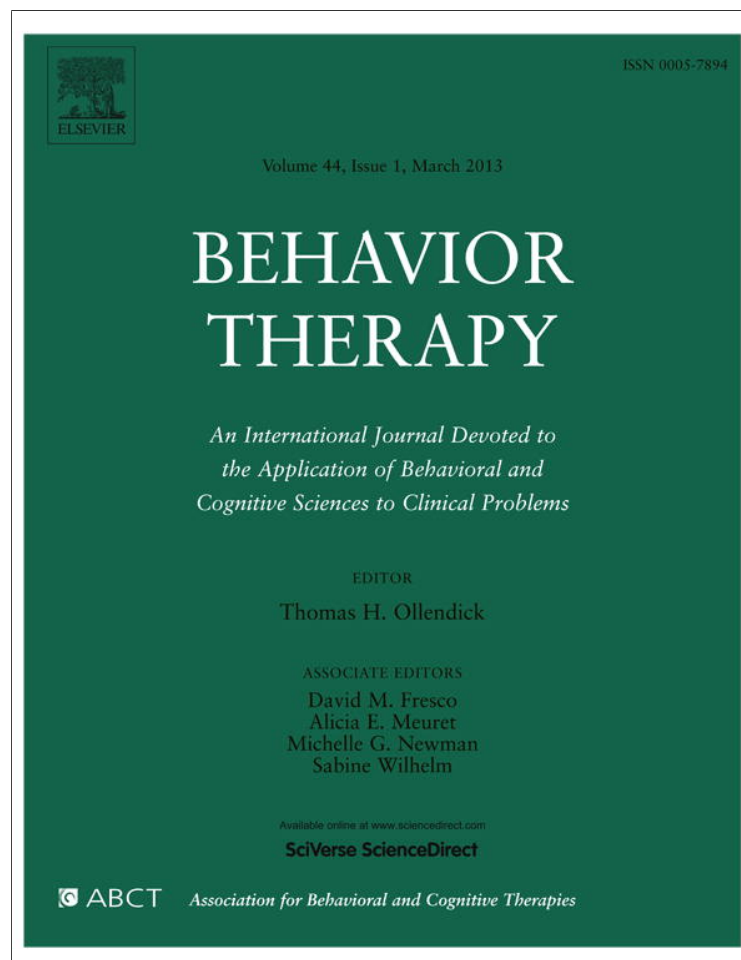


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Culturally Related Stress, Hopelessness, and Vulnerability to Depressive Symptoms and Suicidal Ideation in Emerging Adulthood

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Culturally related experiences are seldom considered in assessing risk for suicidal behavior among emerging adults, despite racial/ethnic differences in suicide attempts. The present study examined the impact of culturally related stressors on hopelessness, symptoms of depression, and suicidal ideation—well-known predictors of suicidal behavior—among emerging adults over time, and whether hopelessness would mediate the relation between culturally related stressors and both depression and ideation. An ethnically diverse sample of 143 emerging adults, ages 18 to 25, completed self-report measures of acculturative stress, perceived discrimination, and depressive symptoms at 1 time point, and self-report measures of ethnic identity, hopelessness, depressive symptoms, and suicidal ideation 2 to 3 years later. Higher baseline acculturative stress and perceived discrimination predicted hopelessness, but not symptoms of depression, when entered simultaneously into a regression analysis. However, there was an indirect relation between these culturally related stressors and depressive

symptoms through hopelessness. There was also a direct relation between acculturative stress at baseline and suicidal ideation at follow-up, and hopelessness mediated this relation. However, the indirect relations between culturally related stressors and depression and suicidal ideation through hopelessness were only present at low levels of ethnic identity, but not at average or high levels of ethnic identity. Acculturative stress and perceived discrimination may thus increase vulnerability to depression and suicidal ideation to the extent that they increase hopelessness, but a strong ethnic identity may buffer against this relation. This study highlights the need for incorporating culturally related experiences in assessing risk for suicidal ideation and behavior, particularly among emerging adults from diverse backgrounds.

Keywords: acculturative stress; discrimination; hopelessness; depression; suicidal ideation

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EMERGING ADULTHOOD, or the period of life between ages 18 and 25 (see Arnett, 2000), is a time of increased vulnerability to a number of mental health problems, including symptoms of depression (Kessler et al., 2003) and suicidal behavior (Kessler, Berglund, Borges, Nock, & Wang, 2005). Among racial and ethnic minorities, emerging adulthood is a time of particularly high risk for symptoms of depression and suicidal behavior, compared to later adulthood. For instance, the 12-month prevalence of major depression is higher among 18- to 29-year-old Asian, Black, and Latino individuals than among their older counterparts (Alegría et al., 2007; Kim & Choi, 2010; Williams et al., 2007). Between 38-47% of suicides that occur among Asian, Black, and Latino individuals

(versus 24% of suicides among White individuals) happen between the ages of 15 and 34 (Centers for Disease Control and Prevention, 2011). Cognitive models have identified a number of risk factors for suicidal behavior (Ellis, 2006), with hopelessness being one of the strongest predictors of suicidal behavior (Abramson et al., 1998; Joiner & Rudd, 1996). However, very little research has examined whether culturally related experiences affect these cognitive factors, and no research of which we are aware has examined whether cognitive factors such as hopelessness may explain the association between culturally related stressors and suicidal ideation and attempts.

Research has highlighted the importance of examining the cultural context of suicidal behavior and suggests that culturally related stressors, such as acculturative stress (Gomez, Miranda, & Polanco, 2011; Hovey & King, 1996; Hwang & Ting, 2008; Joiner & Walker, 2002), and perceived discrimination (Cheng et al., 2010; Gomez et al., 2011; Hwang & Goto, 2008) may increase vulnerability to suicidal thoughts and behavior. Within-group differences in depression and suicidal behavior have been reported among Latino (Fortuna, Perez, Canino, Sribney, & Alegria, 2007), Asian American (e.g., Duldulao, Takeuchi, & Hong, 2009), and Black individuals (Joe, Baser, Neighbors, Caldwell, & Jackson, 2009), with less acculturated or early-generation individuals at lower risk than more acculturated individuals. At the same time, there is evidence that ethnic identity buffers against the negative effects of culturally related stressors (Iturbide, Raffaelli, & Carlo, 2009; Greene, Way, & Pahl, 2006; Torres & Ong, 2010). Taken together, these findings allude to the cultural nuances associated with risk for suicidal behavior. The present study sought to examine the association between culturally related experiences (i.e., acculturative stress, perceived discrimination, and ethnic identity) and hopelessness, depressive symptoms, and suicidal ideation over time among emerging adults, given that hopelessness, depression, and suicidal ideation are well-known predictors of suicidal behavior (Abramson et al., 1998; Brown, Beck, Steer, & Grisham, 2000; Joiner & Rudd, 1996).

