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Cognitive reappraisal and expressive suppression: Links to racial-ethnic discrimination and adjustment among Latino/a and Asian-heritage college students

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Abstract

Objective: We examined whether two key emotion regulation strategies, cognitive reappraisal and expressive suppression, moderated the relations between discrimination (i.e., foreigner objectification and general denigration) and adjustment.

Methods: Participants were U.S. Latino/a and Asian-heritage college students ($N = 1,279$, 67% female, 72% U.S. born) from the Multi-Site University Study of Identity and Culture (MUSIC). Students completed online self-report surveys in 2009.

Results: Multi-group path analysis demonstrated that a fully constrained model fit well for both Latino/a and Asian-heritage student data. The results showed that with increasing levels of denigration (but not foreigner objectification), the combination of lower cognitive reappraisal and higher expressive suppression was related to greater depressive symptoms, anxiety, and aggression.

Conclusions: Our findings highlight the importance of examining multiple emotion regulation strategies simultaneously—considering what strategies are available to individuals and in what

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combination they are used—to understand how best to deal with negative emotions resulting from experiencing discrimination.

Keywords

Emotion regulation; Discrimination; Asian American; Latino/a; College students

Racial and ethnic discrimination, common experiences for ethnic minority college students in the U.S., are associated with both internalizing and externalizing symptoms. Among Latino/as, discrimination has been linked to greater psychological distress, alcohol abuse, suicidal ideation, state and trait anxiety, and likelihood of being clinically depressed (H.-L. Cheng & Mallinckrodt, 2015; Hwang & Goto, 2008; Yosso, Smith, Ceja, & Solórzano, 2009). Among Asian Americans, discrimination has been linked to lower perceived social competence, social connectedness, self-esteem, and sense of coherence, as well as greater substance abuse, depressive symptoms, and psychological distress (Alvarez, Juang, & Liang, 2006; Hwang & Goto, 2008; Lee, 2005; Ying, Lee, & Tsai, 2000).

Nonetheless, not everyone suffers the same negative consequences or to the same degree. How individuals manage their emotional responses to experiences of discrimination may account for some of the individual variation in health and psychological outcomes. Although focusing solely on individual-level processes is not sufficient to address the harmfulness of discrimination (e.g., we must also dismantle and change discriminatory contexts, Masten, 2014; Ungar, Ghazinour, & Richter, 2013), a better understanding of the role of emotion regulation can offer another access point for intervention. Consequently, the purpose of this study was to examine more closely how emotion regulation strategies may either mitigate or exacerbate the negative effects of discrimination for Latino/a and Asian-heritage college students.

Emotion regulation as moderator of discrimination and adjustment

From a risk and resilience perspective, discrimination is a risk factor that threatens optimal development physically, psychologically, and socially (see meta-analysis by Pascoe & Smart Richman, 2009). However, individuals vary in how they respond and adapt to risk, depending primarily upon the presence of vulnerability and protective factors. In general, vulnerability factors exacerbate poor responses to risk, whereas protective factors support ameliorative adaptations (Luthar, Cicchetti, & Becker, 2000). These vulnerability and protective factors often occur simultaneously and can be found on multiple levels: within the individual, at the family level, and in contexts outside of the family such as school or community (Werner, 1995). For instance, among Asian-heritage adolescents and adults experiencing discrimination, family conflict acted as a vulnerability factor while family support acted as a protective factor (Juang & Alvarez, 2010; Noh & Kaspar, 2003). Thus, individuals who have access to protective factors are more likely to demonstrate more positive adjustment in the presence of a risk factor, compared to those who do not. In our study, we focus on how different emotion regulation strategies may act alternately as protective factors or as vulnerability factors for individuals confronting discrimination.

Emotion regulation has been defined as “the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features to accomplish one’s goals” (Thompson, 1994). The ways in which a person regulates emotions in different stress-inducing situations has important implications for how the situation is experienced and, subsequently, how that experience affects the individual’s mental health and well-being. Experiencing discrimination can be stress-inducing and elicit negative emotions, such as anger, frustration, and resentment (Sue et al., 2007), all of which can have profound effects, both immediate and cumulative, on well-being. There are various means to address the broader consequences of such emotions, but emotion regulation encompasses the proximal processes occurring as the emotion is being internalized and expressed, consciously and unconsciously (Gross & John, 2003; Gross, 2015).

Two strategies have been the primary foci of emotion regulation research: cognitive reappraisal and expressive suppression (Gross & John, 2003). *Cognitive reappraisal* refers to re-evaluating the meaning of a given situation to reduce its emotional impact (Gross & John, 2003). When participants in a laboratory study were exposed to anger-inducing scenarios, those who engaged in high levels of reappraisal reported less anger and overall negative emotions, while also showing more adaptive cardiovascular responses, as compared to those who engaged in low levels of reappraisal (Mauss, Cook, Cheng, & Gross, 2007). In a study with Asian American college students, cognitive restructuring, an active re-evaluation strategy similar to cognitive reappraisal, was found to buffer the effects of low (but not high) levels of discrimination on well-being (Yoo & Lee, 2005). Another study found that Latino/a college students in areas with large Latino/a populations reported more favorable psychological functioning in the face of discrimination when using high levels of habitual cognitive reappraisal; the same did not hold, however, for Latino/a students in areas with smaller Latino/a populations (Soto et al., 2012). Collectively, these studies suggest that cognitive reappraisal, even when measured in regard to general (habitual) use and not in direct response to experienced discrimination, may buffer against discrimination’s negative effects, at least under certain conditions. These findings warrant further investigation.

Expressive suppression, in contrast to cognitive reappraisal, refers to the inhibiting of an emotional response. Although suppression may help a person to avoid undesirable interpersonal consequences that can follow from expressing negative emotions, suppression has generally been found to be ineffective in reducing the negative emotions themselves. In an experimental study, individuals who were told to suppress their emotions while watching a film meant to induce negative emotions still reported negative feelings despite their efforts to suppress them. Those who were told to use a reappraisal strategy, on the other hand, reported fewer negative feelings (Gross, 1998). Thus, suppressing emotions can create dissonance between what a person is actually feeling and what he or she is outwardly expressing. Over time, this dissonance can lead to more unwanted outcomes, including anxiety and sadness, in addition to the negative emotions already elicited (Gottschalk, 2003). In general, individuals who engage in greater suppression of negative emotions report poorer psychosocial functioning (Gross & John, 2003).

