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Discrimination and adjustment for Mexican American adolescents: A prospective examination of the benefits of culturally-related values

Cady Berkel¹, George P. Knight^{1,2}, Katharine H. Zeiders^{1,3}, Jenn-Yun Tein^{1,2}, Mark W. Roosa^{1,3}, Nancy A. Gonzales^{1,2}, and Delia Saenz^{1,2}

¹ Prevention Research Center, Arizona State University, Tempe, AZ

² Department of Psychology, Arizona State University, Tempe, AZ

³ School of Social and Family Dynamics, Arizona State University, Tempe, AZ

Abstract

Mexican American adolescents face disparities in mental health and academic achievement, perhaps in part because of discrimination experiences. However, culturally-related values, fostered by ethnic pride and socialization, may serve to mitigate the negative impact of discrimination. Guided by the Stress Process Model, the current study examined risk and protective processes using a 2-wave multi-informant study with 750 Mexican American families. Specifically, we examined two possible mechanisms by which Mexican American values may support positive outcomes in the context of discrimination; as a protective factor (moderator) or risk reducer (mediator). Analyses supported the role of Mexican American values as a risk reducer. This study underscores the importance of examining multiple mechanisms of protective processes in understanding Mexican American adolescent resilience.

Keywords

Mexican American; adolescents; discrimination; cultural values; ethnic socialization; ethnic pride; mental health; academic achievement; longitudinal

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Latino adolescents in the United States are at elevated risk for a variety of mental health and academic problems (Rumbaut, 1994). Mexican American adolescents, in particular, report higher levels of depressive symptoms (Hill, Bush, & Roosa, 2003), as well as externalizing behaviors (Gorman-Smith, Tolan, Henry, & Florsheim, 2000). Moreover, despite Mexican American families' emphasis on the value of school as an important pathway to success, Mexican American adolescents report lower academic self-efficacy (Fulgini, Witkow, & Garcia, 2005) and are more likely to drop out of school (Chavez, Oetting, & Swaim, 1994) than European American peers. Some have suggested that these elevated mental health and

Correspondence concerning this article should be addressed to Cady Berkel, Prevention Research Center, Arizona State University, 900 S McAllister Ave, Tempe, AZ 85287-6005, cady.berkel@asu.edu.

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academic risks are due in part to experiences of discrimination commonly reported by Mexican American adolescents, which have been linked to poor mental health and academic achievement (Coker, et al., 2009; Stone & Han, 2005). Nevertheless, many Mexican American adolescents have good mental health outcomes, are successful in school (Gonzales, Knight, Birman, & Sirolli, 2004), and often appear to be more resilient than one might expect given the stressors to which they are exposed (Escobar, Nervi, & Gara, 2000). One potential mechanism operating among Mexican American adolescents that may support this resilience is the socialization processes that lead to the internalization of culturally-related values associated with the ethnic group. Findings indicate that Mexican American values directly relate to positive outcomes (Gonzales, et al., 2008) and can buffer or attenuate the negative effects of additional stressors these youth experience (Umaña-Taylor & Updegraff, 2007). Given this, the present study examined the potential for the socialization of culturally-related values to mitigate the negative impact of discrimination on the mental health and academic outcomes of Mexican American adolescents.

The Impact of Discrimination

Discrimination is a key stressor for members of minority groups, which may contribute to persistent disparities across many important domains of adjustment (e.g., Berkel, et al., 2009; Coker, et al., 2009; Greene, Way, & Pahl, 2006; Walls, Chapple, & Johnson, 2007; Wong, Eccles, & Sameroff, 2003). National estimates indicate that 30% of Mexican American adults experience unfair treatment daily due to their ethnicity; these estimates reached 50% for the youngest cohort (18-24 year olds) studied (Pérez, Fortuna, & Alegría, 2008). Mexican American adolescents' experiences of discrimination have been negatively associated with both internalizing and externalizing mental health problems (Greene, et al., 2006; Romero, Martinez, & Carvajal, 2007; Romero & Roberts, 2003b; Smokowski & Bacallao, 2007) and academic outcomes (DeGarmo & Martinez, 2006; Stone & Han, 2005; Wayman, 2002). Because evidence of the impact of discrimination spans across many significant domains for adolescent adjustment, in both Mexican Americans and other minority groups, it could be a primary underlying cause of health and social disparities in this society. On the other hand, the expansiveness of these effects may be artificial, as previous research has generally limited its focus to a single outcome, and thus has not taken the possible biasing influence of comorbidity into account, even though many of the outcomes are plainly correlated (e.g., Gorman-Smith, et al., 2000; Manongdo & Ramírez García, 2007). To reduce the possibility of spurious associations, a call has been made to examine the general versus specific outcomes of psychosocial risk factors like discrimination (McMahon, Grant, Compas, Thurm, & Ey, 2003; Shanahan, Copeland, Costello, & Angold, 2008). Thus, in the current study, we simultaneously examined the impact of discrimination on the multiple domains of adjustment in Mexican American adolescents. Moreover, in a secondary analysis, we took an underutilized approach in modeling study outcomes as a latent variable to understand the effects of discrimination on comorbidities and on specific outcomes.

