p < .05$. However, contrary to our first hypothesis, there were no statistically significant omnibus differences among REM groups on primary study variables. Table 2 displays correlations between continuous study variables within each racial/ethnic group as well as across the entire sample.

We conducted a moderated regression analysis as outlined above to examine our hypothesis that reflection would interact with biracial race/ethnicity and depressive symptoms to predict suicidal ideation. PROCESS model 3 (Hayes, 2013) was utilized to test relevant two- and three-way interactions. Reflection ($b = 0.38, p < .001$), depressive symptoms ($b = 0.11, p < .001$), reflection \times depressive symptoms ($b = 0.02, p < .025$), hopelessness ($b = 0.18, p < .001$), Latino \times reflection ($b = -0.38, p < .01$), Black \times reflection ($b = -0.33, p < .01$), and Latino \times reflection \times depressive symptoms ($b = -0.03, p < .01$) were all statistically significant predictors of suicidal ideation (see Table 3).

These results indicate that reflection moderated the association between both Latino and Black race/ethnicity, as compared to biracial race/ethnicity, and suicidal ideation, as well as the association between depressive symptoms and suicidal ideation across all racial and ethnic groups. Biracial students, compared to Black and Latino students, exhibited greater levels of suicidal ideation as their reports of reflection increased. Our results also revealed a three-way interaction among reflection, depressive symptoms, and Latino race/ethnicity. Next, we probed each significant two- and three-way interaction from this moderated regression according to the Johnson-Neyman technique outlined above. We first probed the reflection \times depressive symptoms interaction. For reflection, two regions of significance were identified at depressive symptom scores of 6.20 (28th percentile), $b = -0.15, SE = 0.08, p = .05, 95\% CI [-0.30, 0.00]$, and 14.42 (61st percentile), $b = 0.08, SE = .04, p = .05, 95\% CI [0.00, 0.16]$. Reflection was negatively associated with ideation at relatively low levels of depressive symptoms (i.e., lower than 6.20), and positively associated with ideation at mild

to severe scores of depressive symptoms (i.e., greater than 14.42). At depressive symptom scores between 6.20 and 14.42, no significant conditional effect of reflection on suicidal ideation was found.

Next we probed the Black \times Reflection and Latino \times Reflection interactions. For Black individuals, reflection transitioned from being a nonsignificant to a significant moderator at a reflection score of 10.98 (66th percentile in the present sample), $b = -0.76$, $SE = .39$, $p = .05$, 95% CI $[-1.52, 0.00]$, such that reflection scores above this threshold were associated with lower levels of ideation for Black students compared to biracial students.

For Latino students, two regions of significance were identified at reflection scores of 7.36 (25th percentile), $b = 0.90$, $SE = 0.46$, $p = .05$, 95% CI $[0.00, 1.80]$, and 11.78 (74th percentile), $b = -0.79$, $SE = .40$, $p = .05$, 95% CI $[-1.58, 0.00]$. Latino race/ethnicity, compared to biracial race/ethnicity, was positively associated with ideation at relatively low levels of reflection (i.e., lower than 7.36), and negatively associated with ideation at moderate to high scores of reflection (i.e., greater than 11.78). At average scores (between 7.36 and 11.78), no significant conditional effect of reflection on suicidal ideation was found for Latino individuals when compared to biracial individuals.

In probing the Latino \times Reflection \times Depressive symptoms interaction, the Johnson-Neyman technique revealed that the conditional effect of Latino \times Reflection on suicidal ideation transitioned in significance at a BDI-II score of 8.65 (39th percentile), $b = -0.26$, $SE = .13$, $p = .05$, 95% CI $[-0.51, 0.00]$. Latino race/ethnicity, when compared to biracial race/ethnicity, interacted with reflection to negatively predict suicidal ideation only at BDI-II scores above 8.65. Figure 1 illustrates this interaction.

To best visualize the interactions between reflection and each racial/ethnic group, we subsequently employed and probed a moderated regression with biracial race/ethnicity interacting with reflection and depressive symptoms (see Table 4). We included all non-race/ethnicity related variables from the original regression. Brooding ($b = -0.09$, $p < .025$), depressive symptoms ($b = 0.11$, $p < .001$), hopelessness ($b = 0.19$, $p < .001$), biracial \times reflection ($b = 0.37$, $p < .01$), and biracial \times reflection \times depressive symptoms ($b = 0.02$, $p < .025$) were each significantly associated with suicidal ideation.