CULTURALLY RELATED STRESS AS A RISK FACTOR FOR DEPRESSION AND SUICIDAL IDEATION

Experiences of racial and ethnic discrimination are akin to culturally specific negative life events in that they are stressful events that occur based on an individual's ethnic group or racial affiliation (Landrine & Klonoff, 1996). Perceived discrimination has been linked to poor mental health outcomes across different racial/ethnic minority groups (Gee, Spencer, Chen, Yip, & Takeuchi, 2007; Greene et al., 2006; Kessler, Mickelson, & Williams, 1999; Sellers &

Shelton, 2003), and also to increases in suicidal ideation and attempts (Cheng et al., 2010; Gomez et al., 2011; Hwang & Goto, 2008). For instance, a study with ethnically diverse 18- to 29-year-olds found that perceived discrimination statistically predicted endorsement of a lifetime suicide attempt history (Gomez et al.). Moreover, previous studies have found that emerging adults are more likely to experience perceived discrimination than older adults (Kessler et al., 1999; Pérez, Fortuna, & Alegria, 2008). Perceived discrimination may thus increase vulnerability to suicidal behavior among emerging adults from diverse backgrounds.

Acculturative stress, or stress in response to acculturation, is another commonly studied culturally relevant stressor. Berry (1991) suggests that acculturation—or the way in which individuals adapt to interacting with a new culture—engenders cultural change through a novel set of experiences, such as racial/ethnic discrimination, acculturative stress, and development of an ethnic identity (Berry). Acculturative stress may arise in a variety of circumstances, such as when individuals are socially marginalized, experience negative attitudes toward their culture of origin, feel pressured to assimilate, or when conflicts arise between individuals' expectations versus those of their family (Mena, Padilla, & Maldonado, 1987). Moreover, individuals who are ill equipped to confront such new challenges may develop maladaptive coping responses, which, in turn, may increase vulnerability to negative mental health outcomes, such as depression and suicidal ideation. Acculturative stress has been found to be associated with depression independently of general life stress (Hwang & Ting, 2008; Joiner & Walker, 2002). It has also been linked to symptoms of depression and suicidal ideation across different racial/ethnic minority groups, including Asian Americans (Hwang & Ting), African Americans (Joiner & Walker), and Latinos (Hovey & King, 1996). Although typically examined among immigrants, acculturative stress is also relevant to nonimmigrants, as researchers have explored its impact on African American and European American college students (Joiner & Walker; Walker, Wingate, Obasi, & Joiner, 2008). Considering that ethnic identity becomes more salient among White American youth when they are in racially/ethnically heterogeneous environments (i.e., environments with a mix of races/ethnicities versus environments in which individuals are primarily of European-American background; Phinney, Cantu, & Kurtz, 1997), acculturative stress may arise among U.S.-born Black and U.S.-born White emerging adults in a comparable setting, such as a college campus in which they are exposed to individuals from various cultural backgrounds.

Acculturative stress may create additional vulnerabilities to depression and suicidal behavior among emerging adults (Gomez et al., 2011; Hovey & King, 1996; Iturbide et al., 2009; Walker et al., 2008). Walker and colleagues found that college students with depressive symptoms who reported experiencing higher acculturative stress reported more concurrent thoughts about suicide than students with depressive symptoms who reported less acculturative stress. Another study found that acculturative stress, specifically with regard to family relationships, was statistically associated with endorsement of a suicide attempt history, such that the odds of having made an attempt increased with higher acculturative stress (Gomez et al., 2011). A closer look at the effects of acculturative stress may provide additional insight into how it may impact risk for suicidal thoughts and behavior among emerging adults.

CULTURALLY RELATED STRESS, HOPELESSNESS, AND RISK FOR SUICIDAL IDEATION

Little research has examined the association between culturally related stress and hopelessness. Hopelessness is thought to arise when individuals believe that they will inevitably experience negative outcomes and that they will inevitably fail to experience positive future outcomes (Abramson et al., 1989). It is associated with risk for suicidal ideation and attempts (Abramson et al., 1998; Joiner & Rudd, 1996), along with completed suicide (Brown et al., 2000). Furthermore, there may be racial/ethnic variability in the relation between hopelessness and suicide risk. One study found that the association between hopelessness and a nearly lethal suicide attempt was stronger among Black emerging adults than among White emerging adults (Durant et al., 2006). Hovey (2000) reported that acculturative stress was the strongest predictor of depressive symptoms in Mexican immigrants, and while hopelessness was the strongest predictor of suicidal ideation, acculturative stress also emerged as an independent predictor. Later research found that Mexican immigrant women with suicidal ideation reported higher acculturative stress and higher hopelessness, compared to women with no suicidal ideation (Hovey & Magaña, 2003), but the study did not directly examine the relation between acculturative stress and hopelessness. Perhaps culturally related stressors increase vulnerability to depression and suicidal ideation through increases in hopelessness. This idea is compatible with contemporary psychological models of suicide, such as Joiner's (2005) interpersonal-psychological theory, which suggests that hopelessness may arise from a thwarted need to belong, and such hopelessness may increase suicidal desire (Joiner, Brown, & Wingate, 2005). Negative social interactions that result in culturally

related stress may decrease individuals' sense of belonging, thereby increasing hopelessness and risk for suicidal behavior.

ETHNIC IDENTITY AS A POTENTIAL BUFFER

Ethnic identity is the meaning an individual ascribes to identifying with his or her ethnic group (Phinney, 1992). Phinney and Ong (2007) suggest that exploring this meaning and accompanying feelings of belonging represent the development of an ethnic identity, which is typically initiated during early adolescence and increases over time (see Quintana, 2007). This explorative process may persist through emerging adulthood (Arnett, 2000). Previous research has linked higher ethnic identity concurrently with lower symptoms of depression, thoughts of suicide, and a suicide attempt history (Cheng et al., 2010; Mossakowski, 2003). Hence, there may be protective properties attributable to identifying with a racial/ethnic group. Cross (1995) proposed that the development of an ethnic identity is often triggered by encounters of racism and discrimination, and that such experiences may equip an individual with defenses to counteract the negative effects of future discriminatory events. Phinney extended this conceptual framework to describe ethnic identity development among a diverse group of adolescents that included White youth. A strong ethnic identity may thus protect emerging adults against the detrimental effects of acculturative stress and perceived discrimination.