Benefits of Mexican American Values

Although evidence for the impact of discrimination on Mexican American adolescent mental health and academic achievement is accumulating, we still know little about processes that support positive adjustment (Romero & Roberts, 2003b), despite the many Mexican American adolescents who are successfully coping with discrimination (Edwards & Romero, 2008). Frequently noted is the protective nature of Mexican nativity for Mexican American adolescents. Contrary to assumptions, adolescents born in Mexico have lower rates of mental health problems than those born in the United States, a phenomenon that has become known as the "Mexican American paradox" (Escobar, et al., 2000). Rather than nativity per se, the underlying mechanism associated with the "Mexican American paradox"

may actually be the elements of culture that are attached to nativity; that is, those adolescents originating in Mexico retain their ties to the protective elements of their native culture, while those born in the United States are less connected to such values (Gonzales, et al., 2008).

The internalization of values rooted in Mexican culture, such as familism, respect for elders, and religiosity, are thought to enhance mental health and academic achievement by nurturing strong ties, deference, and a sense of obligation to family members and other prosocial adults, thus enabling the shaping of youth behavior in accordance with socially accepted conduct (Coohey, 2001; Gonzales, et al., 2008). Such values have been associated with better academic grades, and lower rates of internalizing and externalizing problems among Latinos (Benjet, et al., 2007; Coatsworth, et al., 2002; Coonrod, Balcazar, Brady, Garcia, & Van Tine, 1999; Esparza & Sánchez, 2008; Fuligni, Tseng, & Lam, 1999; Romero & Ruiz, 2007; Smokowski & Bacallao, 2007; Unger, et al., 2002). Gonzales and colleagues (2008) investigated whether these culturally based values mediated the established relation between nativity and mental health, and found that relations between nativity and both externalizing and academic engagement were indeed explained by decreases in Mexican American values for US born adolescents. Thus, we suggest that Mexican American values are a source of resilience supporting academic achievement and mental health outcomes in contexts of discrimination.

Given the positive effects of Mexican American values, it is important to consider how they may be maintained in a context marked by discrimination and acculturative pressure; the answer may lie in aspects of ethnic identity and familial ethnic socialization practices. High levels of ethnic identity amongst Mexican American adolescents have been shown to be associated with increases in familism values over time (Baer & Schmitz, 2007). Importantly, attachment to the ethnic group, including being proud of ethnic group membership, may be a critical feature of ethnic identity for the endorsement of culturally-related values among Mexican American adolescents because this sense of self as a member of the ethnic group makes the adolescent receptive to the enculturative socialization efforts of the family (Armenta, Knight, Carlo, & Jacobson, 2008). The contribution of socialization about cultural heritage (i.e., enculturation) to the development of ethnic identity has been well established for several ethnic minority groups (Cheshire, 2001; Murry, Berkel, Brody, Miller, & Chen, 2009; Umaña-Taylor, Bhanot, & Shin, 2006). Parents' socialization practices are thought to be critically important for fostering a sense of ethnic belonging, ethnic pride, and values in Mexican American children and to protect them from potentially marginalizing experiences such as discrimination (Umaña-Taylor, Alfaro, Bámaca, & Guimond, 2009). Socialization messages that transmit culture, increase pride, and teach about equality are associated with positive outcomes for Mexican American adolescents (Huynh & Fuligni, 2008), perhaps through the development of a sense of positive regard, affiliation, and pride for their cultural group (Kiang, Yip, Gonzales-Backen, Witkow, & Fuligni, 2006). We submit that ethnic socialization messages will lay the foundation for the development of a strong sense of ethnic pride amongst adolescents, which will in turn enable them to retain their cultural values over time.

Application of the Stress Process Model

Because the study of the utility and functional nature of culturally-related values is in its infancy, it remains unclear how Mexican cultural values might reduce the likelihood of developing mental health and academic problems in the face of repeated discrimination experiences. The Stress Process Model (Roosa, Wolchik, & Sandler, 1997; see Figure 1) emphasizes the importance of understanding the sequence of events from stressor to outcome to the development of impactful preventive interventions. The model classifies processes as protective factors (moderators) or risk reducers (mediators). As a protective

factor, Mexican American values would attenuate the impact of discrimination on mental health and academic outcomes. Umaña-Taylor and Updegraff (2007) found that Mexican American cultural orientations moderated the relations between discrimination and both depression and self-esteem for boys, such that when traditional Mexican values were low, discrimination was associated with higher depression and lower self-esteem. In contrast, when values were high, discrimination was not significantly associated with depression or self-esteem. These results suggest that cultural values of Mexican American adolescents may be operating as protective factors by attenuating the effects of stressors on negative outcomes. While this is the only study examining the moderating role of Mexican American values on the influences of discrimination, others (Finch, Kolody, & Vega, 2000) found that related cultural variables, such as language and nativity, moderated the relationship between discrimination and depression among Mexican Americans. Furthermore, research with African Americans has demonstrated the moderating roles of racial identity and racial socialization, in addition to cultural values, including community orientation and spirituality, in the association between discrimination and mental health (Caldwell, Kohn-Wood, Schmeelk-Cone, Chavous, & Zimmerman, 2004; Fischer & Shaw, 1999; Scott, 2003; Wong, et al., 2003).

