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Kimberly A. Updegraff
Arizona State University, kimberly.updegraff@asu.edu

Adriana J. Umana-Taylor
Arizona State University

Susan M. McHale
The Pennsylvania State University

Lorey A. Wheeler
University of Nebraska - Lincoln, lorey@unl.edu

Norma Perez-Brena
Arizona State University

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Mexican-Origin Youth's Cultural Orientations and Adjustment: Changes from Early to Late Adolescence

Kimberly A. Updegraff[a], **Adriana J. Umaña-Taylor**[a], **Susan M. McHale**[b], **Lorey A. Wheeler**[a], and **Norma Perez-Brena**[a]

[a]Arizona State University

[b]The Pennsylvania State University

Abstract

Drawing from developmental and cultural adaptation perspectives and using a longitudinal design, this study examined: (a) mean-level changes in Mexican-origin adolescents' cultural orientations and adjustment from early to late adolescence; and (b) bidirectional associations between cultural orientations and adjustment using a cross-lag panel model. Participants included 246 Mexican-origin, predominantly immigrant families that participated in home interviews and a series of nightly phone calls when target adolescents were 12 years and 18 years of age. Girls exhibited more pronounced declines in traditional gender role attitudes than did boys, and all youth declined in familism values, time spent with family, and involvement in Mexican culture. Bidirectional relations between cultural orientations and adjustment emerged, and some associations were moderated by adolescent nativity and gender.

Keywords

adolescence; adjustment; culture; immigrant youth; Mexican American

Cultural adaptation and individual development involve simultaneous and interrelated processes of change for immigrant youth living in the US (Fuligni, 2001; Sam, 2006). Longitudinal investigations that examine *changes* in both cultural adaptation *and* youth development and well being are rare, however. In this study, we contribute to research on Mexican immigrant children, the largest group of immigrant children in the nation (Bergad & Klein, 2010), through our examination of immigrant versus US-born Mexican-origin youth's cultural orientations and adjustment from early to late adolescence. Using a comparative longitudinal design (Fuligni, 2001), we investigate whether different patterns of change in youth's cultural orientations and adjustment emerge for Mexican-origin immigrant versus US-born youth and whether cultural orientation-adjustment linkages differ for these two groups. We adopted this comparative approach in an effort to identify developmental processes that may be unique to immigrant youth to advance understanding of the development of Mexican-origin adolescents.

The second decade of life is an important period of change in cultural orientations and adjustment. As a result of biological, cognitive, and social maturation, adolescents assume more active roles in their cultural development (Bernal, Knight, Garza, Ocampo, & Cota, 1990), they have more opportunities to explore the world outside the home, they are given more autonomy in choosing how to spend their time, and they exhibit more complex

Correspondence should be addressed to Kimberly A. Updegraff, School of Social and Family Dynamics, PO Box 873701, Arizona State University, Tempe, AZ, 85287-3701. Telephone: 480-965-6669. kimberly.updegraff@asu.edu..

processes of cultural adaptation (Knight, Jacobsen, Gonzales, Roosa, & Saenz, 2009). Adolescence is also marked by increases in adjustment problems and declines in academic achievement (Eccles et al., 1993; Zahn-Waxler, Shirtcliff, & Marceau, 2008), and a small body of research reveals concurrent associations between youth's cultural orientations and their adjustment (Gonzales, Fabrett, & Knight, 2009). To advance this area of study, we used longitudinal data to address two goals: (1) to describe changes in Mexican-origin youth's cultural orientations and adjustment from early to late adolescence (12 to 18 years of age); and (2) to investigate the longitudinal links between youth's cultural orientations and adjustment. In addressing each goal, we examined adolescent nativity and gender as potential moderators.

Changes in Mexican-Origin Youth's Cultural Orientations and Adjustment

Cultural Orientations

Cultural adaptation is a multifaceted process involving changes vis a vis both mainstream (i.e., acculturation) and ethnic (i.e., enculturation) cultures (Berry, 2003). Although conceptualized as multidimensional, few studies have examined both behavioral and attitude-value indices of cultural adaptation. To advance understanding of cultural adaptation processes, we examined four indicators of enculturation in a sample of Mexican-origin youth: Mexican *cultural values* (i.e., traditional gender role attitudes, familism) and Mexican *cultural involvement* (i.e., time spent with family, language use, ethnic affiliations) that, in combination, we refer to as *cultural orientations*.

Studies of Latino families highlight traditional *gender role attitudes* as a key cultural value (Cauce & Domenich-Rodríguez, 2002). We know little about the development of Latino youth's attitudes, but research consistent with both gender intensification and gender schema perspectives predict declines in gender traditionality through late adolescence (Hill & Lynch, 1983; Martin & Halverson, 1981). Models of cultural adaptation likewise predict declines in traditionality across adolescence, but for a different reason, namely exposure to US culture--wherein attitudes are generally less traditional than in Mexican culture. Indeed, rare longitudinal data on Mexican-origin youth aged 18 to 25 document declines in gender attitude traditionality into early adulthood (Valentine & Mosley, 2000).

The Latino cultural emphasis on family support and interdependence (Cauce & Domenech-Rodriguez, 2002) directs attention to the development of *familism values*. In the only longitudinal study (Fuligni & Pederson, 2002), Latino and European American young adults, aged 18 to 21, displayed greater increases in family obligation values than did East Asian and Filipino youth. Across time and ethnic group, young women endorsed stronger values than young men, and consistent with cross-sectional data (Fuligni, Tseng, & Lam, 1999; Perez & Padilla, 2000), first generation youth reported stronger familism values than later generation youth. Gender and generation status were not associated with different patterns of *change* in family values, however. We extended this work by examining changes in the familism values of Mexican-origin youth from early to late adolescence.

Changes in youth's *family time* are one part of the process of a renegotiation in family roles during adolescence (Collins, 1990). Most cross sectional and short term longitudinal research suggests that family time declines across adolescence, consistent with increases in youth autonomy (Larson & Richards, 1991). We know little about the role of ethnicity in these changes—no studies have focused on Latino youth--but one study found no short term declines in family time among African American youth (Larson, Richards, Sims, & Dworkin, 2001).

Finally, we examined adolescents' *involvement in Mexican culture*, including Spanish language use and ethnic affiliations (Cuéllar, Arnold, & Maldonado, 1995). These indicators are a common focus of research, which has shown greater Mexican cultural involvement among youth and adults who are more recent US arrivals and less cultural involvement with longer exposure to US culture (e.g., Cuéllar et al.; Perez & Padilla, 2000). These cross-sectional findings and models of cultural adaptation are consistent in their implications that Mexican cultural involvement will decline across the course of adolescence.

Adjustment

We also measured changes in youth's risky behaviors, depressive symptoms, and educational expectations to reflect both their positive and negative adjustment. As noted, prior longitudinal research, primarily on European American samples, suggests that there are normative declines in positive functioning in each of these domains across the course of adolescence (Eccles et al., 1993; Zahn-Waxler et al., 2008). Longitudinal data on ethnic minority youth is limited, and an important step is to document expected adjustment declines over time.