Ethnic identity may buffer against the effects of culturally related stress on concurrent symptoms of depression and suicidal ideation (Iturbide et al., 2009; Mossakowski, 2003; Torres & Ong, 2010; Walker et al., 2008). A recent study that recorded the daily experiences of ethnic discrimination and depressive symptoms among Latinos found that individuals with higher ethnic identity reported fewer depressive symptoms after discrimination experiences than did those with lower ethnic identity (Torres & Ong). Walker and colleagues found that a higher ethnic identity weakened the concurrent association between depression and suicidal ideation among African American college students. Ethnic identity may thus protect against the harmful effects of culturally related stressors on symptoms of depression, and consequently, may decrease risk for further depression and suicidal ideation.

THE PRESENT STUDY

Previous research suggests that acculturative stress and perceived discrimination may increase vulnerability to engaging in suicidal behavior, while ethnic identity may decrease risk, and perhaps even serve as a buffer against the impact of these culturally related stressors. However, this research has largely relied on

cross-sectional data, providing limited insight into the nature of the relationship. The present study examined acculturative stress and perceived discrimination as predictors of hopelessness, depressive symptoms, and suicidal ideation at a 2- to 3-year follow-up point among a racially/ethnically diverse group of emerging adults, independently of general life stress. We hypothesized that acculturative stress and perceived discrimination would prospectively predict higher hopelessness, depressive symptoms, and suicidal ideation. We also expected that hopelessness would mediate the relation between these culturally related stressors and depression and also between these stressors and ideation, independently of depression. Lastly, we expected that ethnic identity would buffer against the impact of culturally related stressors on depressive symptoms and suicidal ideation. Specifically, we expected a weaker relation between culturally related stressors and these outcomes among individuals with a high (vs. low) ethnic identity.

Method

PARTICIPANTS

A total of 143 emerging adults (80% female), ages 18 to 25, from a diverse public college in a Northeastern metropolitan area of the United States were selected from a larger sample of 1,011 college students who completed a survey between 2007 and 2008 as part of a study of cultural and cognitive correlates of suicidal behavior (see Chan, Miranda, & Surrence, 2009; Gomez et al., 2011). Participants completed this survey in partial fulfillment of a research requirement in their introductory psychology course. Participants were recruited from two groups—one ($N=56$) from a group of 96 participants who took part in a study of cognitive predictors of suicidality (see Rajappa, Gallagher, & Miranda, *in press*, for details on distribution of suicidal ideation and attempts among the 96 individuals), which was oversampled from the larger sample of 1,011 individuals for a history of suicidal ideation or attempts. It should be noted that all 96 of these individuals were contacted for potential participation, and 56 individuals agreed to take part in the follow-up study. The second group ($N=87$) was selected from the remaining 915 individuals by first compiling a database of individuals who matched the other group by age, sex, and race/ethnicity, and randomly selecting participants from that group of individuals. This procedure yielded a total of 32 out of 143 participants who had previously reported a suicide attempt history. At baseline, the mean age of this sample was 18.6 years. The racial/ethnic composition was as follows: 34% Asian (51% non-U.S.-born), 29% White (38% non-U.S.-born), 17% Latino (38%

non-U.S.-born), 11% Black (44% non-U.S.-born), 8% other (25% non-U.S.-born). The subsample was representative of the larger overall sample in terms of race/ethnicity, but individuals who were followed up were more often female (80% vs. 67%), $\chi^2(1)=9.19$, $p<.01$, and younger at baseline ($M=18.5$ vs. 19.4), $t(589.1)=6.53$, $p<.01$, than those not followed up. See Table 1 for sample characteristics.

MATERIALS

Demographic Information

Participants reported on their age, gender, race/ethnicity, year in college, and birthplace of self and parents.

Depressive Symptoms

The Patient Health Questionnaire–9 (PHQ-9; Spitzer, Kroenke, & Williams, 1999) is a 9-item self-report measure used to screen for the presence and intensity of symptoms of major depressive disorder. Participants are instructed to report the frequency with which they experienced each symptom in the previous two weeks, ranging from 0 (*not at all*) to 3 (*nearly every day*). The PHQ-9 was administered at baseline ($\alpha=.82$) and follow-up ($\alpha=.83$), with scores ranging from 0 to 21 at baseline and 0 to 22 at follow-up. The correlation between PHQ-9 scores at baseline and follow-up was .47.

Hopelessness

The Beck Hopelessness Scale (BHS; Beck & Steer, 1988), administered at follow-up, is a 20-item self-report questionnaire that measures overall hopelessness, including expectations, loss of motivation, and feelings about the future. It includes positively (e.g., *I look forward to the future with hope and enthusiasm*) and negatively worded items (e.g., *My future seems dark to me*) with a binary response option (true/false). Scores can range from 0 to 20, and in the present sample, they ranged from 0 to 19, with an internal consistency reliability of .91.

Suicidal Ideation

Suicidal ideation was assessed at follow-up with the Beck Scale for Suicidal Ideation (BSS; Beck & Steer, 1993), a 21-item self-report questionnaire that inquires about the presence and intensity of suicidal thoughts, planning, access to means, and intent in the previous week. Items were measured on a 0- to 2-point Likert scale, with higher scores representing active (vs. passive) thoughts about attempting suicide. In the present sample, scores ranged from 0 to 24, and the scale had good internal consistency reliability ($\alpha=.98$).