More recent literature suggests that the consequences of expressive suppression may depend on cultural background. The results are somewhat mixed for Latino/a and Asian-heritage

populations. Some studies have found that suppression was not related to psychological adjustment (Soto, Perez, Kim, Lee, & Minnick, 2011; Su et al., 2015), while other studies have found that suppression was related to poorer adjustment including greater depressive symptoms, anxiety, and internalizing problems (Gong, Li, Zhang, & Rost, 2016; Hsieh & Stright, 2012; Park, Kim, Cheung, & Kim, 2010; Zhao & Zhao, 2015) and lower well-being (Cheung & Park, 2010; Su et al., 2015). Taken together, the findings suggest that for Latino/a and Asian-heritage populations, expressive suppression may, in general, be detrimental to well-being, but not always.

Most studies have examined either expressive suppression or cognitive reappraisal in isolation, rather than investigating their interactive effects on various outcomes. Examining a single strategy in isolation tells only part of the story, given that people tend to draw on a range of emotion regulation strategies, even under similar conditions (Aldao & Nolen-Hoeksema, 2013; Bonanno, Papa, Lalande, Westphal, & Coifman, 2004). One study found that using high levels of typically adaptive emotion regulation strategies, including positive reframing (a concept similar to reappraisal), in addition to high levels of typically maladaptive strategies, including suppression, predicted fewer anxiety and depressive symptoms than other emotion regulation combinations (Aldao & Nolen-Hoeksema, 2012). Thus, being able to draw on multiple emotion regulation strategies, including those considered “maladaptive”, can, in combination with another strategy, be advantageous. An individual’s openly emotional response to a negative situation, such as racial or ethnic discrimination, might create greater vulnerability; temporary suppression of emotional expression may prove the most adaptive strategy in this case (Brondolo, ver Halen, Pencille, Beatty, & Contrada, 2009). Expressive suppression is also effective in dealing with high-intensity emotions, at least initially (Sheppes & Gross, 2011). However, without another emotion regulation strategy available, such as cognitive reappraisal, the longer-term psychological harm of suppression may outweigh its short-term benefits. Thus, based on prior research and a risk and resilience perspective, we expect that cognitive reappraisal will consistently act as a protective factor in the face of ethnic discrimination, while the consequences of expressive suppression will depend on whether reappraisal is available. We expect that expressive suppression by itself will exacerbate the negative effects of discrimination but that those individuals who draw on *both* strategies will have the most adaptive outcomes (Aldao & Nolen-Hoeksema, 2012). In sum, habitual use of suppression may help avoid further negative interpersonal interactions and dampen intense negative emotions quickly as ethnic discrimination experiences unfold, and cognitive reappraisal may help ease the emotional burden of experiencing discrimination altogether.

Types of discrimination experienced by Latino/a and Asian-heritage students

We focus on Latino/a and Asian-heritage individuals because these groups are two of the fastest-growing segments of the U.S. population (Pew Research Social and Demographic Trends, 2012; Pew Hispanic Center, 2011) and are projected to comprise an increasing percentage of college enrollment in the next decade (National Center for Education Statistics, 2011). Both groups are targets of overt and covert racial and ethnic discrimination

(Hwang & Goto, 2008), perceived as foreigners even if born and raised in the United States (Armenta et al., 2013; Huynh, Devos, & Smalarz, 2011), report similar levels of discrimination over a lifetime (Landrine, Klonoff, Corral, Fernandez, & Roesch, 2006), and report comparable levels of stress when exposed to discrimination (Hwang & Goto, 2008). A recent meta-analysis reports that Latino/a and Asian-heritage groups both show a stronger link between racism and poorer mental health compared to other ethnic groups (Paradies et al., 2015). Despite these similarities, there are also differences. Some research indicates that Latino/a youth experience discrimination from adults more than Asian-heritage youth, whereas Asian-heritage youth experience discrimination from peers more than Latino/a youth (Greene, Way, & Pahl, 2006; Rosenbloom & Way, 2004). Latino/as are subjected to negative academic stereotypes (Rodríguez, 2014; Woodcock, Hernandez, Estrada, & Schultz, 2012) while Asian Americans are subjected to the “model minority” stereotype (Yoo, Miller, & Yip, 2015). These pervasive stereotypes uniquely shape the experiences of discrimination for members of each ethnic group (Niwa, Way, Okazaki, & Qin, 2011; Rosenbloom & Way, 2004). Within ethnic groups, U.S. adults who experienced discrimination also had an increased likelihood of major depressive disorder, but for those of Filipino heritage and not Vietnamese or Chinese (Ai, Nicdao, Appel, & Lee, 2015). Studying different ethnic groups allows researchers to pinpoint commonalities and differences in the experiences and consequences of racial/ethnic discrimination both within and across groups (Hughes et al., 2006). Consequently, we examine the relations among discrimination, emotion regulation, and adjustment separately by ethnic group in order to investigate possible differences in patterns of relations among the variables.

In the present study we examine two forms of discrimination that both Latino/a and Asian-heritage individuals have reported experiencing: general denigration and foreigner objectification. General denigration encompasses direct forms of discrimination such as being denied opportunities or being rejected because of one’s race or ethnicity. Foreigner objectification refers to a subtle, more covert form of discrimination than general denigration, namely being viewed and/or treated as not “American” even if one was born in the US or comes from a family that has lived in the US for generations (Armenta et al., 2013; Pituc, Jung, & Lee, 2009) For example, asking a second-generation Latino/a or Asian-heritage individual the seemingly innocuous question, “Where are you from?” conveys the message that the person does not really belong in the US and is part of the “Other.” Unlike the case of blatant denigration (e.g., “Go back to your own country!”), such an interaction might not be immediately understood as ethnic discrimination, as it might take time to decipher and recognize its underlying meaning. Such subtle discrimination falls under the category of “microaggressions,” a type of discrimination which has gained increasing interest (Córdova & Cervantes, 2010; Nadal, 2011; Sue et al., 2007). The difference in directness, intensity, and intentionality of general denigration and foreigner objectification may, in turn, affect the choice of emotion regulation strategies, as well as their links to adjustment (Brondolo et al., 2009). For this reason, we examine both types of discrimination simultaneously to assess the unique contributions of each type to adjustment. Discrimination has been associated with individuals experiencing both internalizing and externalizing behaviors (Pascoe & Smart Richman, 2009). Hence, in our study, we focus on depressive symptoms and anxiety (internalizing), and aggression (externalizing) as the outcomes of