In sum, the literatures on adolescents' cultural orientations and adjustment suggest that there will be normative patterns of change from early to late adolescence in Mexican-origin youth's cultural values and adjustment. Models of adolescent development and cultural adaptation suggest that increasing autonomy and involvement in mainstream Anglo culture will lead to declines across adolescence in Mexican cultural orientations. Based on this work we expected to find declines from early to late adolescence in youth's gender attitude tradtionality, familism values, family time, and involvement in Mexican culture. Research on adjustment in adolescence likewise suggests an overall pattern of decline in positive functioning (i.e., educational expectations) and an increase in adjustment problems (i.e., depression symptoms, risky behavior) from early to late adolescence.

Youth Nativity and Gender as Moderators of Changes in Cultural Orientations and Adjustment

Ecological perspectives highlight the significance of person-context interactions in developmental change (Bronfenbrenner, 1989; García Coll et al., 1996). Consistent with these frameworks, scholars who study ethnic minority youth have called for research that takes into account individual, family, and context characteristics that may foster different patterns in the development of cultural adaptation and adjustment (Fuligni, 2001; Gonzales et al., 2009). Accordingly, we examined adolescent nativity and gender as potential moderators of patterns of change in cultural orientations and adjustment.

With respect to *nativity*, Fuligni (2001) emphasized the importance of disentangling developmental versus cultural adaptation processes through the use of longitudinal designs that chart trajectories of culture and development as a function of nativity or generation status. García Coll and Magnuson (1997) argued that nativity should be considered, "a core construct, which evokes different processes and engenders a different experience" (p. 94). The theoretical significance of nativity, in combination with empirical work (Fuligni et al., 1999; Perez & Padilla, 2000), was the basis for our hypothesis that Mexican-born youth would show slower declines in Mexican cultural orientations than US-born youth. Our predictions about the role of nativity in longitudinal changes in adjustment were more nuanced. Cross sectional findings led us to predict that increases in risky behaviors would be greater for US- than Mexico-born youth (see Gonzales et al., 2009 for a review), but research showing that youth begin to experience real barriers to their educational goals in late adolescence (Suárez-Orozco & Suárez-Orozco, 1995), led us to predict that declines in education expectations would be stronger for Mexico-born youth. Due to the paucity of prior

work, we advanced no hypotheses on the moderating role of nativity in changes in depressive symptoms.

We also examined the moderating role of adolescent *gender*. Gender is an organizing feature of Mexican family life (Cauce & Domenech-Rodríguez, 2002), and qualitative studies reveal gender differences in family socialization, with girls more closely supervised and assigned more family responsibilities, and boys granted more independence and allowed more time outside the home (e.g., Azmitia & Brown, 2002; Raffaelli & Ontai, 2004). This work was the basis for our hypothesis that declines in Mexican cultural orientations would be more pronounced for boys than for girls. Our predictions on the moderating role of gender in longitudinal changes in adjustment were again more nuanced. Adolescence is a time of intensification of gender socialization (Hill & Lynch, 1983), when gender differences in adjustment problems increase. Consistent with existing literature, we predicted that girls would show greater increases in depressive symptoms than boys but that boys would show greater increases in risky behaviors than girls (Zahn-Waxler et al., 2008); we also expected that declines in educational expectations would be less pronounced for girls than for boys (Mello, 2008).

Bidirectional Associations between Mexican-Origin Youth's Cultural Orientations and Adjustment from Early to Late Adolescence

Cultural Orientations and Adjustment

Scholars have called for greater attention to the role of development in ethnic minority and immigrant youth's cultural adaptation (Fuligni, 2001; García Coll & Magnusson, 1997; Sam, 2006), and consistent with this mandate, our second goal was to investigate longitudinal linkages between youth's cultural orientations and adjustment as measured in early and late adolescence. We tested two sets of hypotheses about these cross-time linkages: cultural orientations lead to individual differences in adjustment, and adjustment leads to individual differences in cultural orientations. Although a handful of studies has addressed the former issue, we know of no studies that have tested the role of adjustment in the development of cultural orientations. Given the role of psychological health in identity exploration and development, however, there is reason to expect that adjustment may underlie cultural adaptation processes.

Our focus on the associations between traditional gender role attitudes and adjustment builds on studies linking gender socialization and adolescents' psychological functioning (Pleck & O'Donnell, 2001; Zahn-Waxler et al., 2008). Feminist scholarship implicates male privilege in gender differences favoring boys and men in education and work aspirations and achievements and in psychological functioning (Ferree, 1990). Research on "hyper-masculinity" suggests, however, that boys' endorsement of some traditional gender role norms is linked to risky behavior (Pleck & O'Donnell, 2001). Grounded in these ideas and as we elaborate below, we expected that traditional gender role attitudes would be differentially associated with girls' versus boys' adjustment.

Strong ties to Mexican culture and strong familism values may provide youth with emotional and instrumental support, a sense of family unity, and motivation to act in ways that reflect positively on the family (Gonzales et al., 2008; Suárez-Orozco & Suárez-Orozco, 1995); enhanced social and human capital may explain why immigrant youth report less problem behavior and why stronger familism values are associated with fewer adjustment problems (Gonzales et al., 2009). We extended research on the links between Mexican cultural orientations and adjustment using a longitudinal design and including a measure of adolescents' family time as another cultural practice that may be linked to adjustment (Crouter, Tucker, Head, & McHale, 2004). Existing literature suggests that Mexican

involvement, familism values, and family time should lead to fewer depressive symptoms and risky behaviors and to higher educational expectations. We know of no research that has tested whether adjustment leads to enculturation, and thus these analyses were exploratory. Positive adjustment may strengthen youth's self-determination of their values and practices and thereby their connections to their ethnic group. Alternatively, adjustment problems in early adolescence may elicit greater family and cultural involvement in late adolescence as a source of support.

Youth Nativity and Gender as Moderators of Culture-Adjustment Linkages

As with our analyses of longitudinal changes in both youth's cultural orientations and adjustment, ecological perspectives directed our attention to the roles of nativity and gender in culture-adjustment cross-time linkages. Beginning with *nativity*, a person-environment fit model (Eccles et al., 1993) suggested that familism values, cultural involvement, and time spent with family should be more strongly associated with positive adjustment for Mexico-born than US-born youth due to the greater congruence between nativity and cultural orientations (Umaña-Taylor & Alfaro, 2009). With respect to the role of *gender* as a moderator, theory and research led us to predict that more traditional gender role attitudes in early adolescence would predict lower educational expectations (McWhirter, Hackett, & Bandalos, 1998) and higher levels of depressive symptoms for girls, as well as greater involvement in risky behavior for boys in late adolescence (Pleck & O'Donnell, 2001). We also expected that girls with higher educational expectations in early adolescence would endorse less traditional gender role attitudes in late adolescence to the extent that those attitudes support women's achievement. The literature provided no basis for hypotheses about gender as a moderator of the links between cultural involvement or family time and youth adjustment; thus, these analyses were exploratory.