Suicide Attempts

Suicide attempt history was assessed at baseline and follow-up by asking participants to respond to the question, "Have you ever, in your whole life, tried

Table 1
Sample Characteristics and Summary of Means, and Standard Deviations by Race/Ethnicity

	Total	Asian	White	Latino	Black	Other
N (%)	143 (100%)	49 (34%)	42 (29%)	24 (17%)	16 (11%)	12 (8%)
Age <i>M</i> (<i>SD</i>)	18.55 (1.19)	18.57 (1.14)	18.71 (1.50)	18.42 (0.88)	18.50 (1.27)	18.17 (.39)
Gender <i>N</i> (%)						
Male	29 (20%)	10 (20%)	14 (33%)	3 (13%)	1 (6%)	1 (8%)
Female	114 (80%)	39 (80%)	28 (67%)	21 (87%)	15 (94%)	11 (92%)
Nativity <i>N</i> (%)						
U.S.-born	83 (58%)	24 (49%)	26 (62%)	15 (63%)	9 (56%)	9 (75%)
Non-U.S.-born	60 (42%)	25 (51%)	16 (38%)	9 (37%)	7 (44%)	3 (25%)
Suicide Attempt (baseline)	32 (22%)	12 (25%)	9 (21%)	4 (17%)	2 (13%)	5 (42%)
Cultural Factors <i>M</i> (<i>SD</i>)						
Acculturat. Stress (baseline)	51.04 (16.33)	56.78 (14.95)	46.36 (17.59)	46.08 (13.64)	51.00 (15.80)	54.00 (17.05)
Perceived disc. (baseline)	29.02 (14.24)	32.11 (17.63)	23.74 (8.78)	29.92 (15.62)	28.06 (11.48)	34.33 (10.14)
Ethnic Identity (follow-up)	34.73 (7.60)	34.22 (7.42)	33.02 (8.90)	35.88 (5.77)	35.75 (6.43)	39.08 (6.78)
Symptoms <i>M</i> (<i>SD</i>)						
Negative events (follow-up)	10.72 (7.89)	10.06 (8.67)	9.31 (6.65)	12.33 (8.29)	12.31 (8.15)	13.00 (7.22)
Depression (baseline)	8.02 (4.87)	8.96 (5.14)	7.62 (5.19)	7.33 (3.85)	6.06 (4.04)	9.58 (4.87)
Depression (follow-up)	5.89 (4.50)	5.63 (4.14)	6.52 (5.09)	4.92 (3.80)	5.31 (4.18)	7.42 (5.45)
Hopelessness (follow-up)	4.36 (4.58)	4.24 (3.97)	4.62 (4.94)	3.96 (4.64)	4.00 (5.51)	5.25 (4.81)
Suicidal Ideation (follow-up)	1.20 (3.36)	1.06 (2.34)	.95 (3.24)	.71 (1.90)	1.63 (3.54)	3.00 (7.32)

to kill yourself or made a suicide attempt?” This question was derived from the young adult version of the Computerized Diagnostic Interview Schedule for Children (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). At follow-up, participants were asked to also indicate whether they had made a suicide attempt, but were also asked whether they had made an attempt in the previous 2 years (to assess suicide attempt within the follow-up period). Individuals who did not endorse a suicide attempt at baseline but who endorsed a suicide attempt at follow-up, but not within the previous 2 years, were also classified as having made an attempt within the follow-up period, provided that their follow-up period extended beyond 2 years. Agreement between endorsement of a lifetime suicide attempt at baseline and follow-up (excluding 5 participants who were classified as having made an attempt within the follow-up period) was high ($\kappa = .85$). Suicide attempt history, as reported at baseline, was included as a covariate in the present study.

Acculturative Stress

Acculturative stress was assessed at baseline using the brief version of the Social, Attitudinal, Familial, and Environmental Acculturative Stress Scale (SAFE; Mena et al., 1987). This 24-item scale inquires about stress resulting from acculturation in the context of social interactions, attitudes toward one's culture of

origin, family relationships, and environmental experiences. Participants were instructed to report the level of stress they experienced from each item on a Likert scale ranging from 1 (*not stressful*) to 5 (*extremely stressful*). The scale demonstrated high internal consistency reliability ($\alpha = .90$) in the present sample, consistent with what has previously been reported by Mena and colleagues ($\alpha = .89$), and total scores ranged from 24 to 96.

Ethnic Identity

The Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992) was administered at baseline and follow-up to measure the degree to which individuals identified with an ethnic group. Thirty participants (21%) did not complete the MEIM at baseline. Thus, only scores at follow-up were included in the analyses. The correlation between total MEIM scores at baseline and follow-up for participants who completed the measure at both time points was .62. The measure contains two subscales: Affirmation and Belonging (e.g., *I am happy that I am a member of the group I belong to*), and Exploration and Achievement (e.g., *I have a clear sense of my ethnic background and what it means to me*). Participants were asked to report the ethnic group with which they most identified and to what extent they agreed or disagreed with several statements regarding that ethnic background, from 1 (*strongly disagree*) to 4 (*strongly*

agree). Phinney demonstrated the scale's reliability, with Cronbach's alpha ranging from .69 to .86 for the two subscales across different ethnic groups. Good internal consistency reliability ($\alpha = .91$) was observed in the present sample. Total scores, or the sum of both subscales, ranged from 14 to 48, with a higher sum of scores denoting a stronger ethnic identity.

Perceived Discrimination

The Schedule of Racist Events (SRE) is an 18-item self-report questionnaire used to measure perceived discrimination among African Americans (Landrine & Klonoff, 1996), but the scale was administered at baseline with the wording slightly modified to address all racial and ethnic groups (e.g., *How many times have you been treated unfairly by teachers and professors because of your race/ethnicity?*). Individuals were questioned only about discrimination experiences within the past year and not about lifetime discrimination. Frequency of discrimination was assessed on a Likert scale ranging from 1 (*never*) to 6 (*almost all of the time*), and stress appraisal was also assessed on a Likert scale ranging from 1 (*not at all*) to 6 (*extremely*). Landrine and Klonoff (1996) reported an internal reliability of .95 for frequency of racist events and of .94 for stress appraisal. An internal consistency reliability of .91 was obtained with the present sample for stress appraisal. The total scores for stress (rather than frequency), computed by summing items 1-17, were included in the analysis and ranged from 17 to 96.