Probing the biracial \times reflection interaction revealed two transition points at reflection scores of 6.89 (25th percentile), $b = -0.95$, $SE = .49$, $p = .05$, 95% CI $[-1.91, 0.00]$, and 11.42 (66th percentile), $b = 0.77$, $SE = .37$, $p = .05$, 95% CIs $[0.00, 1.47]$. For biracial students, reflection was negatively associated with ideation when reflection scores were low (below 6.89), whereas reflection and ideation were positively associated at scores above the 66th percentile (i.e., greater than 11.42). Figure 2 illustrates the two-way interactions of race/ethnicity and reflection. Probing the biracial \times reflection \times depressive symptoms interaction revealed a threshold of the BDI-II for Latinos, 8.04 (39th percentile), but in the opposite direction from that of biracial individuals, $b = 0.26$, $SE = .13$, $p < .05$, 95% CI $[0.00, 0.52]$. As Figure 3 illustrates, biracial race/ethnicity, compared to monoracial race/ethnicity, interacted with reflection to positively predict suicidal ideation at BDI-II scores above 8.04.

Discussion

Emerging adulthood is a high-risk period for major depression and suicidality among REM individuals (Alegría et al., 2007; Williams et al., 2007; Kim & Choi, 2010). Among REM groups, biracial individuals are unique, having multiple cultural influences. Research on potential relations between these cognitive and cultural influences is limited. For example, prior research has not explored the effects of ruminative subtypes on suicidality in Black, Latino, or biracial individuals. The current study addressed this gap.

Contrary to our hypothesis, biracial individuals did not report significantly greater brooding, reflection, hopelessness, depressive symptoms, or suicidal ideation, compared to monoracial individuals. This hypothesis was based on research that suggested biracial individuals face unique challenges, such as discrimination from majority and minority groups (Poston, 1990; Root, 1996), internal conflict in resolving a multi-faceted cultural identity (Nakashima, 1992), and a greater number of suicide attempts due to such conflict (Garcia et al., 2008). Despite these findings, other studies have suggested being biracial may not relate to greater levels of these factors. Shih and Sanchez (2005) suggested biracial individuals experience greater psychological distress than White individuals but equivalent to that of other REM groups. Coleman and Carter (2007) suggested levels of depressive symptoms and anxiety in biracial individuals vary with their personal feelings about ethnic identity. Thus, personal concepts of ethnic identity, rather than group affiliation, may affect the levels of factors, and relations between factors, examined in the current study.

Such potential relations were proposed by our second hypothesis, which predicted brooding and reflection would each interact in separate relations with biracial race/ethnicity, and that the largest levels of suicidal ideation would occur in interactions with biracial race/ethnicity versus other REM groups. Contrary to this hypothesis, brooding did not significantly interact with any REM group we surveyed, nor did depressive symptoms significantly moderate the relation between brooding and biracial race/ethnicity, as predicted by our third hypothesis. In fact, we found no significant relationship between brooding and suicidal ideation except among Biracial individuals, where brooding exerted a small effect in negatively predicting suicidal ideation. One possible explanation of these findings is that the majority of our participants reported low levels of depressive symptoms. It is possible that brooding may be adaptive at these low levels, focusing attention on negative moods to aid in resolving them. At greater, clinical levels of depressive symptoms, however, brooding could be positively associated with suicidal ideation, as a repetitive emphasis on these symptoms could offset the potential benefits of being reminded of them. While this explanation would be in accordance with prior findings (Miranda & Nolen-Hoeksema, 2007; Chan, Miranda, & Surrence, 2009), it is purely speculative.

Reflection interacted with depressive symptoms across all racial and ethnic groups in the current study, such that it was negatively associated with suicidal ideation at relatively low levels of depressive symptoms and positively associated at mild to severe levels of depressive symptoms. Furthermore, as hypothesized, biracial race/ethnicity interacted with reflection, and exerted a small effect in a positive association with suicidal ideation. Levels of suicidal ideation were larger in this interaction than in interactions between reflection and

Black or Latino race/ethnicity (see Table 4 and Figure 1). Caution is warranted in interpreting significant findings with small effect sizes, but these findings do suggest that reflection may increase suicidal ideation among individuals with multiple cultural influences. Furthermore, as hypothesized, depressive symptoms qualified the interaction between reflection and biracial race/ethnicity to predict suicidal ideation. At high levels of depressive symptoms, reflection was more positively associated with suicidal ideation in biracial (compared to monoracial) individuals (See Figure 3).