discriminatory experiences. Numerous studies have linked maladaptive internalizing symptoms to experiences of discrimination, both overt and covert, among various Latino/a and Asian-heritage populations (Hou, Kim, Wang, Shen, & Orozco-Lapray, 2015; Hwang & Goto, 2008; Nadal, Wong, Striken, Griffin, & Fujii-Doe, 2015; Park, Schwartz, Lee, Kim, & Rodriguez, 2013). For instance, Hou et al.'s (2015) longitudinal study found that greater discrimination predicted greater depressive symptoms (and vice versa) across adolescence and young adulthood for Chinese Americans. Yet, research remains limited regarding aggressive feelings and behavior in relation to discrimination (Smokowski & Bacallao, 2009), particularly among Asian-heritage youth (Park et al., 2013). For this reason, we included both the internalizing symptoms (i.e., depressive symptoms and anxiety) and the less well-explored externalizing behaviors (i.e., aggression), all in relation to discrimination and emotion regulation.

Hypotheses

Because cognitive reappraisal has been consistently linked to more positive well-being and expressive suppression to poorer well-being (but somewhat less so for Latino/a and Asian-heritage populations), we hypothesize that: (1) When considered individually, cognitive reappraisal will buffer the negative effects of discrimination on depressive symptoms, anxiety, and aggression, and expressive suppression will exacerbate the negative effects. We also hypothesize that: (2) When considered in combination, cognitive reappraisal will predict the most favorable adjustment in the face of discrimination for those who also report high levels of suppression. Because no prior work has examined these specific relations by ethnic group, we test but do not hypothesize whether these interactions would relate to adjustment differently by ethnicity.

Method

Participants and procedures

We used data that were collected as part of a larger, online Multi-Site University Study of Identity and Culture (MUSIC), conducted in 2008 and 2009 in the United States (for more details see Castillo & Schwartz, 2013; Weisskirch et al., 2013). Each participating university's institutional review board approved the study. We included only the 2009 data set because the main variables we were interested in (i.e., emotional regulation and discrimination) were collected in 2009. Participants self-identified their ethnic group by first responding to a closed-choice question: "Which ethnic group do you belong to?". The current sample included 1,279 college students who selected being either Latino/a ($n = 489$, with 84% born in the US and 72% female) or Asian-heritage ($n = 790$, with 64% born in the US and 65% female). Participants were then also asked to write their ethnic identity "in their own words". Table 1 shows the range of these self-reported ethnic identities within the broad categories of Latino/a and Asian-heritage.

We included only those between the ages of 18 and 25 years ($M = 19.6$, $SD = 1.57$), the period of emerging adulthood (Arnett & Tanner, 2006). Cognitive advances during this developmental period, combined with the college context that affords new opportunities, experiences, and perspectives, suggests that this is a prime time to become more attuned to

the issues and complexities surrounding race and ethnicity, including issues of racism and discrimination (Azmitia, Syed, & Radmacher, 2008; Phinney, 2006).

Participants reported an average annual family income between \$30,000 and \$50,000. Based on U.S. census data (U.S. Census Bureau, 2011), the ethnic composition of the counties of each university was used to assess density of same-ethnic members (Soto et al., 2012). For Latino/a students, the ethnic density ranged from two to 65% ($M = 34.5$, $SD = 18.44$). For Asian-heritage students, the ethnic density ranged from one to 23% ($M = 9.56$, $SD = 4.87$).

Measures

Emotion regulation—Cognitive reappraisal and expressive suppression were measured using the Emotion Regulation Questionnaire (Gross & John, 2003). The original scale has six items evaluating cognitive reappraisal and four items evaluating expressive suppression that participants rate using a 7-point scale, anchored by 1 (*strongly disagree*) and 7 (*strongly agree*). For the current study, we excluded the positive emotion items [e.g., “When I want to feel more positive emotion (such as joy or amusement), I change what I’m thinking about”], as suppression of positive and negative emotions may lead to different consequences (Su et al., 2015) and because discrimination experiences are primarily (if not exclusively) associated with negative emotions. Thus, the two subscales refer to cognitive reappraisal of negative situations (4 items, e.g., “When I want to feel less negative emotion (such as sadness or anger), I change what I am thinking about.”) and expressive suppression of negative emotions (3 items, e.g., “When I am feeling negative emotions, I make sure not to express them.”). Cronbach’s alphas were .83 for reappraisal for both Latino/as and Asian-heritage students and .83 and .76 for suppression for Latino/as and Asian-heritage students, respectively.

Discrimination—General denigration and foreigner objectification were measured using the Brief Discrimination Scale (Armenta et al., 2013; Pituc et al., 2009). Participants responded to the stem, “How many times have you experienced the following events in the past year?” on a scale from 1 (*never*) to 4 (*five or more times*). Three items measured general denigration, such as “Treated unfairly or rudely by strangers because of your ethnicity/race.” Four items measured foreigner objectification, such as “Had your American citizenship or residency questioned by others.” Cronbach’s alphas were .78 and .76 for denigration for Latino/as and Asian-heritage students, respectively, and .71 and .70 for foreigner objectification for Latino/as and Asian-heritage students, respectively.

Depressive symptoms—A modified version of the 20-item Center for Epidemiologic Studies Depression Scale was used to measure depressive symptoms in the past week (CES-D; Radloff, 1977). The original 4-point response scale was modified to align with other response scales in the MUSIC study so that participants responded on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) (Schwartz et al., 2010). A sample item is “I was bothered by things that usually don’t bother me.” This scale correlated negatively with self esteem and life satisfaction (Armenta et al., 2013). Cronbach’s alpha was .86 for Latino/as and .87 for Asian-heritage students.