Negative Life Events

The Life Experiences Survey (LES; Sarason, Johnson, & Siegel, 1978) was administered at baseline and follow-up to assess the impact of negative life events (INE) experienced within the previous year. Participants indicated whether any of 60 possible life events had happened to them in the previous 0 to 6 or 7 to 12 months, and rated the impact of the event on a 7-point Likert scale ranging from -3 (*extremely negative*) to +3 (*extremely positive*). Total INE score was calculated by summing the negatively rated events (i.e., between -3 and -1) and taking the absolute value of that score. INE at follow-up was included in the analyses to examine whether culturally related stressors would predict suicidal ideation beyond general negative life stress, which has been found to be associated with suicidal ideation (Chan et al., 2009).¹

¹ Although negative life events were measured at both baseline and follow-up, only INE score at follow-up was included in the analyses, to adjust for the impact of the most recently experienced negative life events on symptoms of depression and suicidal ideation. In preliminary analyses that adjusted for INE score at both baseline and follow-up, INE score at baseline did not significantly contribute to explaining variability in the study outcomes. Thus, it was excluded from further analyses.

PROCEDURE

Participants completed self-report questionnaires at two time points, 2 to 3 years apart (with participants providing informed consent at each time point). A follow-up point of 2 years was originally targeted, but because some participants were more difficult to reach than others, the follow-up spanned up to about 3 years, on average ($M = 2.6$ years, $SD = 0.5$; range = 1.6 to 3.9). Research assistants with at least a bachelor's degree in psychology or a related discipline (e.g., social work) administered the questionnaires in a research lab. For the follow-up session, participants were contacted via email or phone and asked to return to the lab for another survey. Generally, individuals were contacted a minimum of two times by email (an initial contact, followed by a reminder), and for those who did not respond by e-mail, at least once by telephone.

After each session, participants were debriefed and received credit toward partial course fulfillment at baseline and monetary compensation (\$25) at follow-up. All participants were provided with a list of mental health resources. Individuals who reported a suicide attempt in the previous 2 weeks and current suicidal ideation (assessed by PHQ-9 Item 9 or the BSS) were seen by a licensed clinical psychologist or licensed clinical social worker, and if the clinician perceived a need for immediate assessment, they were escorted to see a counselor on campus. The study received full-board approval by an Institutional Review Board.

Results

Means, standard deviations, and correlations among the predictor and outcome variables examined are provided in Tables 1 and 2. There were no statistically significant omnibus race/ethnic differences in the majority of study variables, with the exception of acculturative stress, $F(4, 138) = 3.22, p < .05$, and perceived discrimination, $F(4, 138) = 2.59, p < .05$, with Asian participants reporting significantly higher levels than White participants, $t(138) = 3.13, p < .05$, and $t(138) = 2.86, p < .05$, respectively (Bonferroni correction).^{2,3} Acculturative stress at baseline was significantly and positively correlated with hopelessness, symptoms of depression, and suicidal ideation

² One participant was missing a total score for perceived discrimination. This value was estimated using multiple imputation (see Schafer, 1999).

³ We also examined whether there were differences in the study variables between participants who were born in the U.S. versus those who were not born in the U.S. and only found a statistically significant difference on acculturative stress, with non-U.S.-born individuals reporting higher levels of acculturative stress ($M = 54.25$) than U.S.-born individuals ($M = 48.72$), $t(141) = 2.02, p < .05$.

Table 2
Summary of Correlations for Variables Included in Regression Analyses

	SAFE	SRE	MEIM	INE	BHS	PHQ-9	BSS
SAFE	-	.57**	-.05	.13	.34**	.28**	.23**
SRE		-	.13	.18*	.30**	.30**	.08
MEIM			-	-.02	-.33**	-.27**	-.20*
INE				-	.28**	.41**	.24**
BHS					-	.59**	.51**
PHQ-9						-	.43**
BSS							-

Note. SAFE=Social, Attitudinal, Familial, and Environmental Acculturative stress scale (baseline); SRE=Schedule of Racist Events scale (baseline); MEIM=Multigroup Ethnic Identity Measure (follow-up); INE=Impact of Negative Life Events (follow-up); PHQ-9=Patient Health Questionnaire-9 (follow-up); BHS=Beck Hopelessness Scale (follow-up); BSS=Beck Scale for Suicidal Ideation (follow-up).

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

at follow-up, while perceived discrimination at baseline was significantly and positively correlated with hopelessness and depressive symptoms at follow-up but not with suicidal ideation at follow-up ($p = .36$). Ethnic identity at follow-up was significantly and negatively correlated with hopelessness, depressive symptoms, and suicidal ideation at follow-up. Hopelessness and depressive symptoms at follow-up were significantly and positively correlated with suicidal ideation. Baseline acculturative stress and perceived discrimination were not significantly correlated with ethnic identity at follow-up ($p = .54$ and $.11$, respectively).

CULTURALLY RELATED PREDICTORS OF HOPELESSNESS

We examined whether baseline acculturative stress and perceived discrimination would be associated with higher hopelessness at follow-up, and whether ethnic identity would moderate these relations, via a hierarchical linear regression analysis. To reduce multicollinearity and to account for the absence of a meaningful zero point for acculturative stress, perceived discrimination, and ethnic identity scales, total scores were centered around their means prior to computing interactions (Jacard, 2001). Age, gender, race/ethnicity, and nativity (i.e., whether individuals were born in the U.S.) were excluded from analyses because they did not significantly predict hopelessness, nor any of the other outcomes.

Culturally related stress (baseline acculturative stress and baseline perceived discrimination) and ethnic identity (at follow-up) were entered as predictors of hopelessness in the first step of the analysis, adjusting for suicide attempt history (reported at baseline) and negative life events (reported at

follow-up). The interaction between ethnic identity and each culturally related stressor was entered into the next step of the analysis (see Table 3). Both acculturative stress and perceived discrimination at baseline were associated with higher hopelessness at follow-up, while ethnic identity (at follow-up) was significantly associated with lower hopelessness. However, ethnic identity did not moderate the relation between culturally related stressors and hopelessness, as the interactions between ethnic identity and each culturally-related stressor were not statistically significant.