Previously, reflection had been reported to be the more adaptive of the ruminative subtypes, negatively associated with depressive symptoms over time (Treyner et al., 2003). Further research found that reflection is not always beneficial (Marroquín et al., 2010; Surrence et al., 2009). Our findings suggest that reflection may be associated with greater suicidal ideation in biracial individuals who have high levels of depressive symptoms. Perhaps biracial individuals experience greater levels of self-discrepancy or internal conflict, and consequently, as suggested by the findings of Marroquín et al. (2010), experience diminished active coping and higher levels of depressive symptoms, thus increasing their vulnerability to suicidal ideation.

Another explanation for these findings is that reflection in biracial individuals may emphasize negative cognitions and emotions related to perceived discrimination. The Minority Stress Model suggests minority individuals experience discrimination-related stress (Meyer, 1995). Recent research suggests a relationship between perceived discrimination and rumination (Miranda et al., 2013). While all REM individuals are potentially subject to discrimination by majority groups, biracial individuals are additionally subject to discrimination by minority groups from which they derive a heritage (Poston, 1990; Salahuddin & O'Brien, 2011; Good, Sanchez, & Chavez, 2013).

In an interaction between reflection and Black race/ethnicity, reflection was positively associated with suicidal ideation, and this association exerted a small effect (see Table 3). However, levels of suicidal ideation were lower in this interaction than in the interaction between reflection and biracial race/ethnicity, at moderate to high levels of reflection (see Figure 1). Furthermore, a three-way interaction between Black race/ethnicity, reflection, and depressive symptoms did not significantly predict suicidal ideation. Prior studies with Black and African American individuals suggest a stronger association between hopelessness and suicidality than other risk factors such as depressive symptoms (Lamis & Lester, 2012; Durant et al., 2006), and our results may also reflect such trends.

Latino race/ethnicity also interacted with reflection (See table 3). However, in contrast to findings with biracial individuals, reflection was negatively associated with suicidal ideation among Latino individuals, and this association yielded a small effect (see Figure 1). An additional three-way interaction revealed that among Latino individuals with high levels of depressive symptoms, reflection negatively corresponded to suicidal ideation, once again yielding a small effect (see Figure 2). Although care must be taken in interpreting this small effect, one possible explanation for this finding is that among Latino individuals with high levels of depressive symptoms, reflection may diminish suicidal ideation. Unlike in biracial individuals where reflection may highlight cultural conflict and increase negative

psychosocial outcomes, strongly held ethnic identity in Latino individuals has been suggested by prior research to correspond to better outcomes related to depressive symptoms and acculturative stress (Iturbide, Raffaelli, & Carlo, 2009), and to buffer against the effects of acculturative stress and perceived discrimination on factors such as hopelessness, depression, and suicidal ideation (Polanco-Roman & Miranda, 2013). Perhaps among Latino individuals, reflecting on a sense of ethnic identity may protect against negative psychosocial outcomes. Such a possibility is speculative and was not addressed in the current study.

Strengths, Limitations, and Future Directions

Our study is the first of which we know to examine the effects of ruminative subtypes on suicidal ideation comparatively between Black, Latino, and biracial individuals. Our results suggest that racial, ethnic, and cultural variation may explain divergence in past studies about whether reflection is or is not adaptive (Burwell & Shirk, 2007; Marroquín et al., 2010; Miranda & Nolen-Hoeksema, 2007; Surrence et al., 2009).

However, we must also note our study's limitations. First, while our hypotheses were based in part on theory regarding ethnic identity, perceived discrimination, and self-discrepancy, we did not discretely measure the effects of such factors on ruminative subtypes, hopelessness, depressive symptoms, and suicidal ideation. Further research is required to determine whether these variables or relations between variables may explain our findings. Moreover, the current study does not explore other aspects of the specific sociocultural worlds inhabited by Black, Latino, and biracial students beyond their experiences as minority groups who often face a range of discriminatory experiences. Second, although our sample included biracial individuals, an understudied population, they were disproportionately fewer in number than Black or Latino individuals. However, biracial individuals comprise only 3% of the United States population (Humes, Jones, & Ramirez, 2011), thus creating a difficulty in studying them. Furthermore, it is still unclear whether certain racial, ethnic, and cultural combinations among biracial individuals are more prone than others to maladaptive outcomes. In addition, our findings may not generalize to REM groups not included in our sample (e.g., Asian/Pacific Islander, Native American individuals). Third, our results may apply only to diverse urban areas similar to where our data were collected, as discrimination versus acceptance of biracial individuals, and REM groups in general, varies between communities. Fourth, as our study was cross-sectional, our findings may pertain only to concurrent associations between ruminative response types, depressive symptoms, and suicidality, and cannot be used to predict future trends. Moreover, our data were collected via self-report, and as such may be subject to demand characteristics. Finally, as our sample was a college-student sample, our results may not generalize to clinical populations.