Alternatively, the Stress Process Model suggests that protective processes may function as risk reducers, which mediate the relation between a stressor and outcomes (Roosa, et al., 1997). As a risk reducer, Mexican American values would have a positive effect on mental health and academic outcomes (Esparza & Sánchez, 2008; Smokowski & Bacallao, 2007). Further, if discrimination experiences promote racial/ethnic identity development as some authors have suggested (Cross, Parham, & Helms, 1991; Pahl & Way, 2006), and if this greater endorsement of racial/ethnic identity fosters the internalization of culturally-related values (Armenta, et al., 2008), discrimination may encourage the internalization of Mexican American values that in turn promote positive mental health and academic outcomes. Although limited support for this perspective exists because possible associations between discrimination and Mexican American values have been given scant attention in the literature, Romero and Roberts (1998) found a positive relation between perceptions of discrimination and ethnic identity achievement (exploration). Another study found that discrimination was negatively correlated with familism, although this path was not significant in the overall model testing multiple cultural influences on familism and externalizing (Smokowski & Bacallao, 2006). The current study is the first examination of whether cultural values act as a risk reducer, mediating the relationship between discrimination and mental health and academic outcomes for Mexican American adolescents. We hypothesized that discrimination will result in an increase in Mexican American values, which in turn will be associated with increases in mental health and academic outcomes.

The Current Study

In the current prospective study, we sought to determine how discrimination and Mexican American values influence adolescent mental health and academic outcomes over time. We predicted that discrimination would be associated with an increase in mental health and academic problems. However, the means by which positive cultural values might be beneficial for adolescent adjustment have not been established. Thus, we tested two possible mechanisms, as suggested by the Stress Process Model: cultural values as a moderator and as a mediator. Moreover, previous research suggests that ethnic socialization lays the foundation for the development of ethnic pride and, in turn, may foster higher levels of protective Mexican American values (Umaña-Taylor, et al., 2009). Hence, we also considered how mothers' ethnic socialization and adolescents' ethnic pride might serve to maintain positive cultural values despite the negative impact of acculturative pressures

associated with discrimination experiences. Finally, we examined the specific and general effects of discrimination on mental health and academic outcomes by testing a model that controls for comorbidities.

Method

Participants

Data for this study come from the first and second waves of an ongoing longitudinal study investigating the role of culture and context in the lives of Mexican American families (Roosa, et al., 2008). Participants were 750 Mexican American students and their families who were selected from rosters of schools that served ethnically and linguistically diverse communities in a large southwestern metropolitan area. Eligible families met the following criteria: (a) they had a fifth grader attending a sampled school; (b) both mother and child agreed to participate; (c) the mother was the child's biological mother, lived with the child, and self-identified as Mexican or Mexican American; (d) the child's biological father was also reported to be of Mexican origin; (e) the child was not severely learning disabled; and (f) no step-father or mother's boyfriend was living with the child (unless the boyfriend was the biological father of the target child). Although participation was optional for fathers, 460 (81%) fathers from the 570 two-parent families in the study also participated.

At Time 1, 22.9% were single-parent families and 77.1% were two-parent families. In contrast to the majority of previous studies of Mexican American families, this sample was diverse on both SES indicators and language (Roosa, et al., 2008). Family incomes ranged from less than \$5,000 to more than \$95,000, with the average family reporting an income of \$30,000 - \$35,000. In terms of language, 30.2% of mothers, 23.2% of fathers, and 82.5% of adolescents were interviewed in English. The mean age of mothers in our study was 35.9 ($SD = 5.81$) and mothers reported an average of 10.3 ($SD = 3.67$) years of education. The mean age of fathers was 38.1 ($SD = 6.26$) and fathers reported an average of 10.1 ($SD = 3.94$) years of education. The mean age of adolescents (48.7% female) was 10.42 ($SD = 0.55$). A majority of mothers and fathers were born in Mexico (74.3%, 79.9% respectively), while a majority of adolescents were born in the US (70.3 %).

At Time 2, approximately two years after Time 1 data collection, 711 families were re-interviewed, when most students were in the 7th grade. Of the 39 families missing at Time 2, 16 refused to participate. Families who participated in Time 2 interviews were compared to families who did not participate in Time 2 interviews on several Time 1 demographic variables and no differences emerged on child (i.e., gender, age, generational status, language of interview), mother (i.e., marital status, age, generational status), or father characteristics (i.e., age, generational status).

Procedure

Mothers (required), fathers (optional), and children (required) participated in in-home Computer Assisted Personal Interviews, scheduled at the family's convenience. Interviews were about 2.5 hours long. Cohabiting family members' interviews were conducted concurrently by trained interviewers in different locations at the participants' home. Each interviewer received at least 40 hours of training which included information on project's goals, characteristics of the target population, the importance of professional conduct when visiting participants' homes as well as throughout the process, and the critical role they would play in collecting the data. Interviewers read each survey question and possible response aloud in participants' preferred language to reduce problems related to variations in

literacy levels. Families were compensated \$45 and \$50 per participating family member at Time 1 and 2, respectively.