Anxiety—A modified version of the 18-item Beck Anxiety measure was used to measure feelings of anxiety in the past week (Beck, Epstein, Brown, & Steer, 1988). Seven of the items from the original Beck Anxiety Inventory were retained, and 11 items were added to cover a broader range of general anxiety dimensions (e.g., difficulty sleeping, excessive worrying, being in a bad mood, having “butterflies” in one’s stomach) (Schwartz et al., 2010). Participants responded on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to items such as “This week, I have felt very tense and have had trouble relaxing.” This scale correlated positively with depressive symptoms (Schwartz et al., 2010). Cronbach’s alpha was .94 for both ethnic groups.

Aggression—The 10-item physical aggression subscale from the Sub-Types of Antisocial Behavior Scale was used (Burt & Donnellan, 2009). Participants indicated how well behaviors (e.g., “Got into physical fights”, “Felt like hitting people”) described themselves in the past 6 months by responding on a scale ranging from 1 (*very inaccurate*) to 5 (*very accurate*). This scale correlated positively with other externalizing behaviors such as theft and fraud (Burt & Donnellan, 2009). Cronbach’s alpha was .86 for Latino/as and .88 for Asian-heritage students.

Results

Preliminary analyses and control variables

Because experiences and consequences of discrimination have been related to age (Yip, Gee, & Takeuchi, 2008), gender (Alfaro, Umaña-Taylor, Gonzales-Backen, Bámaca, & Zeiders, 2009), nativity (Armenta et al., 2013; Yip et al., 2008), socioeconomic status (Kwate & Goodman, 2015b), and ethnic density (Soto et al., 2012), we used bivariate correlations to test whether these demographic variables accounted for variance among the main study variables (i.e., general denigration, foreigner objectification, reappraisal, suppression, depressive symptoms, anxiety, and aggression). Given that all of the demographic variables related to at least one of the main study variables, we included the demographics as controls in the main analyses. Descriptive statistics and bivariate correlations of the demographics and study variables are presented in Table 2.

Testing the hypotheses

An analysis of missing data showed that there were 9.7% missing values. To handle missing data, we used the full-information maximum likelihood (FIML) approach in Mplus (Muthén & Muthén, 2012), which analyzes all available information from the covariance matrix when variables have missing values (Enders, 2001).

Given the nested structure of our data (students nested in universities), we initially used multilevel modeling to test whether the variability of our dependent variables could also be due to university membership. For the dependent variables, the intraclass correlations (ICC) were .01 for depressive symptoms, .02 for anxiety, and .03 for aggression, indicating that a very small amount of the variability in adjustment was accounted for by group-level university effects. Thus, we proceeded with path analysis as multilevel modeling was not necessary to account for the nested structure of our data (Kahn, 2011).

To test our hypothesized model, we used multi-group path analysis in Mplus 7.11 (Muthén & Muthén, 2012). To assess model fit, we relied on four fit indices: chi-square, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). The recommended cut-off values are: CFI values of .95 or above, RMSEA values of .06 or below and SRMR values of .08 or below (Hu & Bentler, 1999). We tested a series of multi-group models with ethnicity (Latino/a and Asian-heritage) as the grouping variable. First, we tested an unconstrained multi-group model that allowed all main paths to vary across the two groups. Second, we tested a fully constrained model by constraining all main paths to be equal across the two groups. Third, we used the chi-square difference test to evaluate model fit comparing the constrained model to the unconstrained model. These three steps mirror analyses conducted with this same dataset to compare relations regarding cultural values and well-being across ethnicity (Schwartz et al., 2010). Fourth, we plotted significant interactions.

In all analyses, centered variables were used to test main effects as well as interactions to reduce multicollinearity. In the models, we included five control variables (age, gender, nativity, income, and ethnic density), four main effects (denigration, foreigner objectification, reappraisal, suppression), five 2-way interactions (denigration \times reappraisal, denigration \times suppression, foreigner objectification \times reappraisal, foreigner objectification \times suppression, and reappraisal \times suppression), and two 3-way interactions (denigration \times reappraisal \times suppression, and foreigner objectification \times reappraisal \times suppression). We tested models for the three dependent variables (depressive symptoms, anxiety, and aggression) separately. For interactions that were significant, we re-ran analyses using regression to probe the interaction (Aiken & West, 1991).

Depressive symptoms

The unconstrained model for depressive symptoms demonstrated a good fit to the data across the two ethnic groups, $\chi^2(5) = 4.78, p = .44$; RMSEA = .000, SRMR = .004, CFI = 1.00. However, the constrained model with all main paths set to be equal across the two ethnic groups also demonstrated good fit, $\chi^2(16) = 12.76, p = .76$; RMSEA = .00, SRMR = .008, CFI = 1.00. The constrained model did not fit significantly worse than the unconstrained model, χ^2 difference (11) = 7.98, $p = .72$, suggesting that the final, more parsimonious model was acceptable for both ethnic groups. The model explained 10% of the variance in depressive symptoms for both groups. In the final model, denigration and foreigner objectification were both positively related to depressive symptoms. Cognitive reappraisal was negatively related, and emotion suppression was positively related to depressive symptoms. The 3-way interaction between denigration, reappraisal, and suppression was significant.

Anxiety

The unconstrained model for anxiety demonstrated a good fit to the data across the two groups, $\chi^2(5) = 4.58, p = .47$; RMSEA = .00, SRMR = .005, CFI = 1.00. However, the constrained model with all main paths set to be equal across the two ethnic groups also demonstrated good fit, $\chi^2(16) = 10.62, p = .83$; RMSEA = .00, SRMR = .007, CFI = 1.00. The constrained model was not significantly different than the unconstrained model, χ^2

difference (11) = 6.04, $p = .87$, suggesting that the final, more parsimonious model was acceptable for the two ethnic groups. The model explained 14% and 13% of the variance in anxiety for Latino/a and Asian-heritage students, respectively. In the final model, denigration and foreigner objectification were both positively related to anxiety. Cognitive reappraisal was negatively related and emotion suppression was positively related to anxiety. The 3-way interaction between denigration, reappraisal, and suppression was significant.