The Present Study

In sum, this study addressed two research goals. We began by charting changes from early to late adolescence in the cultural orientations and adjustment of Mexican-origin youth. Next we tested the bidirectional, cross-time linkages between youth's cultural orientations and their adjustment. In addressing these goals we also tested hypotheses about the roles of gender and nativity as moderators of patterns of change and culture-adjustment linkages.

Method

Participants

The data came from a study of family socialization and adolescent development in Mexican-origin families (Updegraff, McHale, Whiteman, Thayer, & Delgado, 2005). Participating families ($N = 246$) were recruited through schools in and around a southwestern metropolitan area. Given the goal of the larger study, to examine gender, culture, and family socialization processes in Mexican-origin families with adolescents, we targeted families with a 7th grader and at least one older adolescent sibling living at home with their biological mothers and biological or long-term adoptive fathers (i.e., fathers in the home for a minimum of 10 years). All mothers were of Mexican origin, and though not an eligibility criterion, 93% of fathers also were of Mexican descent. Finally, given our interest in parents' family roles, we included families in which fathers worked at least 20 hours per week. Families were recruited from junior high schools in five school districts and from five parochial schools selected to represent a range of socioeconomic situations. Proportion of students receiving free or reduced lunch varied from 8% to 82% across schools. Interviews were completed by 246 families (see Updegraff et al., 2005 for additional details). This study focused on target adolescents who participated in Phase 1 during the 7th grade and again five years later (referred to here as Phase 2).

At Phase 1, families represented a range of socioeconomic levels. The percentage that met federal poverty guidelines was 18.3%. Annual median household income was $41,000 ($SD$ = $45,222; range = $5000 to over $100,000). Parents had completed an average of 10 years of education (M = 10.34; SD = 3.74 for mothers, and M = 9.88; SD = 4.37 for fathers). Seventy percent of parents had been born outside the US; this subset of mothers and fathers had lived in the US an average of 12.37 (SD = 8.86) and 15.17 (SD = 8.77) years, respectively. Almost 70% of the interviews with parents were conducted in Spanish. For adolescents, the sample included 125 girls and 121 boys who averaged 12.51 (SD = .58) years of age at Phase 1. Adolescents were born in the US (62%) or Mexico (38%) and were primarily interviewed in English (83%).

Data were available from 246 7th graders at Phase 1. Phase 2 interviews were conducted five years later when target adolescents were 17.75 years old (SD = .56); over 75% of the families participated (n = 184). Those who did not participate: could not be located (n = 43), had moved to Mexico (n = 2), could not presently participate or were difficult to contact (n = 8), or refused (n = 8). Non-participating families at Phase 2 (n = 62), compared to participating families, reported lower income at Phase 1 (M = $37,632; SD =$28,606 vs. M = $59,517; SD = $48,395) and lower maternal education (M = 9.48; SD = 3.45 vs. M = 10.62; SD = 3.80).

Procedures

Data were collected using two procedures at each phase. First, in-home interviews were conducted separately with adolescents, mothers, and fathers. Bilingual interviewers read all questions aloud and entered responses into laptops. Second, during the three to four weeks following the home interviews, adolescents participated in a series of seven nightly phone calls (i.e., five weekday evenings and two weekend evenings). Families received $100 for in-home interviews and $100 for phone interviews at Phase 1, and $125 for in-home and $125 for phone interviews at Phase 2. All materials were translated into Spanish and back translated into English by separate individuals. Final translations were reviewed by a third native Mexican American translator and discrepancies were resolved by the research team.

Measures

Family Background Characteristics—Parents reported on their education in years and their annual household income at Phase 1. A log transformation was applied to household income to correct for skewness. We created a composite SES score by standardizing and summing mothers' and fathers' education levels and household income (α = .76).

Cultural Orientations—All measures were completed at both Phase 1 and Phase 2. To assess *traditional gender role attitudes*, adolescents completed Hoffman and Kloska's (1995) measure (e.g., A husband's job is more important than a wife's), rating each of 10 items on a 4-point scale (1 = *strongly agree*, 4 = *strongly disagree*). Items were coded such that higher scores indicated more traditional gender role attitudes and averaged to create a scale score. Cronbach's alphas were .82 at Phase 1 and .93 at Phase 2. Adolescents' *familism values* were measured with the 16-item familism subscale of the Mexican American Cultural Values Scale (Knight et al., 2010). Items (e.g., "It is always important to be united as a family") were rated on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*) and averaged to create an overall score. Higher scores indicated stronger familism values. Cronbach's alphas were .87 at Phase 1, and .86 at Phase 2.

To measure *Mexican involvement*, adolescents completed the Acculturation Rating Scale for Mexican Americans-II (ARSMA-II; Cuéllar et al., 1995). Seventeen items assess primarily Spanish language usage (e.g., "I speak Spanish) and ethnic affiliations (e.g., "My friends are

of Mexican origin"). Items are rated on a 5-point scale (1 = *not at all*, 5 = *extremely often or always*), with higher scores reflecting more Mexican involvement. Cronbach's alphas were .90 and .91 at Phases 1 and 2, respectively.

Adolescents' *time with family* was measured using the phone data (see McHale, Crouter, & Bartko, 1992). During each phone call, adolescents reported on the durations (in minutes) of and their companions (e.g., siblings, parents) in their daily activities over the prior 24 hours, excluding time spent at school or work. Data were aggregated across the seven calls, and we calculated the proportion of time adolescents spent in activities with family members by dividing the total time that adolescents reported spending with family members by the total activity time they reported. High correlations between adolescents' and their older siblings' reports of shared time, $r = .90$, $p < .001$, at Phase 1, and $r = .79$, $p < .001$, at Phase 2, are evidence of the reliability of adolescents' time use reports.

Adolescent Adjustment—We also assessed adolescents' adjustment at both phases. First, adolescents rated the frequency with which they engaged in each of 23 *risky behaviors* (Eccles & Barber, 1990) during the past year (e.g., skip a day of school, got drunk or high) on a 4-point scale (1= *Never*, 4 = *More than 10 times*). Items were averaged to create the scale score. Higher scores indicated more risky behaviors. Cronbach's alphas were .91 for Phase 1, and .88 for Phase 2. To measure *depressive symptoms*, adolescents completed the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). Respondents rated the frequency that each of 20 symptoms occurred on a 4-point scale in the past month (0= *Rarely or none of the time*, 3 = *Most of the time*), with high scores indicating higher levels of depressive symptoms. Cronbach's alphas were .83, and .76 for Phases 1 and 2, respectively. Finally, adolescents reported on their *educational expectations* by responding to the following item: "How far do you really think you will go in school?" Response choices were on a continuous scale representing the total number of years of education (e.g., 12 = high school diploma; 16 = bachelor's degree).

Results

Preliminary Analyses

Bivariate correlations, means, and standard deviations for all study variables are presented separately for Mexico-born and US-born adolescents in Table 1 and separately for girls and boys in Table 2. Involvement in Mexican culture was the most stable indicator of cultural orientations. More modest stability coefficients were evident for other dimensions of culture, and stability in adjustment varied across indicator by adolescent nativity and gender.