Measures

Discrimination—Adolescents responded to nine items designed to assess discrimination experiences from peers and teachers. Because no measure of discrimination for Mexican Americans was available at the time of this study's development, three measures that had been validated for other groups [Hughes and Dodge (1997): Racism in the Workplace Scale; Landrine and Klonoff (1996): Schedule of Racist Events; and Klonoff and Landrine, (1995): Schedule of Sexist Events] were adapted to our population. The 4 peer items (e.g., “How often have kids at school called you names because you are Mexican American?”) and 5 teacher items (e.g., “How often have you had to work harder in school than White kids to get the same praise or the same grades from your teachers because you are Mexican American”) relied upon a Likert-type response scale ranging from (1) *Not at all true* to (5) *Very true*. Items reflected both personal experiences of discrimination and public regard. Cronbach's α was .78 at both Time 1 and Time 2.

Mexican American values—The Mexican American Cultural Values Scale (Knight, et al., in press) was used to assess Mexican American values. The scale was developed based upon focus groups conducted with Mexican American mothers, fathers, and adolescents about Mexican American and Anglo American cultures. The current study used 5 subscales from this measure to assess adolescents' Mexican American values: *supportive and emotional familism* (6 items, e.g., “parents should teach their children that the family always comes first”); *obligation familism* (5 items, e.g., “if a relative is having a hard time financially, one should help them out if possible”); *referent familism* (5 items, e.g., “a person should always think about their family when making important decisions”); *respect* (8 items, e.g., “children should always be polite when speaking to any adult”); and *religiosity* (7 items, e.g., “parents should teach their children to pray”). Adolescents responded to items using a Likert-type scale ranging from (1) *not at all* to (4) *Very much*. Cronbach's α was .87 at Time 1 and .90 at Time 2 (for further details about the results of CFA and the Cronbach's α s by broken down by subscale and total familism, see Knight, et al., in press).

Ethnic socialization—Ethnic socialization was assessed with an adaptation of the 10-item Ethnic Socialization Scale from the Ethnic Identity Questionnaire developed by Bernal and Knight (1993). Using mothers report, the scale assesses the extent to which mothers socialized children into Mexican culture. A sample item asked how often mothers “tell [target child] that the color of a person's skin does not mean that person is better or worse than anyone else?” and “take [target child] to Mexican celebrations like Quinceñeras, Mexican weddings, or baptisms?” Responses ranged from (1) *almost never or never* to (4) *a lot of the time/frequently*. Cronbach's α was .76.

Ethnic pride—A 4-item scale, developed for the current study and pilot tested with a sample of 162 Mexican American adolescents (Thayer, Valiente, Hageman, Delgado, & Updegraff, 2002), assessed ethnic pride for Mexican Americans. Adolescents were asked to rate how much they agreed or disagreed with each item (e.g., “You feel proud to see Latino actors, musicians and artists being successful”) with responses ranging from (1) *not at all true* to (5) *very true* (5). Cronbach's α was .71.

Adolescent symptoms of conduct disorder, oppositional defiant disorder, anxiety and depression—We used the computerized version of the Diagnostic Interview Schedule for Children (DISC-IV), a structured diagnostic instrument designed for use by nonclinicians, to assess child mental health symptomatology (Shaffer, Fisher, Lucas,

Dulcan, & Schwab-Stone, 2000). The DISC-IV can be used to assess psychiatric symptoms/diagnoses that occur in children and adolescents using DSM-IV (American Psychiatric Association, 1994) and ICD-10 (World Health Organization, 1993) criteria. The DISC was originally developed in 1979 and has been successfully translated into Spanish according to psychometric work done in Puerto Rico (Bravo, et al., 2001). Adolescents' respond to a series of modules that assess symptoms counts. For the current study we relied on counts of the following symptoms: conduct disorders (CD), oppositional defiant disorders (ODD), anxiety, and depression.

Academic self-efficacy—Adolescents' reports on academic self-efficacy were assessed using the Patterns of Adaptive Learning Survey (Midgley, Maehr, & Urdan, 1996). Items are not specific to subject matter or tasks but they are specific to students' classroom experiences, (e.g., "I am certain I can master the skills taught in school this year"). Students respond to the 6 items with options ranging from (1) *Not at all true* to (5) *Very true*. Cronbach's α s were .75 and .79 at Time 1 and Time 2, respectively.

Academic achievement—To assess academic performance, we relied on teacher reports. Specifically, math and English teachers were asked, "If you were giving final grades today, what grade would this student receive in your course?" Teachers responses (1) *A* to (5) *E/F* were averaged to compute one score. This academic achievement outcome score was only available in the Time 2 assessments.

Analytic Plan

Analyses were conducted using SEM with the full information maximum likelihood estimation procedures available in Mplus Version 5.1 (Muthén & Muthén, 2008), unless otherwise noted. In all models, discrimination (peer and teacher subscales), Mexican American values (familism-support, familism-obligation, familism-referent, respect, and religiosity subscales), internalizing (anxiety and depression), and externalizing (conduct disorder and oppositional defiant disorder) were treated as latent variables. The remaining variables (ethnic socialization, ethnic pride, academic self-efficacy, and grades) were treated as observed variables.