Aggression

The unconstrained model for aggression demonstrated a good fit to the data across the two groups, $\chi^2(5) = 5.35$, $p = .38$; RMSEA = .012, SRMR = .005, CFI = .997. However, the constrained model with all main paths set to be equal across the two ethnic groups also demonstrated adequate fit, $\chi^2(16) = 20.65$, $p = .19$; RMSEA = .03, SRMR = .01, CFI = .956. The constrained model was not significantly different than the unconstrained model, χ^2 difference (11) = 15.3, $p = .17$, suggesting that the final, more parsimonious model was acceptable for the two ethnic groups. The model explained 14% and 11% of the variance in aggression for Latino/a and Asian-heritage students, respectively. In the final model, denigration and foreigner objectification were both positively related to aggression. Cognitive reappraisal was negatively related and emotion suppression was not related to aggression. The 3-way interaction between denigration, reappraisal, and suppression was significant.

Probing three-way interactions

Because the multi-group analyses for all three dependent variables showed no significant ethnic group differences, we reanalyzed the model with the entire sample using regression to probe the interactions (Aiken & West, 1991). Regression coefficients for the final regression models for depressive symptoms, anxiety, and aggression can be found in Table 3. To clarify the 3-way interaction that was significant for all three adjustment measures, we conducted simple slope analyses and slope difference tests for the combined sample. For depressive symptoms, simple slope analyses revealed that for those who reported lower reappraisal and higher suppression, greater denigration was related to greater depressive symptoms (Fig. 1a and Table 3). The simple slopes were not significant for the other three combinations of emotion regulation strategies. Slope difference tests showed that the slope for those who reported lower reappraisal and higher suppression significantly differed from those who reported lower reappraisal and lower suppression ($t = 2.14$, $p = .03$). In other words, the combination of using less reappraisal and more suppression predicted the worst overall adjustment with increasing levels of general denigration in comparison to those individuals who reported using lower levels of both emotion regulation strategies.

For anxiety, simple slope analyses showed that the slopes for three patterns of emotion regulation (i.e., lower reappraisal/higher suppression, higher reappraisal/higher suppression, and higher reappraisal/lower suppression) were significant whereby greater denigration related to greater anxiety (see Fig. 1b and Table 3). None of the pairs of slopes were significantly different from one another. However, the pattern is similar to results with depressive symptoms as the dependent variable.

For aggression, simple slope analyses showed that for those individuals who reported lower reappraisal and higher suppression and those individuals reporting lower levels of both emotion regulation strategies, greater denigration was related to greater aggression (see Fig. 1c and Table 3). Slope difference tests showed that the slope for those individuals reporting less reappraisal and more suppression was significantly different from those individuals reporting higher levels of reappraisal and suppression ($t = 2.20, p = .03$) and significantly different from those individuals reporting lower levels on both regulation strategies ($t = 2.34, p = .02$).

Discussion

The purpose of this study was to examine how two types of discrimination—foreigner objectification and general denigration—related to internalizing and externalizing behaviors among Latino/a and Asian-heritage college students, depending on the emotion regulation strategies they employed. We found that it was the combination of emotion regulation strategies (and not each strategy individually) that moderated the discrimination-adjustment link, depending on the type of discrimination. Although we tested for possible differences across the two ethnic groups, our analyses showed that these relations, among both types of discrimination, emotion regulation strategies and their interactions, were similar for both Latino/a and Asian-heritage college students. Our results suggest that variations in the use of emotion regulation sheds light on why discrimination does not affect everyone in the same way. From a risk and resilience perspective, emotion regulation strategies can act as either protective or vulnerability factors, depending on the combination of emotion regulation strategies that individuals draw upon.

Discrimination is a risk factor: both foreigner objectification and general denigration were related to poorer adjustment in terms of greater depressive symptoms, anxiety, and aggression. Notably, by considering both types of discrimination simultaneously, we found that general denigration and foreigner objectification each contributed unique variance to adjustment. Our findings highlight the importance of distinguishing between blatant and subtle forms of discrimination, and the findings also make clear that each type of discrimination can be detrimental for those experiencing it. This outcome adds to the growing body of microaggression research consistent with the notion that an accumulation of subtle interactions that negate the national belonging or identity of an ethnic minority individual, such as those captured within the construct of foreigner objectification, are not harmless (Córdova & Cervantes, 2010; Nadal, 2011; Sue et al., 2007).

We found that, in general, higher levels of reappraisal were related to better adjustment and higher levels of suppression to poorer adjustment for both ethnic groups in our sample. Typically, cognitive reappraisal of negative emotions acts as a promotive factor of resilience, supporting more positive adjustment, while expressive suppression of negative emotions does not (Gross & John, 2003). Expressive suppression was related to higher levels of both types of internalizing symptoms, anxiety and depression, but not to the externalizing behaviors of aggression. Given the limited previous research regarding emotion regulation and aggression, further research into how suppression relates to other externalizing behaviors, such as delinquency or alcohol use, would be useful to understand how this

particular emotion regulation strategy may be differentially related to specific types of behaviors. In general, our results are consistent with previous work, though our findings of higher-order interactions suggest that these main effects need to be considered within the context of how the two emotion regulation strategies relate to one another for individuals.

We did not find support for our first hypothesis—that when considered individually, cognitive reappraisal would act as a protective factor while expressive suppression would act as a vulnerability factor for adjustment. Instead, for general denigration, there were indeed significant three-way interactions between discrimination and the two emotion regulation strategies to predict adjustment. In other words, it was only the combination of emotion regulation strategies that mattered for adjustment. We thus found partial support for our second hypothesis—that a combination of higher levels of both cognitive reappraisal and expressive suppression would be linked to more adaptive adjustment. For the combination of higher reappraisal and higher suppression, levels of depressive symptoms and aggression did not significantly change with increasing denigration in our sample, suggesting that being able to draw upon these two strategies protected against the negative effects of this type of discrimination. Having access to multiple strategies may be beneficial because it allows individuals to choose from a wider range of strategies that may fit the situation more appropriately (Aldao & Nolen-Hoeksema, 2013; Bonanno et al., 2004). These findings may also provide an opportunity for program development and intervention in teaching individuals adaptive emotion regulation strategies to engage with in the face of discrimination.