HOPELESSNESS AS A MEDIATOR OF THE RELATION BETWEEN CULTURALLY RELATED STRESSORS, SYMPTOMS OF DEPRESSION, AND SUICIDAL IDEATION

We examined both direct and indirect relations between culturally related stress and symptoms of depression and suicidal ideation, as per the recommendations of MacKinnon and colleagues (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). According to these recommendations, indirect relations should be tested when there is a relation between a predictor and mediator and between a mediator and an outcome variable, regardless of whether there is a significant direct predictor-outcome relation (MacKinnon et al., 2002). Previous analyses (see above) established a relation between culturally related stressors (i.e., the predictors) and hopelessness (i.e., the mediator). To examine the direct relations between our predictors (baseline acculturative stress and perceived discrimination) and outcomes

Table 3
Hierarchical Linear Regressions With Baseline Acculturative Stress and Perceived Discrimination Predicting Hopelessness at Follow-up

Step		b	SE	β	p	R^2
1	Suicide attempt	1.23	0.80	0.11	.13	.28**
	SAFE (baseline)*	0.05	0.03	0.19	.03	
	SRE (baseline)*	0.06	0.03	0.18	.048	
	MEIM (follow-up)**	-0.20	0.04	-0.33	<.01	
	INE (follow-up)**	0.12	0.04	0.21	<.01	
2	Suicide attempt	1.23	0.79	0.11	.12	.30**
	SAFE (baseline)*	0.05	0.02	0.19	.03	
	SRE (baseline)*	0.06	0.03	0.18	.05	
	MEIM (follow-up)**	-0.22	0.05	-0.37	<.01	
	INE (follow-up)**	0.12	0.04	0.21	<.01	
	SAFE x MEIM	-0.002	0.003	-0.05	.54	
SRE x MEIM	-0.01	0.004	-0.14	.09		

Note. SAFE=Social, Attitudinal, Familial, and Environmental Acculturative stress scale; SRE=Schedule of Racist Events; MEIM=Multigroup Ethnic Identity Measure; INE=Impact of Negative Life Events.

* $p < .05$; ** $p < .01$. β =standardized regression coefficient.

(depressive symptoms and suicidal ideation at follow-up), and between the mediator (i.e., hopelessness) and outcomes, we conducted two sets of hierarchical linear regression analyses (one with depressive symptoms as the outcome and the other with suicidal ideation as the outcome). Predictor variables were entered in two steps. Sobel tests (Sobel, 1982) were used to calculate the significance of the indirect relations between culturally related stressors and symptom outcomes through hopelessness at different levels of ethnic identity, using the method suggested by Preacher and colleagues (Preacher, Rucker, & Hayes, 2007). This procedure enabled us to examine whether ethnic identity moderated the indirect relation between culturally related stressors and symptom outcomes through hopelessness.

In the first regression predicting symptoms of depression at follow-up (see Table 4), baseline acculturative stress and perceived discrimination were entered as predictors in the first step of the analysis, adjusting for suicide attempt history at baseline, symptoms of depression at baseline, ethnic identity at follow-up, and negative life events at follow-up. Hopelessness was added in the second step of the analysis. Neither acculturative stress nor perceived discrimination significantly predicted depressive symptoms at follow-up, adjusting for other variables in the model. However, ethnic identity and negative life events were negatively associated with depressive symptoms. Hopelessness significantly predicted symptoms of depression when entered in Step 2.

Table 4
Hierarchical Linear Regressions With Baseline Acculturative Stress and Perceived Discrimination Predicting Depressive Symptoms at Follow-up, Adjusting for Hopelessness

Step		b	SE	β	p	R^2
1	Suicide attempt	0.95	0.73	0.09	.20	.40**
	PHQ-9 (baseline)**	0.31	0.07	0.33	<.01	
	SAFE (baseline)	0.01	0.02	0.05	.54	
	SRE (baseline)	0.04	0.03	0.13	.11	
	MEIM (follow-up)**	-0.14	0.04	-0.24	<.01	
	INE (follow-up)**	0.18	0.04	0.32	<.01	
2	Suicide attempt	0.64	0.68	0.06	.35	.48**
	PHQ-9 (baseline)**	0.25	0.06	0.28	<.01	
	SAFE (baseline)	-0.003	0.02	-0.01	.90	
	SRE (baseline)	0.03	0.03	0.08	.29	
	MEIM (follow-up)+	-0.08	0.04	-0.13	.05	
	INE (follow-up)**	0.14	0.04	0.25	<.01	
	BHS (follow-up)**	0.35	0.07	0.35	<.01	

Note. SAFE=Social, Attitudinal, Familial, and Environmental Acculturative stress scale; SRE=Schedule of Racist Events; MEIM=Multigroup Ethnic Identity Measure; PHQ-9=Patient Health Questionnaire-9; INE=Impact of Negative Life Events; BHS=Beck Hopelessness Scale. + $p < .05$; * $p < .05$; ** $p < .01$. β =standardized regression coefficient.

Tests of the indirect relation between acculturative stress and depressive symptoms through hopelessness were calculated at low (1 SD below the mean), average, and high (1 SD above the mean) levels of ethnic identity, adjusting for baseline depressive symptoms, baseline suicide attempt history, baseline acculturative stress, and negative life events at follow-up. Hopelessness mediated the relation between acculturative stress and depressive symptoms at low, $Z_{Sobel} = 2.20$, $p < .05$, but not at average, $Z_{Sobel} = 1.67$, $p = .10$, or high levels of ethnic identity, $Z_{Sobel} = 0.30$, $p = .76$.

We also calculated the significance of the indirect relation between perceived discrimination and symptoms of depression through hopelessness at different levels of ethnic identity. The indirect relation between perceived discrimination and depressive symptoms through hopelessness was significant at low, $Z_{Sobel} = 2.37$, $p < .05$, but not at average, $Z_{Sobel} = 1.41$, $p = .16$, or high levels of ethnic identity, $Z_{Sobel} = -0.48$, $p = .63$.