Because cross-sectional data has led to controversies in the literature on direction of effects for discrimination and outcomes such as mental health and cultural affiliation (e.g., Phinney, Madden, & Santos, 1998; Romero & Roberts, 2003a; Ruggiero, Taylor, & Lambert, 1996), it was necessary to conduct preliminary analyses to evaluate the direction of these effects. We conducted a series of four cross-lag models to evaluate the direction of effects between discrimination and 1) Mexican American values, 2) internalizing, 3) externalizing, and 4) academic self-efficacy. Because grades were not collected at Time 1 we did not conduct a cross-lag model between discrimination and grades. However, because adolescents' teachers were different in Time 1 and Time 2, we would not expect that grades at Time 1 would influence discrimination at Time 2. For each of the other four variables related to discrimination, we compared a model in which the cross-lag paths were constrained to be equal to a model in which the cross-lag paths were free to vary. A significant difference in model fit would indicate that the strengths of the cross-lag relations were unequal and suggest the direction of causality (Brody, et al., 2006). In addition, because nativity may be related to these variables, we examined all of these associations by child birthplace (U.S. or Mexico), using multiple group analyses in Mplus. If nativity was found to moderate any of the associations, we planned to include nativity in the main analyses.

In the two main analysis models assessing the beneficial role of Mexican American values, i.e., as a protective factor (i.e., moderation) or as a risk reducer (i.e., mediation), multiple fit

indices (CFI, RMSEA, and SRMR) were used to evaluate the extent to which the model fit the data because no single indicator is unbiased in all analytic conditions. We considered good (acceptable) model fit as indicated by a SRMR $\leq .05$ (.08) and either a RMSEA $\leq .05$ (.08) or a CFI $\geq .95$ (.90) because simulation studies revealed that using this combination rule resulted in low Type I and Type II error rates (Hu & Bentler, 1999). Time 1 levels of the outcome variables (except for teacher reports of adolescents' grades) were included in both models to enable the prediction of change over time. In addition, because academic self-efficacy is a known predictor of achievement (Buriel, Perez, De Ment, Chavez, & Moran, 1998), we also included a path from academic self-efficacy to grades for both models.

In the "protective factor" model testing moderation effects, we created an interaction with the discrimination and Mexican American values latent variables at Time 1 (Klein & Moosbrugger, 2000). A significant direct path from the interaction term to the outcomes would indicate the presence of moderation and would be probed by a multiple group analysis examining the relationships between discrimination and outcomes at different levels of Mexican American values. In the "risk reducer" model testing mediation, we used bias corrected bootstrap confidence intervals to assess the significance of the standardized indirect effects (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Taylor, MacKinnon, & Tein, 2008). Mediation is considered significant when the 95% CI does not encompass zero.

Finally, given the importance of unraveling the potential bias introduced by comorbidity effects and that similar studies show variables addressed in this paper to be highly correlated (Lewinsohn, Zinbarg, Seeley, Lewinsohn, & Sack, 1997), the current study applied latent variable structural models to separate specific from general effects as suggested by Bentler (1990). In this approach, comorbidity is treated as a single latent construct, with adolescent mental health outcomes (anxiety, depression, conduct disorder, and oppositional defiant disorder) as indicators. The path from the predictors to the latent construct represents the effect on the comorbidity of the disorders; additional paths from the predictors to each of the indicators represent predictors' effects on the specific disorders, after accounting for comorbidity.

Results

Preliminary Analyses

Table 1 presents the correlations, means, and standard deviations for all study variables, calculated in SPSS 16.0. In general, experiences of discrimination were associated with poorer mental health and academic outcomes. Ethnic socialization was positively associated with ethnic pride. Adolescents with high levels of ethnic pride also highly endorsed Mexican American values and reported more positive academic outcomes. Mexican American values at Time 2 were associated with lower externalizing symptoms. Finally, the mental health and academic outcomes were related, with externalizing and internalizing symptoms positively associated with one another, and negatively associated with academic outcomes.

In Figure 2, we present the results of the first of a series of cross-lag models in which we compared the cross-lag pathways between discrimination and Mexican American values. All factor loadings were significant and above .50, indicating the adequacy of the measurements. The unconstrained model fit significantly better than the model in which the two paths were constrained to be equal ($\Delta\chi^2 = 3.94$, $df = 1$, $p \leq .05$). This indicated that the standardized, unconstrained path from Time 1 discrimination to Time 2 Mexican American values ($\beta = .15$, $p \leq .001$) was significantly stronger than the path from Time 1 Mexican American values to Time 2 discrimination ($\beta = .00$, ns), suggesting that discrimination was