We also found, however, that other patterns of emotion regulation strategies were effective in countering higher levels of denigration. Increases in denigration were not related to increased levels of depressive symptoms and aggression when students reported a combination of higher reappraisal and lower suppression. Having at least one adaptive strategy, such as reappraisal, may be sufficient to counter the effects of denigration, at least for some aspects of adjustment and not others (such as anxiety). Likewise, even at higher levels of denigration, levels of depressive symptoms did not change for the combination of lower reappraisal/lower suppression. This finding is in stark contrast to the important result that the combination of lower reappraisal/higher suppression was most consistently related to poorer adjustment. More specifically, individuals with this profile showed that at increasingly higher denigration, they also reported higher depressive symptoms, anxiety, and aggression. These findings are consistent with the assertion that, while suppression could be of practical utility in certain situations, it does not seem to alleviate negative emotions in the way that reappraisal does (Gross & John, 2003; Ortner, Zelazo, & Anderson, 2013). Without the use of a second adaptive emotion regulation strategy (such as reappraisal), individuals who habitually use suppression at higher levels may be most harmed by greater experiences of denigration. Thus, the important point is not what strategy individuals tend to draw on, but in what combination. Higher levels of suppression *with* higher levels of reappraisal was effective in dampening the negative effects of discrimination while higher levels of suppression *without* reappraisal was not.

The fact that our second hypothesis was not fully supported (i.e., that individuals who draw on high levels of both reappraisal and suppression would show the most adaptive outcomes)

may be a reflection of the generally maladaptive nature of expressive suppression rather than capturing its potential as an adaptive strategy within specific situations of denigration or foreigner objectification. To better test the potentially adaptive nature of suppression in the future, researchers would need to explicitly link the experience of discrimination to expressive suppression and to measure both short- and long-term adjustment. Suppression of emotions may be protective in some cases, such as in managing high-intensity emotions early on (Sheppes & Gross, 2011) or in coping with traumatic events (Lin, Suyemoto, & Kiang, 2009). Yet, suppression in the long-term may be unhealthy (Gottschalk, 2003) without other emotion regulation strategies (e.g., cognitive reappraisal) to allow for a deeper processing of negative emotions associated with experiencing blatant discrimination. It makes sense, then, that considering the combination of strategies better predicts adjustment than considering each one individually, as different strategies may be helpful for different emotional intensities and for different points in time (Sheppes & Gross, 2011).

Contrary to the findings with general denigration, we did not find significant three-way interactions among foreigner objectification, reappraisal, and suppression in relation to any of the three measures of adjustment. Thus, the patterns of findings for blatant and subtle discrimination were different, supporting arguments that these two types should be conceptualized and measured separately. It may be that for subtle discrimination experiences, individuals have greater difficulty interpreting whether what happened was really a discriminatory event (Sue et al., 2007). Lack of clarity about where negative emotions are stemming may not trigger the same level of emotion regulation as experiencing a clearly negative, blatant encounter. Perhaps, then, the two emotion regulation strategies may be more consequential for discrimination that is more easily identified. Another possible interpretation relates to the cumulative nature of harm in relation to subtle discrimination, with months' and years' worth of microaggressions adding up to be significantly hurtful to one's well-being (Solórzano, Ceja, & Yosso, 2000). The cumulative psychological impact of discrimination has been well documented in research on chronic discrimination and allostatic load (Mays, Cochran, & Barnes, 2007). For this reason, longitudinal research is necessary to fully capture the effects of different emotion regulation strategies on experiences of more subtle forms of discrimination, such as foreigner objectification.

Limitations and future directions

The findings in this study should be interpreted in light of several limitations. The first limitation is the cross-sectional design of the study. We cannot determine the direction of effects between discrimination and poor adjustment given this design. Longitudinal studies, however, suggest that experiences of discrimination *lead to* greater maladjustment among youth (H.-L. Cheng & Mallinckrodt, 2015; English, Lambert, & Ialongo, 2014; Greene et al., 2006; Hou et al., 2015). Future research should examine how discrimination, adjustment, and emotion regulation strategies relate over time, in order to better understand how emotion regulation may offer protection against discrimination in the short- and long-term.

A second important limitation is that the way the data were gathered in this study precluded an examination of whether and how individuals engage in reappraisal and suppression in

direct response to experiences of discrimination. We can only assume that these are emotion regulation strategies habitually used when confronted with negative emotions, including those elicited from experiencing discrimination. It will be important in future research to pinpoint specific and situational emotion regulation strategies used in direct response to experiences of discrimination, both blatant and subtle.

A third limitation was the aggregation of specific ethnic groups within each larger, pan-ethnic group. We recognize that there are important differences in the histories, languages, customs, and experiences within Latino/a and Asian heritage groups. Indeed, while we found that suppression of negative emotions was related to poorer adjustment, other studies that have focused on specific ethnic groups (e.g., Mexican- and Chinese-heritage) found that suppression of emotions did not relate to well-being (Soto et al., 2011; Su et al., 2015). Nonetheless, there are important similarities across ethnic groups in the United States (e.g., being of minority status) that translate into similar patterns, such as experiencing discrimination and the consistent links to poorer adjustment, regardless of ethnic group (Smith & Silva, 2011). Future research could examine how gender and generational status may moderate these relations as experiences and consequences of discrimination may vary for females and males (Alfaro et al., 2009) and by generational status (Armenta et al., 2013). In our study, we controlled for these important variables but future studies could consider, for instance, whether emotion regulation works in the same way for females and males in changing the relation between discrimination and adjustment. We also did not have data on how long participants who immigrated have lived in the US. This information would be important to better understand how foreigner objectification, for instance, may vary with length of time exposed to living in the US.

Because this study was conducted with college-attending emerging adults, questions remain regarding the generalizability of the results to non-college emerging adults. Discrimination increases with higher levels of education for African Americans (E. R. Cheng, Cohen, & Goodman, 2015; Kwate & Goodman, 2015a). Greater education may increase individuals' awareness of discrimination as well as expose them to contexts that devalue their skills and competencies despite attaining higher education. Yet, although there are differences in exposure to discrimination, cognitive reappraisal and expressive suppression may work in the same way for non-college, ethnic minority youth, as there is evidence that college-attending and non-college attending adults are similar in their use of emotion regulation strategies to deal with negative emotions (Veilleux, Skinner, Reese, & Shaver, 2014). Nonetheless, future research should also include non-college emerging adult samples to establish whether emotion regulation strategies function in the same way in response to discrimination across these populations.