Next, we examined the direct relation between culturally related stressors (acculturative stress, perceived discrimination) and suicidal ideation, and between hopelessness and suicidal ideation, adjusting for depressive symptoms, via a hierarchical linear regression (see Table 5). In the first step of the regression, baseline acculturative stress, baseline perceived discrimination, and ethnic identity at follow-up were entered as predictors of ideation at follow-up, adjusting for baseline suicide attempt history, baseline

Table 5
Hierarchical Linear Regressions With Baseline Acculturative Stress and Perceived Discrimination Predicting Suicidal Ideation at Follow-up, Adjusting for Hopelessness

Step		b	SE	β	p	R^2
1	Suicide attempt	0.81	0.66	0.10	.23	.11**
	PHQ-9 (baseline)	0.05	0.06	0.07	.44	
	SAFE (baseline)*	0.05	0.02	0.23	.02	
	SRE (baseline)	-0.02	0.02	-0.10	.31	
	MEIM (follow-up)	-0.07	0.04	-0.16	.06	
	INE (follow-up)*	0.09	0.04	0.21	.01	
2	Suicide attempt	0.39	0.60	0.05	.52	.28**
	PHQ-9 (baseline)	-0.05	0.06	-0.07	.40	
	SAFE (baseline)	0.03	0.02	0.15	.09	
	SRE (baseline)*	-0.05	0.02	-0.19	.04	
	MEIM (follow-up)	0.01	0.04	0.02	.81	
	INE (follow-up)	0.03	0.03	0.06	.45	
	PHQ-9 (follow-up)*	0.17	0.08	0.23	.03	
BHS (follow-up)**	0.28	0.07	0.39	<.01		

Note. SAFE=Social, Attitudinal, Familial, and Environmental Acculturative stress scale; SRE=Schedule of Racist Events; MEIM=Multigroup Ethnic Identity Measure; PHQ-9=Patient Health Questionnaire-9; INE=Impact of Negative Life Events; BHS=Beck Hopelessness Scale. * $p < .05$; ** $p < .01$. β =standardized regression coefficient.

depressive symptoms, and negative life events at follow-up. Hopelessness was added in the second step of the analysis, along with depressive symptoms at follow-up (to examine whether hopelessness would mediate the relation independently of depressive symptoms). In Step 1, acculturative stress at baseline was associated with higher suicidal ideation at follow-up, adjusting for other predictors, while neither perceived discrimination nor ethnic identity was associated with suicidal ideation. Neither acculturative stress nor ethnic identity was significantly associated with ideation in Step 2, but perceived discrimination did significantly predict ideation in this step. Both hopelessness and depressive symptoms at follow-up were associated with higher ideation at follow-up.

As in the analyses for depression, we also calculated Sobel tests of the indirect relation between acculturative stress and suicidal ideation through hopelessness at different levels of ethnic identity, adjusting for perceived discrimination (baseline), suicide attempt history (baseline), negative life events (follow-up) and depressive symptoms (both baseline and follow-up). Tests of the indirect relation between acculturative stress and suicidal ideation through hopelessness were calculated at low (1 *SD* below the mean), average, and high (1 *SD* above the mean) levels of ethnic identity. Hopelessness mediated the relation between acculturative stress and suicidal ideation at low, $Z_{Sobel}=2.08$, $p<.05$, but not at average, $Z_{Sobel}=1.55$, $p=.12$, or high levels of ethnic identity, $Z_{Sobel}=0.21$, $p=.83$.

Finally, we calculated the significance of the indirect relation between perceived discrimination and suicidal ideation through hopelessness at different levels of ethnic identity, adjusting for acculturative stress (baseline), suicide attempt history (baseline), negative life events (follow-up), and depressive symptoms (both baseline and follow-up). The indirect relation between perceived discrimination and ideation through hopelessness was statistically significant at a low, $Z_{Sobel}=1.94$, $p=.05$, but not at average, $Z_{Sobel}=0.95$, $p=.34$, or high ethnic identity, $Z_{Sobel}=-0.66$, $p=.51$.

Discussion

There is limited research examining the cultural context in which suicidal behavior occurs among emerging adults of diverse racial/ethnic backgrounds, and more specifically, on the interplay between culturally related stress and cognitive vulnerability to suicidality. In addition, much of what is known has been obtained from cross-sectional data. The present study contributes to this literature by examining the association between culturally related stressors, cognitive vulnerability, and depressive symptoms and suicidal ideation at a 2- to 3-year follow-up point

among a racially/ethnically diverse sample of emerging adults. In accordance with and as an extension of previous findings (Hovey & King, 1996; Hwang & Ting, 2008; Joiner & Walker, 2002), acculturative stress emerged as a significant prospective predictor of hopelessness and of suicidal ideation, independently of recent general life stress, and hopelessness mediated the relation between acculturative stress and ideation. Higher acculturative stress at baseline predicted higher levels of suicidal ideation 2-3 years later through greater hopelessness. At the same time, acculturative stress did not significantly directly predict depressive symptoms at follow-up but did have an indirect relation through hopelessness at low levels of ethnic identity. These findings suggest that acculturative stress may be a source of stress relevant to different racial/ethnic groups that increases vulnerability to hopelessness and suicidal thinking among emerging adults, but a strong ethnic identity may buffer against this process. Furthermore, among individuals low in ethnic identity, acculturative stress may increase vulnerability to depressive symptoms over time to the degree that it also increases hopelessness.

Perceived discrimination at baseline was associated with higher levels of hopelessness but not depressive symptoms 2 to 3 years later. However, there was an indirect relation between perceived discrimination and depressive symptoms through hopelessness. This finding qualifies previous research demonstrating a link between experiences of racial/ethnic discrimination and depression (Gee et al., 2007; Kessler et al., 1999; Torres & Ong, 2010) by suggesting that increased levels of hopelessness may account for this relation. Perceived discrimination was not directly related to suicidal ideation at follow-up, contrary to recent reports that found discrimination to be concurrently associated with suicidal ideation (Cheng et al., 2010; Hwang & Goto, 2008). On the other hand, they are consistent with a previous study with African American emerging adults that found no link between racial discrimination and suicidal ideation and attempts (Castle, Conner, Kaukeinen, & Tu, 2011), although that was not a longitudinal study. Therefore, perceived discrimination may not directly increase vulnerability to depressive symptoms and suicidal ideation when accounting for acculturative stress and other factors, such as negative life events. However, among individuals low in ethnic identity, it may indirectly increase risk for depression and suicidal ideation to the degree that is associated with higher levels of hopelessness.

As expected, a higher ethnic identity was associated with lower hopelessness, fewer concurrent depressive symptoms, and less suicidal ideation, supporting previous findings of an association between higher ethnic identity and improved psychological well-being

(Greene et al., 2006; Martinez & Dukes, 1997), as well as lower rates of suicidal ideation and attempts (Cheng et al., 2010). Ethnic identity moderated the indirect relations between culturally related stressors (acculturative stress, perceived discrimination) and both depressive symptoms and suicidal ideation through hopelessness. Together, these findings suggest that ethnic identity may buffer against the indirect relation between culturally related stress and symptoms of depression and suicidal ideation through hopelessness.