Changes in Mexican-Origin Youth's Cultural Orientations and Adjustment

To address our first goal of examining changes from early to late adolescence in cultural orientations and adjustment and testing whether these changes differed by adolescent nativity and gender, a series of 2 (Adolescent Nativity) × 2 (Adolescent Gender) × 2 (Time) repeated measures ANCOVAs (with SES as a covariate) were conducted in SPSS 18.0. We retained only significant interactions in the final models because non-significant interactions tend to increase standard errors (Aiken & West, 1991). Multiple imputation was used to minimize bias in the estimation of parameters and standard errors due to missing data (Acock, 2005). The imputation model included 17 variables (i.e., gender role attitudes, familism values, time with family, Mexican involvement, risky behaviors, depressive symptoms, and educational expectations at both phases, and adolescent gender, nativity, and SES). Ten datasets were imputed following the Markov Chain Monte Carlo procedure (MCMC; Schafer, 1997). The batch processing feature available in SPSS was used to estimate and pool the results from separate datasets.

Cultural Orientations—We found significant changes in all four dimensions of adolescents' cultural orientations (see Tables 1 and 2 for means and standard deviations). Beginning with adolescents' gender role attitudes, the main effect for gender was not significant, but a time × adolescent gender interaction emerged, $\gamma = .33$, SE = .11, t = 3.06, $p < .01$. Follow up analyses revealed that girls reported less traditional gender role attitudes in late as compared to early adolescence, $\gamma = -.29$, SE = .07, t = -4.32, $p < .01$, but that boys showed no significant change, $\gamma = .04$, SE = .09, t = .42, *ns*. Consistent with predictions, time effects revealed significant declines in familism values, $\gamma = -.18$, SE = .05, t = -3.82, $p < .01$, time spent with family, $\gamma = -.25$, SE = .01, t = -20.83, $p < .01$ and involvement in Mexican culture, $\gamma = -.11$, SE = .04, t = -2.65, $p < .01$. There were no main effects or interactions with gender for any of these indices; neither were there interactions with nativity, though several main effects for nativity emerged (see Table 1). As expected, Mexico-born adolescents reported more traditional gender role attitudes, $\gamma = .20$, $SE = .07$, $t = 3.00$, $p < .01$, and they rated themselves as more involved in Mexican culture than did US-born adolescents, $\gamma = .51$, $SE = .09$, $t = 5.82$, $p < .01$.

Adjustment—Contrary to our prediction, a time effect, $\gamma = -2.32$, $SE = .80$, $t = -2.88$, $p < .01$, indicated declines in depressive symptoms (see Table 1). In contrast, risky behavior increased, $\gamma = .21$, $SE = .03$, $t = 6.51$, $p < .01$. Although there was no main effect of time for educational expectations, the predicted time × adolescent nativity interaction emerged, $\gamma = -1.47$, SE = .40, $t = -3.69$, $p < .01$, revealing that Mexico-born adolescents declined in their educational expectations, $\gamma = -1.37$, $SE = .31$, $t = -4.46$, $p < .01$, but US-born adolescents did not, $\gamma = .10$, $SE = .23$, $t = .41$, *ns* (Table 1). Two main effects for gender were consistent with prior research: girls reported more depressive symptoms, $\gamma = -2.41$, $SE = 1.08$, $t = -2.24$, $p < .05$, and boys reported more risky behaviors, $\gamma = .18$, $SE = .04$, $t = 4.36$, $p < .01$ (Table 2), but we found no interactions involving gender. Nor were there main effects of nativity on adjustment.

Summary—Adolescents exhibited declines in familism values, time with family, and Mexican cultural involvement; and girls, but not boys, exhibited declines in traditional gender role attitudes. Changes in adjustment also were evident: risky behaviors increased but depressive symptoms decreased for all youth, and educational expectations declined for Mexico-born youth.

Associations between Mexican-Origin Youth's Cultural Orientations and Adjustment

To address our second goal, we tested a series of autoregressive cross-lag panel models (Cole & Maxwell, 2003) in Mplus 5.1 (Muthen & Muthen, 2008) to estimate reciprocal relations between culture and adjustment at two points in time, after taking into account the effects of stability in each of the constructs. We included the following predictors in the first set of models to test the overall association: (1) SES (as a covariate); (2) adolescent gender and adolescent nativity as main effects; (3) cultural orientation at Phase 1 to cultural orientation at Phase 2, and adjustment at Phase 1 to adjustment at Phase 2 (i.e., stability effects); (4) cross-lagged effects of cultural orientation (Phase 1) to adjustment (Phase 2), as well as adjustment (Phase 1) to cultural orientation (Phase 2). In addition, all models included correlations between the exogenous variables (i.e., SES, adolescent gender, adolescent nativity, adjustment at Phase 1, and cultural orientation at Phase 1) and within time error correlations for the endogenous variables (i.e., cultural orientation, adjustment). Adolescent gender was coded as 0 = girls and 1 = boys, and adolescent nativity was coded as 0 = US-born and 1 = Mexico-born. The models were just-identified and thus fit perfectly. Missing data were accounted for using the Full Information Maximum Likelihood (FIML) estimator.

To test the moderating role of adolescent nativity and gender, we next tested a series of multiple group (autoregressive cross-lag panel) models, first assessing differences as a function of adolescent nativity, and next assessing differences as a function of adolescent gender. These models included the following predictors: (1) SES as a covariate; (2) adolescent nativity (in the multiple group models testing moderation by adolescent gender) and adolescent gender (in the multiple group models testing moderation by adolescent nativity); (3) stability and cross-lag effects (described above). All models included correlations between the exogenous variables and within time error correlations for the endogenous variables (also described above). We tested for moderation by the grouping variable of interest when a path coefficient was significant for one group and not for the other group or when path coefficient signs differed across groups. Path coefficients were tested one at a time by comparing the fit of the model in which the path coefficient of interest was constrained to be equal across groups to the model in which they were free to vary across groups. Evidence of moderation is described below when the constrained model resulted in a significant change in χ^2, $p < .05$, and fit indices indicated that the unconstrained model fit significantly better than the constrained model (Kline, 1998). Because main effects and stability in cultural orientations and adjustment were described above, we focus below on describing *cross-lag effects* for each dimension of culture. We organize the presentation of findings by dimension of cultural orientation (i.e., gender role attitudes, familism values, time spent with family, and Mexican involvement), describing findings for risky behaviors, depressive symptoms, and educational expectations, respectively, within each section.