likely producing changes in Mexican American values, rather than the reverse. Similar preliminary cross-lag analyses were conducted for internalizing, externalizing, and academic self-efficacy. For internalizing, the change in χ^2 ($\Delta\chi^2 = 9.25$, $df = 1$, $p \leq .01$) was again significant, indicating a worse fit of the constrained model, with the path from discrimination to internalizing ($\beta = .19$, $p \leq .01$) significantly stronger than the path from internalizing to discrimination ($\beta = -.12$, ns). For externalizing, the change in χ^2 ($\Delta\chi^2 = 0.04$, $df = 1$, $p > .10$), indicating that the paths were equal in magnitude. Finally, for academic self-efficacy, the change in χ^2 ($\Delta\chi^2 = 9.66$, $df = 1$, $p \leq .01$) between the nested model indicates worse fit, again with the path from discrimination to academic self-efficacy ($\beta = -.13$, $p \leq .01$) significantly stronger than the opposite path from self-efficacy to discrimination ($\beta = -.02$, ns). Thus, in all cases, except externalizing where the paths were equal, Time 1 discrimination was the driver of the relations with Time 2 outcomes. Next, we conducted a multiple group analysis to examine child nativity as a possible moderator of the relations in each of these models. Given that we found no differences in associations for those born in the United States and those born in Mexico, we did not include nativity in either the protective factor or risk reducer models.

Test of Protective Factor Effects

To test whether Mexican American values served as a protective factor, we examined a model in which these culturally based values moderated the relationships between adolescent experiences of discrimination and each of the study outcomes: internalizing, externalizing, academic self-efficacy, and teacher reported grades. The model included direct paths from the discrimination and Mexican American values latent constructs to the adolescent outcomes; from ethnic socialization and ethnic pride paths to Mexican American values; and from the discrimination-by-Mexican American values interaction term to adolescent adjustment. In addition, to incorporate the formation of Mexican American values as part of the protective process, the model included paths from ethnic socialization to ethnic pride to Mexican American values. We also controlled for Time 1 levels of internalizing, externalizing, and academic self-efficacy (grades were not collected at Time 1). Fit indices did not support the role of Mexican American values as a protective factor [χ^2 (536) = 2418.72, $p \leq .01$; CFI = .76; and RMSEA = .07]. Further, none of the pathways from the interaction construct to outcomes were significant, indicating that Mexican American values did not moderate (i.e., serve as a protective factor) the relation between discrimination and declines in mental health or academic outcomes.

Test of Risk Reducer Effects

To test whether Mexican American values served as a risk reducer, we examined a model in which these culturally based values mediated the relations between discrimination and changes in adolescent outcomes (see Figure 3). The model included direct paths from Time 1 discrimination to the proposed study outcomes at Time 2 (internalizing, externalizing, academic self-efficacy, and teacher reported grades), controlling for Time 1 outcomes (except for teacher reported grades), and mediated paths from Time 1 discrimination to Mexican American values at Time 2 (controlling for Time 1 Mexican American values) to the outcomes at Time 2. As described in the protective factor model, we incorporated paths from ethnic socialization to ethnic pride to Mexican American values. Fit indices demonstrated support for the model [χ^2 (238) = 666.82, $p \leq .001$; RMSEA = .05 (.04-.05); CFI = .93; and SRMR = .05].

Standardized coefficients demonstrated that Mexican American values produced a compensating effect for the negative impact of discrimination experiences on mental health and academic outcomes. In addition, both the socialization pathways and discrimination were independently associated with an increase in Mexican American values from Time 1 to

Time 2. Mexican American values, in turn, predicted improvements in internalizing, externalizing, and academic self-efficacy (controlling for respective Time 1 scores). The test of the mediated effects using bias corrected bootstrap confidence intervals (MacKinnon, et al., 2002) were significant for externalizing (95% CI: $-.05, -.002$), internalizing (95% CI: $-.03, -.004$), academic self-efficacy (95% CI: $.01, .09$), and grades (95% CI: $.002, .03$) supporting the role of Mexican cultural values as a risk reducer. As expected, ethnic socialization at Time 1 predicted ethnic pride at Time 2, which was associated with a change in Mexican American values from Time 1 to Time 2. The mediated effect of ethnic pride also was significant (95% CI: $.01, .02$). For example, to calculate the mediated effect from discrimination to academic self-efficacy, through Mexican American values, one would multiply the coefficient of the path between discrimination and Mexican American values (i.e., $.13$) by the coefficient of the path between Mexican American values and self-efficacy (i.e., $.40$), producing a mediated effect of $.05$. The direct effect of discrimination on self-efficacy is $-.19$. Because of the inconsistent mediation (i.e., the combination of positive and negative paths coefficients), combining the direct and mediated effects results in a total effect ($-.14$) that is smaller in magnitude than the direct effect. In this case, the mediated effect of Mexican American values reduces the negative effects of discrimination by roughly one quarter of the direct effect. Also note that this mediation represents the enhancement of each related outcome independent of the positive effects of the socialization effects.