This is the first study of which we are aware to examine the relation between acculturative stress, perceived discrimination, and vulnerability to depressive symptoms and suicidal ideation at a 2- to 3-year follow-up point. The findings suggest that closer examination of the experiences that result from acculturation may inform the assessment and treatment of at-risk individuals from diverse racial and ethnic backgrounds.

STRENGTHS, LIMITATIONS, AND FUTURE DIRECTIONS

While the present study examined the effects of culturally related experiences on depression and suicidal ideation in a heterogeneous sample, we did not examine between-group differences due to the relatively small number of participants per racial/ethnic group. Ethnic identity may buffer against the effects of culturally related stressors on depressive symptoms and suicidal ideation in some racial/ethnic groups and not others. For instance, Walker and colleagues (2008) reported that ethnic identity moderated the relation between depressive symptoms and suicidal ideation among African American emerging adults, but not among their European American counterparts. This may explain why we did not observe a correlation between ethnic identity and perceived discrimination in the overall sample. In a related vein, the mediating effects of hopelessness observed may also vary across racial/ethnic groups. Future research should examine this relation by race/ethnicity.

Another limitation of the study design was the absence of a measure of hopelessness and suicidal ideation at baseline. However, it is noteworthy that culturally related predictors, measured at baseline, were associated with suicidal ideation at follow-up, even after adjusting for symptoms of depression and a suicide attempt history at baseline. This study is also limited by inclusion of only self-report measures. It is possible that some of the associations between variables are the result of shared method variance. In addition, the self-report measures of culturally related stressors may be capturing perceived, rather than actual, experiences, and these

may be subject to recall bias. Future research should include non-self-report measures (e.g., interviews) or experience sampling. Moreover, sociocultural variables that were not accounted for in the present study, such as religion, socioeconomic status, and immigration status (documented vs. undocumented), may influence the relation between culturally related stress and suicidal ideation. Caution should also be heeded in generalizing the findings beyond a college-student population. Similarly, the sample was largely female and may not reflect the experiences of male emerging adults. We also intentionally oversampled for emerging adults with a suicide attempt history in order to conduct meaningful analyses about vulnerability to suicidal ideation, and findings may not generalize to a broader population of college students and emerging adults. Finally, similar research with a clinical sample might provide a more comprehensive view of the impact of culturally related stressors on vulnerability to depression and suicidal ideation in emerging adulthood, as this impact may differ based on the severity of risk for suicidal behavior.

While this study examined the degree to which emerging adults identify with an ethnic group, some researchers argue that racial/ethnic identity is a multidimensional construct and have shown that different dimensions of ethnic identity may function separately from one another (Sellers & Shelton, 2003). Future research should investigate how the different dimensions of racial/ethnic identity may impact risk for depression and suicidal ideation and whether they buffer against the impact of culturally related stressors.

Future research should further examine interactions between culturally related experiences and cognitive factors. For example, researchers have suggested that repeatedly dwelling on a negative mood in response to stressful life events may increase vulnerability to suicidal ideation (Chan et al., 2009), and such negative moods may be triggered by culturally related stressors. Hence, the impact of discrimination or acculturative stress on risk for suicidal thoughts and behavior may vary depending on an individual's cognitive response to such stressors. Furthermore, it would be useful to examine culturally related variables in light of prevailing cognitive models of suicidal behavior. For instance, Joiner suggests that suicidal desire is a function of the degree to which individuals perceive themselves as a burden to others and also the degree to which their need for belonging is thwarted (Joiner, 2005), and indeed, recent research with college students found that variation in suicidal ideation across academic semesters was partially explained by thwarted belonging (Van Orden et al., 2008). It may be that culturally related stressors increase vulnerability to

suicidal behavior to the degree that they affect how much individuals feel a sense of belonging.

Despite the aforementioned limitations, there are several strengths to the study that are noteworthy. Consideration of both cultural and cognitive factors provided information about the ability of cognitions such as hopelessness to impact the relation between culturally related experiences, depressive symptoms, and suicidal ideation. Another strength of the study is the racial/ethnic diversity of the sample, with non-U.S.-born individuals well represented across the various racial/ethnic groups, including White emerging adults. However, considering that the sample was obtained from a diverse metropolitan area, the findings from this study may not generalize to regions with more homogeneous populations. One study found that African American students in a predominantly Black college reported less acculturative stress than African Americans in a predominantly White college (Joiner & Walker, 2002), highlighting the importance of context in culturally related experiences.

CLINICAL IMPLICATIONS

Clinicians and researchers have urged the development of culturally sensitive services targeted at reducing risk for suicidal behavior in youth (Goldston et al., 2008). Understanding how acculturative stress, perceived discrimination, and ethnic identity impact risk for suicidal behavior may improve current assessments and treatments, particularly among emerging adults from diverse backgrounds, given the prevalence of such culturally related experiences among racial and ethnic minorities (Kessler et al., 1999; Pérez et al., 2008; Phinney, 1992). Clinical interventions with such emerging adults should address stress around the process of acculturation, along with stress related to discrimination and perhaps assist acculturating individuals in developing adaptive ways of coping with these stressors. For instance, rather than merely addressing hopelessness as a cognitive risk factor, professionals working with emerging adults at risk for suicidal behavior might inquire about the role that culturally related stressors play in the development of hopelessness. In other words, addressing culturally related stressors in addition to hopelessness may better inform risk assessment and treatment. Furthermore, clinicians should address ethnic identity development, as a strong ethnic identity may lessen the impact of hopelessness on the relation between culturally related stress and risk for depression and suicidal ideation. A strong ethnic identity may help generate adaptive coping responses, which clinicians might identify and promote as a way of reducing the negative effects of culturally related stress.

CONCLUSION

In summary, the study findings suggest that acculturative stress and perceived discrimination may increase, while ethnic identity may decrease, vulnerability to depression and suicidal ideation to the degree that they impact hopelessness. This study attempts to offer a better understanding of risk and protective factors for these symptoms in a cultural context by examining the interplay between culturally related experiences and cognitive vulnerability. Such an improved understanding may allow researchers and practitioners to better identify emerging adults at risk for suicidal behavior, including youths from racial/ethnic minority backgrounds, and to develop more culturally competent suicide prevention and intervention services for emerging adults of all racial/ethnic backgrounds. These steps would provide an avenue through which to address the racial/ethnic disparities in youth depression and suicidal behavior.

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