Traditional Gender Role Attitudes—The overall models testing associations between gender role attitudes and each of the three adjustment indices are shown in Table 3. Each model accounted for significant variance in gender role attitudes and adjustment. Significant cross lag effects emerged in the multiple group models, but not in the overall models. Beginning with *risky behaviors*, adolescent gender moderated the cross-lag effect from traditional gender role attitudes at Phase 1 to risky behaviors at Phase 2, $\Delta\chi^2(1) = 11.79$, $p < .05$. For boys, more traditional gender roles attitudes at Phase 1 were linked to higher involvement in risky behaviors at Phase 2, $\beta = .33$, $p < .01$. In contrast, for girls, more traditional gender role attitudes at Phase 1 were linked to less involvement in risky behaviors at Phase 2, $\beta = -.24$, $p < .05$. No significant cross-lag effects emerged for adolescents' *depressive symptoms*. Turning to *educational expectations*, adolescent nativity and gender moderated the associations between gender role attitudes at Phase 1 and educational expectations at Phase 2, $\Delta\chi^2(1) = 3.84$, $p = .05$ for nativity, and $\Delta\chi^2(1) = 6.56$, $p < .05$ for gender. For US-born youth, but not Mexico-born youth, more traditional gender role attitudes were associated with lower educational expectations, $\beta = -.28$, $p < .01$ ($\beta = .05$, *ns*, Mexico-born youth). In addition, for boys, but not for girls, more traditional gender role attitudes at Phase 1 also were associated with lower educational expectations at Phase 2, $\beta = -.35$, $p < .01$ (for girls, $\beta = -.01$, *ns*).

Familism Values—The models estimated to test for the associations between familism values and each of the three outcomes did not account for significant variance in familism values, but did account for significant variance in adjustment (see Table 4). A significant cross-lag effect emerged linking familism at Phase 1 to *risky behaviors* at Phase 2 in the overall model, such that higher familism values in early adolescence were associated with lower levels of risky behaviors in late adolescence. None of the cross-lag paths were significant for adolescents' *depressive symptoms* or *educational expectations* in the overall or multiple group models.

Time with Family—The overall models linking time spent with family to each adjustment outcome are shown in Table 5. All three models accounted for significant variance in time spent with family and in adjustment. For *risky behaviors*, the cross-lag effects were significant in the multiple group models. First, adolescent nativity moderated the path linking risky behaviors at Phase 1 to time spent with family at Phase 2, $\Delta\chi^2(1) = 7.69$, $p < .01$, such that the association was significant and positive for Mexico-born adolescents, $\beta = .40$, $p < .01$, but not for US-born adolescents, $\beta = -.11$, *ns*. In addition, adolescent gender moderated the cross-lag effect of time spent with family at Phase 1 to risky behaviors at Phase 2, $\Delta\chi^2(1) = 7.92$, $p < .01$. A higher proportion of time spent with family in early adolescence was associated with fewer risky behaviors in late adolescence for boys, $\beta = -.34$, $p < .01$, but not for girls, $\beta = .07$, *ns*. For *depressive symptoms*, adolescent nativity moderated the association between depressive symptoms at Phase 1 and time spent with family at Phase 2, $\Delta\chi^2(1) = 4.60$, $p < .05$. For Mexico-born adolescents, more depressive symptoms at Phase 1 were associated with greater proportion of family time at Phase 2, $\beta = .39$, $p < .01$ (for U.S.-born adolescents, $\beta = .05$, *ns*). Turning to *educational expectations*, the cross-lag coefficient was significant in the overall model, revealing a negative association between Phase 1 educational expectations and Phase 2 time with family.

Mexican Involvement—The models estimated to test the associations between Mexican involvement and the three outcome variables accounted for substantial variance in Mexican involvement and adjustment (see Table 6). For *risky behaviors*, the cross-lag coefficient from Mexican involvement (Phase 1) to risky behaviors (Phase 2) was moderated by adolescent nativity, $\Delta\chi^2(1) = 4.63$, $p < .05$, with a significant negative association for Mexico-born adolescents, $\beta = -.30$, $p < .01$ (for US-born adolescents, $\beta = .04$, *ns*). The cross-lag coefficient from risky behaviors (Phase 1) to Mexican involvement (Phase 2) also was moderated by adolescent nativity, $\Delta\chi^2(1) = 9.68$, $p < .05$, with a positive association for Mexico-born youth, $\beta = .25$, $p < .05$, and negative association for US-born youth, $\beta = -.15$, $p < .05$. Finally, the cross-lag effect from Mexican involvement (Phase 1) to risky behaviors (Phase 2) was moderated by adolescent gender, $\Delta\chi^2(1) = 8.44$, $p < .05$, with a significant negative association for boys, $\beta = -.34$, $p < .01$, and a non-significant positive association for girls, $\beta = .19$, *ns*. No significant cross-lag effects emerged for *depressive symptoms* or *educational expectations*.

Summary—For all youth, familism in early adolescence predicted less risky behavior in late adolescence, and young adolescent educational expectations predicted less family time. For *nativity*, Mexico-born youth's more depressive symptoms and risky behaviors in early adolescence predicted more family time and Mexican involvement, respectively, and more Mexican involvement predicted less risky behavior. For US-born youth, more risky behavior in early adolescence predicted less Mexican involvement in late adolescence, and more traditional attitudes predicted lower educational expectations. Turning to *gender*, boys' family time and Mexican involvement in early adolescence predicted less risky behavior in late adolescence, and boys' traditional attitudes predicted more risky behaviors and lower educational expectations. For girls, in contrast, more traditional gender attitudes predicted less risky behavior.

Discussion

This study advanced understanding of the development of Mexican-origin youth in immigrant families by examining longitudinal and bidirectional links between youth's cultural orientations and their adjustment. We moved beyond the common focus on the negative implications of cultural adaptation in disadvantaged groups (McLoyd, 1998) to examine how cultural orientations were associated with both positive and negative outcomes in a sample of youth from two-parent families that ranged in their socioeconomic

backgrounds. Our ethnic-homogenous design (McLoyd, 1998) and comparative longitudinal approach (Fuligni, 2001) allowed us to illuminate sources of within-group variability in the development of Mexican-origin youth: Our study highlights the roles of adolescent nativity and gender in these developmental processes.

Changes in Mexican-Origin Youth's Cultural Orientations and Adjustment

Dramatic developmental changes in adolescence make this an important period in which to examine cultural adaptation and adjustment. In line with prior work, we found that first generation immigrant youth reported stronger cultural involvement and more traditional gender role attitudes than did US-born youth (Cuéllar et al., 1995; Valentine & Mosley, 2000). Consistent with developmental and cultural adaptation perspectives, however, both groups showed declines from early to late adolescence in their familism values, family time, and cultural involvement. Although we anticipated more pronounced declines for US-born than Mexico-born youth, no group differences emerged in patterns of change. Developmental processes in adolescence, including identity formation and increased autonomy, may promote youth's individualistic orientations and involvement in the world beyond the family, overriding the contextual forces that foster enculturation and "protect" Mexico-born youth from declines over time in their cultural orientations. Notably, first generation immigrant youth in this sample arrived in the US prior to age 12, and therefore, may have been less immersed in Mexican culture than immigrant youth who arrive in the US at older ages. Our data were not suggestive of regression to the mean effects in that mean differences in enculturation between Mexico- and US-born youth were stable over time. Further, in the face of overall declines in enculturation, the sample as a whole continued to report strong familism values, moderate levels of cultural involvement, and substantial levels of family time in late adolescence, on average. Their strong cultural ties may have resulted, in part, because of the characteristics of the socio-cultural contexts (i.e., the high percentage of Latino youth in their communities, and their close proximity to Mexico). Future studies should examine the role of nativity in enculturation in geographically diverse samples and among youth who vary in their timing of immigration.