Future research should expand upon our findings in several ways. Foremost among these should be to discretely measure the effects of ethnic identity, perceived discrimination, and self-discrepancy on brooding, reflection, depressive symptoms, and suicidal ideation. Future inquiry should also examine factors and relations similar to those of the current study among minorities that were not the focus of the current study. These include Asian/Pacific Islander

and Native American individuals, as well as biracial individuals with heritage from these groups; first and second generation immigrants in REM groups; and Lesbian, Gay, Bisexual, and Transgender REM individuals. Finally, future studies should examine whether there are differences in psychosocial outcomes among individuals of different biracial heritages, such as between Black/White versus Black/Latino individuals.

Conclusions

Awareness of racial/ethnic influences on the relation between cognition, depressive symptoms, and suicidal ideation, may better inform suicide prevention with Black, Latino, and biracial individuals. Reflection at high levels of depressive symptoms may increase suicidal ideation among biracial individuals but exert a protective effect among Latino individuals. Among Black individuals, however, suicidal ideation seems to slightly rise as reflection increases, regardless of depressive symptoms. Taken together, these findings highlight the benefit of considering ethnic-specific influences on ruminative subtypes in suicide prevention efforts.

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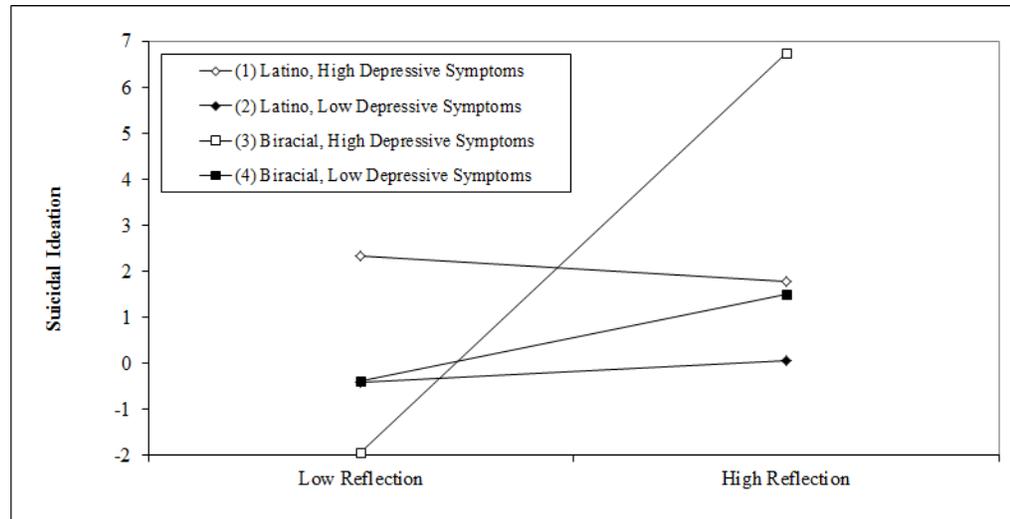


Figure 1.

Three-way interaction of Latino (vs. biracial), reflection, and depressive symptoms. Low reflection and depressive symptoms are plotted at levels one standard deviation below the mean, and high reflection and depressive symptoms are plotted at one standard deviation above the mean. Although represented in this figure, slopes representing low depressive symptoms (2 and 4) were not significant as identified by the Johnson-Neyman technique.