Finally, in addition to focusing on non-college samples, it would be worthwhile to focus on other age groups besides 18–25 year olds. Protective and vulnerability factors that buffer or exacerbate the negative effects of discrimination fluctuate throughout adulthood (Yip et al., 2008). Likewise, emotion regulation strategies that buffer or exacerbate the negative effects of discrimination may work differently across the lifespan. There may be particularly salient developmental time points to investigate emotion regulation, discrimination, and adjustment, such as during adolescence. During adolescence, discrimination increases (Greene et al.,

2006), as does the occurrence of internalizing and externalizing behaviors (Hinshaw, Lahey, & Hart, 1993; Thapar, Collishaw, Pine, & Thapar, 2012), which may heighten the salience of emotion regulation to well-being, given that social contexts and relationships with important others such as parents and peer groups change as well (Morris, Silk, Steinberg, Myers, & Robinson, 2007).

Conclusion and implications

Considering two key emotion regulation strategies in combination predicted adjustment in relation to discrimination. For the combination of lower reappraisal and higher suppression, greater denigration meant more depressive symptoms, anxiety, and aggression. Our findings have important implications in light of the prevalence of discrimination faced by individuals from diverse ethnic groups. By examining multiple emotion regulation strategies simultaneously, we showed that it is the *combination* of strategies that matters in coping with negative emotions. Poorer adjustment may occur when individuals draw upon limited positive strategies in emotionally taxing situations and instead rely predominantly on a less adaptive strategy (i.e., suppression). In addition to our focus on individual-level factors, we acknowledge that institutional-level practices such as working to dismantle discriminatory policies and promoting a more positive social climate and intergroup relations on university campuses are also necessary (Bowman & Denson, 2012). Understanding discrimination, protective and vulnerability factors, and adjustment on multiple levels opens up broader access points to address the harmful experiences of discrimination.

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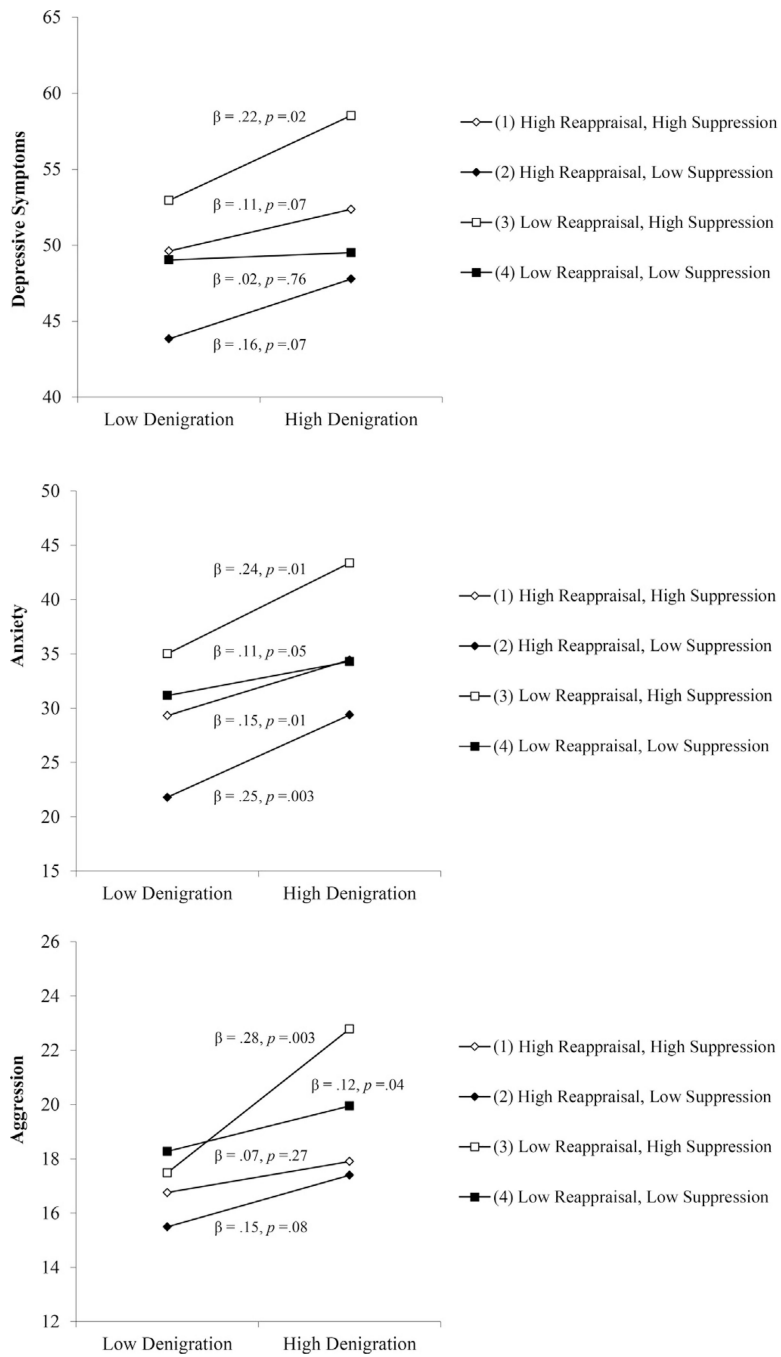


Fig. 1.
 a. Three-way interaction between reappraisal, suppression, and general denigration predicting depressive symptoms. Slopes (3) and (4) are significantly different ($t = 2.14$, $p = .03$).
 b. Three-way interaction between reappraisal, suppression, and general denigration predicting anxiety. Slopes are not significantly different from one another.
 c. Three-way interaction between reappraisal, suppression, and general denigration predicting aggression.

Slopes (1) and (3) are significantly different ($t = 2.20, p = .03$) and slopes (3) and (4) are significantly different ($t = 2.34, p = .02$). Standardized coefficients are reported.

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Table 1

Self-reported ethnic identity of Asian- and Latino/a-heritage participants.