Changes in Mexican-origin adolescents' traditional gender role attitudes differed as a function of youth gender. Girls reported declines in their traditional gender role attitudes, consistent with theories pertaining to gender intensification (Hill & Lynch, 1983), gender schemas (Martin & Halverson, 1981), and cultural adaptation (Valentine & Mosley, 2000). Boys, in contrast, exhibited no significant change from early to late adolescence. The net result was that girls and boys differed more in their gender traditionality by late adolescence than they had in early adolescence. These findings may be attributed to the fact that traditional gender ideologies privilege boys and men with higher status and power over girls and women (Ferree, 1990). Below we consider the implications of boys' versus girls' gender attitudes for their individual adjustment in late adolescence, but here we note that future research should examine the consequences of a potentially increasing gender divide in young women's and men's gender attitudes for decisions about and adaptation to adult work and family roles.

Studies of ethnic minority and immigrant youth are characterized by a focus on risk and pathology and an overrepresentation of youth facing socioeconomic disadvantage (McLoyd, 1998). Our interest in the family roles of mothers and fathers led to this study's focus on two-parent families that, in the targeted geographic region, encompassed a range of socioeconomic circumstances. On average, these Mexican-origin youth could be described as relatively well adjusted, as evidenced by low levels of risky behavior, low to moderate depressive symptoms, and expectations to attend at least 3 years of postsecondary education. Thus, this study offers an important opportunity to learn about the cultural correlates of adjustment among Mexican-origin youth who were generally functioning well. Consistent

with this perspective, youth showed small declines in depressive symptoms and only slight increases in risky behaviors.

Declines in educational expectations also were evident, but only for Mexico-born youth. Like US-born youth, Mexico-born youth's education expectation scores in early adolescence were only slightly below college completion (i.e., 16 years). US-born youth's scores remained at this level in late adolescence, but those of Mexico-born youth declined to about the level of an associate's degree. Between 7th and 12th grades, immigrant youth may develop an increasing recognition of the real barriers to their education achievement, including financial constraints and family obligations (e.g., Suárez-Orozco & Suárez-Orozco, 1995). For example, in this sample, youth who endorsed higher education expectations in early adolescence spent less time with family in late adolescence. This pattern may have emerged because parents reduce their expectations for family involvement when youth demonstrate a strong commitment to pursuing their educational goals and actively support their offspring's involvement in academics as an alternative to family time. The challenges of balancing family demands with educational pursuits, however, also may underlie this association, and highlight the dilemma youth and parents from immigrant families face: to be successful within the context of Anglo cultural norms, youth must "move away" from their families—a key source of supports for their achievement. Importantly, this process may be both child and parent-driven. Future research should more fully explore the links between education expectations and the family orientations of youth from immigrant families, including examining the role of SES, to illuminate how financial support and other forms of family "capital" support have implications for youth's family involvement.

Bidirectional Associations between Youth's Cultural Orientations and Adjustment

Developmental and cultural adaptation processes occur simultaneously, yet we know little about how these changes are interrelated (Fuligni, 2001; Sam, 2006). This study takes an important step in this direction by using a longitudinal, cross-lag design to examine associations between culture and adjustment from ages 12 to 18, taking into account family SES and intra-individual stability in both cultural orientations and adjustment. In this sample of youth who exhibited relatively low levels of adjustment problems, our findings provide consistent evidence that cultural orientations in early adolescence predict adjustment in late adolescence, and more limited support for the hypothesis that adjustment in early adolescence predicts cultural orientations in late adolescence. In discussing these findings, we highlight three key patterns. First, for the sample as a whole, familism values in early adolescence served as a protective factor for involvement in risky behavior in late adolescence. Second, differential associations between culture and adjustment for Mexico-born versus US-born youth underscore the significance of nativity as a source of within-group variability in developmental processes. Third, highlighting the interplay of gender and culture in shaping youth well being, gender played a significant role in culture-adjustment associations.

Protective Effects of Familism Values for Youth's Risky Behaviors—Strong familism values reflect youth's orientations toward their families as a source of emotional support as well as a focus of responsibilities and obligations. In this study, familism values at age 12 predicted lower levels of risky behavior at age 18, controlling for age 12 risky behavior. Scholars have theorized about the protective function of familism values for Latino youth's adjustment, with support from cross-sectional data (e.g., Gonzales et al., 2008). Our findings provide strong evidence of this direction of effect. Gonzales and colleagues (2008) argue that youth who endorse strong familism values have tight family bonds and behave in ways consistent with their values to honor the family, such as by

avoiding behaviors that would reflect negatively on their family. Importantly, of all the enculturation-to-adjustment associations examined here, the link between familism and risky behaviors was the only association that was not moderated by adolescent gender and nativity, highlighting the widespread benefit of familism values for risky behavior in adolescence.

Youth Nativity as a Source of Within-Group Variability—Similar patterns of change in cultural orientations and adjustment were found for Mexico-born and US-born adolescents in this sample, but group differences emerged in cultural orientation-adjustment linkages. Such findings suggest that there may be different processes linking enculturation and adjustment for Mexico-versus US-born youth. For Mexico-born youth, we found evidence that cultural and family involvement may be protective in multiple ways. First, as did their familism values, Mexico-born youth's cultural involvement in early adolescence predicted less risky behavior in late adolescence. High levels of involvement in Mexican culture by Mexico-born youth may be especially beneficial because youth's behaviors are consistent with community norms and expectations (Umaña-Taylor & Alfaro, 2009). Consistent with the person-environment fit model (Eccles et al., 1993), congruence between youth's orientations and those of their social context (e.g., family, peer) may lead to more positive outcomes. Second, higher levels of depressive symptoms and risky behaviors in Mexico-born youth predicted more time with family and more cultural involvement in late adolescence. Given the strong commitment to family, particularly evident among first generation Mexican immigrants (Gonzales et al., 2008), the families of Mexico-born youth may respond with increased engagement and intervention when youth experience problems and youth in these families may be receptive to such intervention — evidence of the uniquely protective dynamics in immigrant families (Gonzales et al., 2008).

Associations between enculturation and adjustment were far less evident for US-born youth, leading us to question what processes explain adjustment in this group. It is notable that, in contrast to Mexican-born youth, for US-born youth, greater involvement in risky behaviors in early adolescence predicted *lower* levels of involvement in Mexican culture in late adolescence, including ethnic group peer affiliations and cultural traditions. Strong ties to peers from other ethnic groups, activities away from home and family, and exposure to the mainstream culture, more generally, may provide opportunities and motivation for risky behavior (Gonzales et al., 2009). Also unique to US-born youth was significant stability in risky behaviors from early to late adolescence, suggesting that it will be important to identify the factors that maintain these youth's involvement in risky behavior through adolescence (e.g., deviant peers, sociocultural context risks, resistance to parents' socialization efforts). Future work also should consider how enculturation *and* acculturation, separately and jointly, are linked to US-born and Mexico-born youth's adjustment.