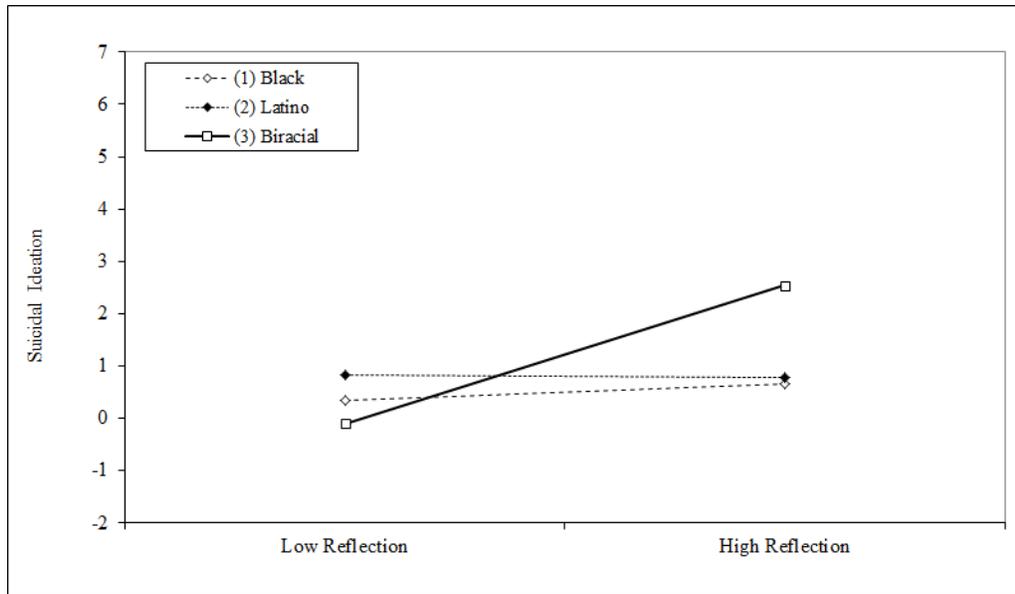


Figure 2. Interactions of racial and ethnic group status and reflection. Low reflection is plotted at one standard deviation below the mean. High reflection is plotted at one standard deviation above the mean.

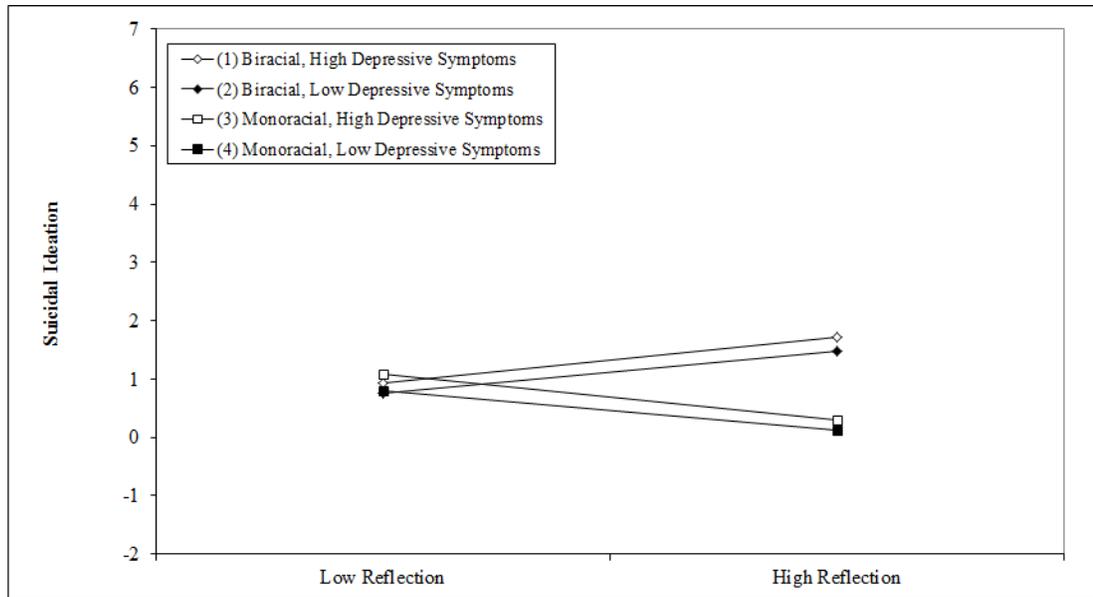


Figure 3.

Three-way interaction of biracial (vs. monoracial), reflection, and depressive symptoms. Low reflection and depressive symptoms are plotted at levels one standard deviation below the mean, and high reflection and depressive symptoms are plotted at one standard deviation above the mean. Although represented in this figure, slopes representing low depressive symptoms (2 and 4) were not significant as identified by the Johnson-Neyman technique.