	<i>n</i>
Asian-heritage (<i>n</i> = 790)	
Chinese heritage (e.g., Chinese, Chinese American)	147
Asian	137
Asian American	81
Korean heritage (e.g., Korean, Korean American)	69
Vietnamese heritage (e.g., Vietnamese, Vietnamese American)	59
Indian heritage (e.g., Indian, Indian American)	54
Filipino heritage (e.g., Filipino/a, Filipino American)	35
Mixed/biracial (e.g., Asian/White, Filipino/Black)	26
Hmong heritage (e.g., Hmong, Hmong American)	23
American	20
Taiwanese	16
East Asian	10
South/Southeast Asian	9
Japanese heritage (e.g., Japanese, Japanese American)	8
Pakistani heritage (e.g., Pakistani, Pakistani American)	6
Cambodian	5
Pacific Islander	5
Bengali	4
Laotian	4
Sri Lankan	3
Thai	3
Afghan	2
Hawaiian	1
Burmese	1
Other (e.g., unique, human)	49
Missing	21
Latino/a-heritage (<i>n</i> = 489)	
	<i>n</i>

Latino/a, Hispanic	212
Mexican heritage (e.g., Mexican, Mexican American)	111
Mixed/biracial (e.g., Hispanic/Sri Lankan, Mexican/European American)	25
American	13
Cuban heritage (e.g., Cuban, Cuban American)	13
Latino/a American, Hispanic American	9
Caucasian	7
Puerto Rican	6
Salvadorian	6
Spanish	6
Dominican heritage (Dominican, Dominican American)	4
Guatemalan	3
Columbian heritage (Columbian, Columbian American)	2
Nicaraguan	2
Peruvian	2
Guyanese	1
Brazilian	1
Central American	1
Other (e.g., colorful, who I am)	51
Missing	12

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Table 2

Bivariate correlations and descriptives of variables by ethnicity. Asian-heritage above diagonal, Latino/a below diagonal.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	M	SD	Range
1. Age	-	-.05	-.16**	-.05	-.08*	.06	.12**	-.04	-.03	.04	.07	.05	19.59	1.56	18-25
2. Gender ^a	-.06	-	.02	-.10**	.16***	-.08*	.04	.03	-.07	-.02	.01	-.18**	*.65	.48	0-1
3. U.S. Born ^b	-.16**	-.03	-	.09*	.04	-.07	-.23**	-.01	-.02	.02	-.03	-.02	.64	.48	0-1
4. Income	.01	-.12*	.08	-	-.13***	-.06	-.06	.01	.001	-.01	-.04	-.04	2.34	1.08	1-4
5. Ethnic Density	.02	-.04	-.03	-.04	-	-.07	-.15**	.04	.03	.001	.02	-.07	9.56	4.87	1-23
6. Denigration	-.03	-.09	-.09	-.09	-.15**	-	.58**	-.08*	-.02	.15***	.23***	.20**	*1.40	.58	1-4
7. FOB ^c	.04	-.03	-.29**	-.10	-.10	.57***	-	.05	-.004	.15***	.20***	.20**	*1.65	.65	1-4
8. Reappraisal	.04	-.01	-.03	-.004	.12*	-.11*	-.06	-	.38***	-.01	-.13**	-.16**	*18.70	4.63	0-28
9. Suppression	-.11*	-.15**	-.02	-.01	.05	.07	-.06	.22***	-	.21***	.12**	-.02	12.68	3.86	0-21
10. Depressive	-.06	.06	.04	-.06	.07	.21***	.15**	-.17**	.15**	-	.80***	.40**	*54.78	12.34	0-85
11. Anxiety	-.07	.09	.04	-.08	.04	.25***	.16**	-.22***	.13*	.83**	-	.43**	*42.38	16.14	0-90
12. Aggression	-.04	-.16**	.04	.01	.09	.26***	.15**	-.14*	.08	.42***	.48**	-	19.85	7.97	0-46
M	19.59	.72	.84	2.24	34.5	1.36	1.59	20.06	12.04	55.20	42.74	19.57			
SD	1.61	.45	.37	1.06	18.44	.55	.64	4.72	4.20	12.5	16.49	7.68			
Range	18-25	0-1	0-1	1-4	2-65	1-4	1-4	8-28	3-21	29-100	17-90	0-47			

* $p < .05$.

** $p < .01$.

^a Gender dummy coded as 0 = male, 1 = female.

^b U.S. Born dummy coded as 0 = U.S. born, 1 = foreign born.

^c FOB = foreigner objectification.

Table 3

Final model coefficients with full sample.

	Dependent Variables					
	Depressive symptoms		Anxiety		Aggression	
	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>
Age	.02	.59	.04	.20	.03	.37
Gender ^a	.05	.15	.06	.04	-.16	<.001
U.S. Born ^b	.07	.04	.06	.10	.06	.06
Income	-.01	.71	-.03	.29	-.03	.33
Ethnicity ^c	.02	.70	.03	.50	.03	.57
Ethnic Density	.09	.04	.09	.05	.09	.06
General Denigration	.13	.001	.19	<.001	.16	<.001
Foreigner Objectification	.11	.007	.10	.02	.12	.005
Cognitive Reappraisal	-.17	<.001	-.22	<.001	-.17	<.001
Expressive Suppression	.23	<.001	.19	<.001	.06	.09
Denigration × Reappraisal	.01	.89	.01	.84	-.06	.16
Denigration × Suppression	.04	.33	.02	.60	.04	.28
FOB ^d × Reappraisal	-.05	.24	-.04	.20	.02	.70
FOB × Suppression	.03	.39	.04	.36	.03	.40
Reappraisal × Suppression	-.03	.34	-.002	.95	-.004	.92
Denigration × Reappraisal × Suppression	-.10	.01	-.09	.02	-.11	.006
FOB × Reappraisal × Suppression	.01	.86	.01	.88	-.03	.35
<i>R</i> ²	.11		.11		.12	

^aGender dummy coded as 0 = male, 1 = female.

^bU.S. Born dummy coded as 0 = U.S. born, 1 = foreign born.

^cEthnicity dummy coded as 0 = Latino/a, 1 = Asian-heritage.

^dFOB = foreigner objectification.