The Role of Gender in Culture-Adjustment Associations—Qualitative research highlights differences in girls' versus boys' family roles and responsibilities (Azmitia & Brown, 2002; Raffaelli & Ontai, 2004). Our data revealed similar levels of family and cultural involvement for Mexican-origin girls and boys, but gender differences in the interrelations of cultural orientations and adjustment, with more associations for boys than for girls. For boys, cultural and family involvement in early adolescence was protective in that they predicted lower levels of risky behavior later. Boys who spend more time with family and are more involved in Mexican culture may be more closely supervised and have fewer opportunities to engage in problem behavior, and they may be more motivated to avoid risky behavior when opportunities arise. In contrast to these advantages of family and cultural involvement, but consistent with ideas about hypermasculinity as a risk (Pleck & O'Donnell, 2001), boys' more traditional gender role attitudes predicted more risky behavior and lower educational expectations. Together, our findings highlight the insights that can be

gained from examining multiple dimensions of enculturation: culture is not monolithic, including in its implications for adjustment.

Relevant to this point, only one association between enculturation and adjustment emerged for girls: More traditional gender role attitudes in early adolescence predicted *lower* levels of risky behaviors in late adolescence. Girls with more traditional gender role attitudes also reported higher levels of Mexican involvement and more time with family. Collectively, these strong ties to the Mexican culture and to the family may mean that girls have limited motivation and opportunity to engage in risky behaviors (Azmitia & Brown, 2002; Raffaelli & Ontai, 2004). Unexpectedly, girls' traditional attitudes were not associated with their educational expectations in adolescence, but this association may emerge in young adulthood as girls with more traditional attitudes make choices about marriage and childbearing that impact their educational plans. In addition, strong values regarding achievement, often depicted as a strength of immigrant families (Fuligni, 2001; Suárez-Orozco, & Suárez-Orozco, 1995), may be more salient for girls' educational expectations than their traditional gender role attitudes.

Conclusions

In sum, this study extended research on culture and adjustment using a longitudinal cross-lag design. Notably, patterns of change in youth's cultural orientations from early to late adolescence differed from changes that have been documented from late adolescence to young adulthood (e.g., Fuligni & Pedersen, 2002; Valentine & Mosley, 2000). Thus, it will be important to extend longitudinal investigations of cultural adaptation from early adolescence into adulthood to capture a broader swath of development. Such an approach would provide insights about whether changes in cultural values versus involvement occur at different rates and are differentially related to adjustment in these different periods. A contribution of our study was the insights it provided about multiple dimensions of enculturation. Our findings suggest that dimensions of culture have distinct implications for adjustment, and they underscore the importance of examining dimensions of enculturation and acculturation and their interactions as these are linked to adjustment across different developmental periods.

As we have noted, Mexican-origin youth are a large and rapidly growing segment of the U.S. population, and efforts to understand the forces that shape their health and well being have significant public health implications. Our findings revealed generally similar patterns of change in cultural orientations and adjustment for immigrant as compared to US-born Mexican-origin youth. Where the two groups differed was in cultural orientation-adjustment linkages: Cultural orientations appeared to serve as protective factors for immigrant, but not for US-born Mexican-origin adolescents. Although our sample of youth was generally well-adjusted and geographically limited and these results should be replicated in a more diverse sample, findings of a uniquely protective role of culture for immigrant youth are in keeping with larger studies documenting more positive health and well-being in first generation immigrants to the US. If replicated, these results will have important applied implications for culturally-grounded, targeted programs to promote positive development in immigrant youth. They also point the way for future research to identify the distinct processes underlying adjustment in *US-born youth* from immigrant families. More generally, ethnic homogeneous designs that illuminate similarities *and* differences in the processes underlying development and adjustment are an important direction for future research on youth from immigrant families.

Acknowledgments

References

Acock AA. Working with missing values. Journal of Marriage and Family. 2005; 67:1012, 1028. doi: 10.1111/j.1741-3737.2005.00191.x.

Aiken, LS.; West, SG. Multiple Regression: Testing and interpreting interactions. Sage; Newbury Park, CA: 1991.

Azmitia, A.; Brown, JR. Latino immigrant parents' beliefs about the "path of life" of their adolescent children.. In: Contreras, JM.; Kerns, KA.; Neal-Barnett, AM., editors. Latino children and families in the United States. Praeger Press; Westport, CT: 2002. p. 77-106.

Bergad, LW.; Klein, HS. Hispanics in the United States: A demographic, social, and economic history, 1980-2005. Cambridge University Press; NY: 2010.

Bernal ME, Knight GP, Garza CA, Ocampo KA, Cota MK. The development of ethnic identity in Mexican-American children. Hispanic Journal of Behavioral Sciences. 1990; 12:3–24. doi: 10.1177/07399863900121001.

Berry, JW. Conceptual approaches to acculturation.. In: Chun, KM.; Organista, PB.; Marín, G., editors. Acculturation: Advances in theory, measurement, and applied research (pp. American Psychological Association; Washington, DC: 2003. p. 17-38.

Bronfenbrenner U. Ecological systems theory. Annals of Child Development. 1989; 6:187–249. doi: 10.1037/10518-046.

Cauce, AM.; Domenech-Rodríguez, M. Latino families: Myths and realities.. In: Contreras, JM.; Kerns, KA.; Neal-Barnett, AM., editors. Latino children and families in the United States. Praeger Press; Westport, CT: 2002. p. 5-25.

Cole DA, Maxwell SE. Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. Journal of Abnormal Psychology. 2003; 112:558–577. doi: 10.1037/0021-843X.112.4.558. [PubMed: 14674869]

Collins, WA. Parent-child relationships in the transition to adolescence: Continuity and change in interaction, affect, and cognition.. In: Montemayor, R.; Adams, GR.; Gullotta, TP., editors. From childhood to adolescence: A transitional period?. Sage Publications; Newbury Park, CA: 1990. p. 85-106.

Crouter AC, Tucker CJ, Head MR, McHale SM. Family time and the psychosocial adjustment of adolescent siblings and their parents. Journal of Marriage and Family. 2004; 66:147–162. doi: 10.111/j.0022-2445.2004.00011.x.

Cuéllar I, Arnold B, Maldonado R. Acculturation Rating Scale for Mexican Americans-II: A revision of the original ARSMA scale. Hispanic Journal of Behavioral Sciences. 1995; 17:275–304. doi: 10.1177/07399863950173001.

Eccles, JS.; Barber, B. Unpublished scale. University of Michigan; 1990. Risky behavior measure..

Eccles JS, Midgley C, Wigfield A, Buchanan CM, Reuman D, Flanagan C, et al. Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. American Psychologist. 1993; 48:90–101. doi:10.1037/10254-034. [PubMed: 8442578]

Ferree MM. Beyond separate spheres: Feminism and family research. Journal of Marriage and the Family. 1990; 52:866–884. doi:10.2307/353307.

Fuligni AJ. A comparative longitudinal approach to acculturation among children from immigrant families. Harvard Educational Review. 2001; 71:566–578.