Results of the comorbidity analyses showed that the model fit the data adequately [$\chi^2(248) = 673.76, p \leq .001$; RMSEA = $.05 (.04-.05)$; CFI = $.92$; and SRMR = $.06$]. Time 2 Mexican American values had a significant negative effect on the comorbidity factor ($\beta = -.15, p \leq .005$) but the effect of Time 1 discrimination on the comorbidity factor was not significant ($\beta = .06, ns$). The path coefficients between the other predictors, mediators, and outcomes were consistent with those shown in Figure 3 with at most $.01$ to $.02$ differences. After accounting for comorbidity, we examined the specific effects from Time 1 discrimination and Time 2 Mexican American values to the two internalizing indicators (anxiety and depression), and the specific effects to the two externalizing indicators (CD and ODD symptoms). As Bentler (1990) suggested, to avoid the parameter identification issue, we examined the specific effects to internalizing and to externalizing indicators separately. The results showed that the experience of discrimination, but not Mexican American values, had specific effects on anxiety and depression ($\beta = .27, p \leq .01, \beta = .11, p \leq .05$, respectively). On the other hand, Mexican American values, but not the experience of discrimination, had specific effects on conduct disorder and oppositional defiant disorder ($\beta = -.15, p \leq .001, \beta = -.09, p \leq .05$, respectively).

Discussion

Despite a large and growing population of Mexican Americans in the United States in general, and the southwestern states in particular (US Census Bureau, 2008), discrimination endures, as is evident in reports of racial profiling by some police (González, 2008) and an active civilian border militia with the motto “come get some” (Holthouse, 2005). Because such discrimination still exists, and may contribute to disparities across health and social domains for Mexican Americans, it is critical to understand the risk processes underlying the experience of discrimination. Furthermore, given the potential impact of such disparities, a better understanding of the potential protective processes that may alleviate these risks could provide valuable information for the development of preventive interventions to mitigate the negative effects of stressors such as discrimination (Roosa, et al., 1997).

Consistent with the developing literature (DeGarmo & Martinez, 2006; Gee, Ryan, Laflamme, & Holt, 2006), we found a strong link between experiences with discrimination and negative mental health and academic outcomes in a diverse and relatively representative

sample of Mexican American adolescents. However, the previous literature has provided mixed interpretations of the direction of this relationship with some authors suggesting that those with poor mental health are more likely to perceive ethnicity-related discrimination (e.g., Phinney, et al., 1998) and others suggesting that discrimination experiences lead to negative mental health and academic outcomes (e.g., DeGarmo & Martinez, 2006; Umaña-Taylor & Updegraff, 2007). Unfortunately, this developing literature has been based almost exclusively upon the examination of the relations between discrimination and mental health and academic outcomes at a single point in time, and as such has not permitted analyses that could provide evidence about the causal direction of this relation. Results from our prospective, cross-lag analyses provided some empirical support for the suggestion that discrimination leads to worsening mental health and academic achievement over time. In addition, results from our comorbidity analyses suggest that discrimination has specific and unbiased effects on these outcomes.

Seeking to discover sources of resilience amongst Mexican American adolescents in the context of discrimination, we considered the protective influence of the ethnic socialization and the internalization of Mexican American values (Gonzales, et al., 2004). Evidence is beginning to accumulate that culturally-related values are important for adolescent mental health and academic outcomes (Gonzales, et al., 2008; Smokowski & Bacallao, 2007). Indeed, we found that adolescents who experience more ethnic socialization from their parents, report more pride in their ethnic group and greater endorsement of Mexican American values. In turn, these Mexican American values were associated with a reduced risk of negative mental health symptoms over time and increases in academic self-efficacy. Further, this increase in academic self-efficacy was associated with higher teacher reported grades. The familism, respect, and religiosity values assessed by our index of Mexican American values may foster resilience by promoting strong bonds to the family and other community members (Gonzales, et al., 2008). Indeed, Armenta and colleagues (2008) found that familism values explained the link between ethnic identity and prosocial behaviors towards others. This interconnectedness may serve to regulate adolescents' acting out behaviors in response to stressors. That these values are more associated with behavioral manifestations, rather than alleviating internal symptoms of depression and anxiety has important implications for the study of specificity of predictors on outcomes and should be examined further in future studies.

Our findings provide support for Mexican American values as a risk reducer, rather than a protective factor, to counteract the effects of discrimination on internalizing and academic outcomes. That is, in addition to the socialization effects leading to the greater endorsement of Mexican American values, adolescents who experienced more discrimination also endorsed Mexican American values to a greater extent, which in turn was associated with positive changes in mental health and academic self-efficacy. The lack of support for moderation in the current study is in contrast to previous research with Mexican American and other ethnic minority groups (Caldwell, et al., 2004; Fischer & Shaw, 1999; Scott, 2003; Umaña-Taylor & Updegraff, 2007; Wong, et al., 2003). However, there are several features of our research that strongly support the validity and generalizability of our findings. First, our findings are based on a very diverse, representative, and stratified random sample of Mexican American families from a large metropolitan area. We conducted a stratified sampling of schools and randomly sampled students within those school. In addition, the longitudinal, prospective design of our study allowed us to model changes in mental health and academic outcomes over a substantial time period. Moreover, concurrent moderation is not necessarily inconsistent with the longitudinal changes in mental health and academic outcomes being mediated by changes in Mexican American values.