Table 1
Means and Standard Deviations of Study Variables Across Racial/Ethnic Groups

Variable	Entire Sample (N = 690)		Black (N = 216)		Latino (N = 395)		Biracial (N = 79)	
	N	%	N	%	N	%	N	%
Nativity								
U.S. Born	537	78%	151	70%	315	80%	71	90%
Non-U.S. Born	153	22%	65	30%	80	20%	8	10%
Gender								
Male	183	27%	52	24%	111	28%	21	27%
Female	505	73%	163	76%	284	72%	58	73%
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	19.28	2.44	19.58	2.71	19.05	2.18	19.66	2.75
BDI-II	12.95	9.45	11.90	8.47	13.34	9.63	13.87	10.86
BHS	3.94	4.01	3.60	3.77	4.02	4.10	4.53	4.21
Brooding	11.28	3.62	11.22	3.61	11.24	3.55	11.63	4.03
Reflection	10.32	3.48	10.26	3.47	10.39	3.57	10.10	3.02
BSS	0.89	3.11	0.59	2.63	0.94	3.06	1.44	4.29

Note. BDI-II = Beck Depressive Inventory; BHS = Beck Hopelessness Scale; BSS = Beck Scale for Suicidal Ideation.

Table 2
Summary Correlations of Study Variables Across Racial/Ethnic Groups

	Entire Sample (N = 690)					Black (N = 216)					Latino (N = 395)					Biracial (N = 79)				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
BDI-II (1)	–	.60**	.57**	.27**	.44**	–	.59**	.62**	.31**	.41**	–	.61**	.54**	.26**	.46**	–	.61**	.57**	.24*	.41**
BHS (2)		–	.40**	.13**	.41**		–	.45**	.14*	.41**		–	.37**	.13*	.40**		–	.42**	.16	.42**
Brooding (3)			–	.39**	.20**			–	.38**	.29**			–	.40**	.22**			–	.37**	.11
Reflection (4)				–	.13**				–	.14*				–	.07				–	.35**
BSS (5)					–					–					–					–

Note. BDI-II = Beck Depressive Inventory; BHS = Beck Hopelessness Scale; BSS = Beck Scale for Suicidal Ideation.

* $p < .05$,

** $p < .01$

Table 3
Summary of Linear Regression for Reflection Predicting Suicidal Ideation

Predictor	<i>b</i>	<i>S.E.</i>	<i>B</i>	Partial <i>r</i>
BDI-II ***	0.11	0.03	0.32	0.13
BHS ***	0.18	0.03	0.24	0.22
Brooding	-0.08	0.04	-0.10	-0.09
Reflection ***	0.38	0.11	0.42	0.13
Black	-0.55	0.37	-0.08	-0.06
Latino	-0.23	0.35	-0.04	-0.03
Black × Reflection **	-0.33	0.12	-0.21	-0.10
Latino × Reflection **	-0.38	0.12	-0.33	-0.13
Black × BDI-II	-0.02	0.04	-0.03	-0.02
Latino × BDI-II	0.01	0.03	0.03	0.02
Reflection × BDI-II *	0.02	0.01	0.25	0.09
Black × Reflection × BDI-II	-0.01	0.01	-0.06	-0.04
Latino × Reflection × BDI-II **	-0.03	0.01	-0.27	-0.11

Note. BDI-II = Beck Depressive Inventory; BHS = Beck Hopelessness Scale; BSS = Beck Scale for Suicidal Ideation.

*
 $p < .025$,

**
 $p < .01$,

 $p < .001$

Adjusted $R^2 = .25^{***}$

$f^2 = .33$

b = Unstandardized regression coefficient

β = Standardized regression coefficient

Table 4
Summary of Linear Regression for Biracial Race/Ethnicity × Reflection Predicting Suicidal Ideation

Predictor	<i>b</i>	<i>S.E.</i>	<i>B</i>	Partial <i>r</i>
BDI-II ***	0.11	0.02	0.34	0.26
BHS ***	0.19	0.03	0.24	0.22
Brooding *	-0.09	0.04	-0.11	-0.10
Reflection	0.01	0.03	0.01	0.01
Biracial	0.32	0.34	0.03	-0.04
Reflection × BDI-II	-0.00	0.00	-0.02	-0.02
Biracial × BDI-II	-0.01	0.03	-0.01	-0.01
Biracial × Reflection **	0.37	0.11	0.12	0.13
Biracial × Reflection × BDI-II *	0.02	0.01	0.09	0.09

Note. BDI-II = Beck Depressive Inventory; BHS = Beck Hopelessness Scale; BSS = Beck Scale for Suicidal Ideation.

*
 $p < .025$,

**
 $p < .01$,

 $p < .001$

Adjusted $R^2 = .25^{***}$

$f^2 = .33$

b = Unstandardized regression coefficient

β = Standardized regression coefficient