Our findings are consistent with theories suggesting that cultural affiliation is a coping mechanism prompted by experiences with discrimination. That such adaptation occurs in the context of a major stressor fits well within classic definitions of resilience (Luthar, Cicchetti, & Becker, 2000), such that encountering the stressor leads to more positive outcomes than would be expected. Moreover, the finding that adolescents can respond resiliently when confronted by discrimination has been echoed in research with African American adolescents (Berkel, et al., 2009), where incidents that produce awareness about race and ethnicity are the primary means by which identity development is thought to occur (Cross, et al., 1991). Discrimination events often lead adolescents to explore their group membership (Pahl & Way, 2006). As a result, they may become further embedded and take pride in their ethnic communities; which may foster the emic values that mitigate the negative effects of discrimination. Although the current prospective design goes beyond previous research in the ability to test directional hypotheses, future research should track trajectories of discrimination, Mexican American values, and adolescent adjustment over a greater time period to enable more definitive conclusions about casual directions.

This study emphasized the importance of Mexican American values in reducing the negative influence of discrimination for adolescents, which has important implications for both prevention and policy. Related to prevention programming, the present findings suggest that programs designed to improve the health and academic outcomes of Mexican American adolescents should include modules that fortify Mexican American values. In addition, because of the primacy of the family in the socialization of these values, it would also follow that family based prevention may be especially relevant in this population (Murry, Berkel, Pantin, & Prado, under review). Parenting programs seeking to encourage resilience amongst adolescents, moreover, should also include an emphasis on the importance of parents practicing ethnic socialization with their children. Furthermore, prevention programs for marginalized groups must invest high levels of time and resources into undoing the negative effects of racism (e.g., Murry, Berkel, Brody, Gerrard, & Gibbons, 2007). A more efficient and equitable approach might be large scale programs to reduce the prejudice and discrimination that maintains disparities among children and families.

Relating to the policy domain, many regulations have been developed under the assumption that socializing minority children into the majority culture while discouraging the retention of traditional values and lifestyles is the best way to support their well-being and the well-being of society. However, efforts to encourage the use of English at the cost of Spanish (Barker, et al., 2001) and to adopt mainstream US values, for example, may inadvertently push children away from the cultural values that appear to be protecting them (Gonzales, et al., 2008). On the other hand, while we present solid evidence for the negative impact of teacher discrimination, there are no large scale training efforts to enable teachers to appreciate diversity and incorporate cultural strengths into curriculums, thereby reducing this source of risk. In fact, policies that limit Spanish speaking in schools may actually increase the discrimination to which adolescents and their parents are exposed. As a result, the current political climate associated with the immigration of persons from Mexico and other nearby countries appears to be increasing the likelihood that Mexican Americans will experience discrimination, a risk factor, while simultaneously reducing the beneficial mechanisms such as traditional cultural values for adolescents. The continuation of such policies likely would perpetuate the Mexican American paradox and should not be supported in light of the demonstrated the importance of culturally based values in reducing risks to Mexican American youth as a result of discrimination.

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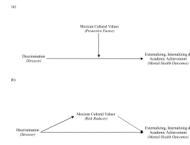


Figure 1.
Cultural Values as a Protective Factor (a) and as a Risk Reducer (b).



Figure 2.
Discrimination and Mexican Cultural Values: Direction of Effects.



Figure 3.
A Test of Mexican American Values as a Risk Reducer.

Table 1

Correlations, Means, and Standard Deviations for All Study Variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Discrimination T1	-													
2. Discrimination T2	.33***	-												
3. Ethnic Socialization T1	.02	.07+	-											
4. Ethnic Pride T1	-.04	.03	.13***	-										
5. Ethnic Pride T2	-.02	.00	.19***	.29***	-									
6. Mexican American Values T1	.01	.05	-.03	.52***	.14***	-								
7. Mexican American Values T2	.08*	.04	.03	.18***	.41***	.32***	-							
8. Externalizing T1	.14***	.13***	-.01	-.02	-.03	-.05	-.10***	-						
9. Externalizing T2	.06+	.28***	.00	.04	-.05	.04	-.18***	.39***	-					
10. Internalizing T1	.30***	.16***	.01	-.08*	-.02	.01	-.01	.30***	.15***	-				
11. Internalizing T2	.22***	.27***	-.03	-.04	-.04	.01	-.02	.18***	.41***	.41***	-			
12. Academic Self-Efficacy T1	-.07*	-.04	.04	.38***	.14***	.40***	.26***	-.14***	-.07+	-.11**	-.08*	-		
13. Academic Self-Efficacy T2	-.12**	-.10*	.04	.20***	.27***	.14***	.41***	-.11**	-.17***	-.07+	-.11**	.40***	-	
14. Grades	-.17***	-.17***	.03	.13***	.07+	.05	-.01	-.14***	-.13***	-.07+	-.12**	.17***	.26***	-
Means	14.9	13.2	17.3	4.3	4.5	140.0	135.0	1.7	2.7	17.7	14.4	26.2	25.3	2.6
Standard Deviations	5.8	4.8	3.9	0.7	0.6	10.2	11.9	2.4	3.2	12.0	10.1	3.4	3.8	1.2

Note. Externalizing: Conduct Disorder & Oppositional Defiant Disorder; Internalizing: Depression & Anxiety