Fuligni AJ, Pedersen S. Family obligation and the transition to young adulthood. Developmental Psychology. 2002; 38:856–868. doi: 10.1037/0012-1649.38.5.856. [PubMed: 12220060]

Fuligni AJ, Tseng V, Lam M. Attitudes toward family obligations among American adolescents with Asian, Latin American, and European backgrounds. Child Development. 1999; 70:1030–1044. doi: 10.1111/1467-8624.00075.

García Coll CG, Crnic K, Lamberty G, Wasik BH, Jenkins R, Garcia HV, et al. An integrative model for the study of developmental competencies in minority children. Child Development. 1996; 67:1891–1914. doi: 10.1111/j.1467-8624.1996.tb01834.x. [PubMed: 9022222]

García Coll, C.; Magnuson, K. The psychological experience of immigration: A developmental perspective.. In: Booth, A.; Crouter, AC.; Landale, N., editors. Immigration and the family: Research and policy on U.S. immigration. Lawrence Erlbaum Associates; Mahwah, NJ: 1997. p. 91-131.

Gonzales, NA.; Fabrett, F.; Knight, GP. Acculturation, enculturation, and the psychosocial adaptation of Latino youth.. In: Villarruel, FA.; Carlo, G.; Grau, JM.; Azmitia, M.; Cabrera, NJ.; Chahin, TJ., editors. Handbook of U.S. Latino Psychology: Developmental and community-based perspectives. Sage Publications; Thousand Oaks, CA: 2009. p. 115-134.

Gonzales NA, German M, Kim SY, George P, Fabrett FC, Milsap R, Dunka LE. Mexican American adolescents' cultural orientation, externalizing behavior and academic engagement: The role of traditional cultural values. American Journal of Community Psychology. 2008; 41:151–164. doi: 10.1007/s10464-007-9152-x. [PubMed: 18085435]

Hill, JP.; Lynch, ME. The intensification of gender-related role expectations during early adolescence.. In: Brooks-Gunn, J.; Petersen, A., editors. Girls at puberty: Biological and psychosocial perspectives. Plenum Press; New York, NY: 1983. p. 201-228.

Hoffman LW, Kloska DD. Parents' gender-based attitudes toward marital roles and child rearing: Development and validation of new measures. Sex Roles. 1995; 32:273–295. doi: 10.1007/BF01544598.

Kline, RB. Principles and Practice of Structural Equation Modeling. Guilford; New York, NY: 1998.

Knight GP, Gonzales NA, Saenz DS, Bonds DD, Germán M, Deardorff J, Roosa MW, Updegraff KA. The Mexican American cultural values scale for adolescents and adults. Journal of Early Adolescence. 2010; 30(3):444–481. doi: 10.1177/0272431609338178. [PubMed: 20644653]

Knight, GP.; Jacobson, RP.; Gonzales, NA.; Roosa, MW.; Saenz, DS. An evaluation of psychological research on acculturation and enculturation processes among recently immigrating populations.. In: Dalla, RL.; Defrain, J.; Johnson, J.; Abbott, DA., editors. Strengths and challenges of new immigrant families: Implications for Research, Educational, Policy, and Service. Lexington Books; Lanham, MD: 2009. p. 9-31.

Larson RW, Richards MH. Daily companionship in late childhood and early adolescence: Changing developmental contexts. Child Development. 1991; 62:284–300. doi:10.2307/1131003. [PubMed: 2055123]

Larson RW, Richards MH, Sims B, Dworkin J. How urban African American young adolescents spend their time: Time budgets for locations, activities, and companionship. American Journal of Community Psychology. 2001; 29:565–597. doi: 10.1023/A:1010422017731. [PubMed: 11554153]

Martin CL, Halverson CF. A schematic processing model of sex typing and stereotyping in children. Child Development. 1981; 52:1119–1134. doi:10.2307/1129498.

McHale, SM.; Crouter, AG.; Bartko, WT. Traditional and egalitarian patterns of parental involvement: Antecedents, consequences, and temporal rhythms.. In: Featherman, D.; Lerner, R.; Perlmutter, M., editors. Life-span development and behavior. Erlhaum; New York: 1992.

McLoyd, VC. Changing demographics in the American population: Implications for research on minority children and adolescents.. In: McLoyd, VC.; Steinberg, L., editors. Studying minority adolescents: Conceptual, methodological, and theoretical issues. Lawrence Erlbaum; Mahway, NJ: 1998. p. 3-28.

McWhirter EH, Hackett G, Bandalos DL. A causal model of the educational plans and career expectations of Mexican American high school girls. Journal of Counseling Psychology. 1998; 45:166–181. doi: 10.1037//0022-0167 .45.2.166.

Mello ZR. Gender variation in developmental trajectories of educational and occupational expectations and attainment from adolescence to adulthood. Developmental Psychology. 2008; 44:1069–1080. doi: 10.1037/0012-1649 .44.4.1069. [PubMed: 18605835]

Muthén, LK.; Muthén, B. Mplus User's Guide. Muthén & Muthén; Los Angeles, CA: 2008.

Perez W, Padilla AM. Cultural orientation across three generations of Hispanic adolescents. Hispanic Journal of Behavioral Sciences. 2000; 22:390–398. doi:10.1177/0739986300223008.

Pleck JH, O'Donnell LN. Gender attitudes and health risk behaviors in urban African American and Latino early adolescents. Maternal and Child Health Journal. 2001; 5:265–272. doi: 10.1023/A: 1013084923217. [PubMed: 11822528]

Radloff L. The CES-D scale: A self-report depression scale for research in the general population. Applied Psychological Measurement. 1977; 1(3):385–401. doi: 10.1177/014662167700100306.

Raffaelli M, Ontai LL. Gender socialization in Latino/a families: Results from two retrospective studies. Sex Roles. 2004; 50:287–299. doi: 10.1023/B:SERS.0000018886.58945.06.

Sam, DL. Adaption of children and adolescents with immigrant background: Acculturation or development?. In: Bornstein, MH.; Cote, LR., editors. Acculturation and parent-child relationships: Measurement and development. Lawrence Erlbaum; Mahwah, NJ: 2006. p. 97-111.

Schafer, JL. Analysis of incomplete multivariate data. Chapman and Hall; New York: 1997.

Suárez-Orozco, C.; Suárez-Orozco, M. Transformations: Immigration, family life, and achievement motivation among Latino adolescents. Stanford University Press; Stanford, CA: 1995.

Umaña-Taylor, AJ.; Alfaro, EC. Acculturative Stress and Adaptation.. In: Villaruel, FA.; Carlo, G.; Grau, JM.; Azmitia, M.; Cabrera, N.; Chahin, TJ., editors. Handbook of Latino Psychology. Sage Publications; Thousand Oaks, CA: 2009. p. 135-152.

Census Bureau, US. 2008 American Community Survey 1-Year Estimates. U.S. Census Bureau News; 2010. from http://www.census.gov/Press-Release/www/releases/pdf/cb10ff-08_cincodemayo.pdf

Updegraff KA, McHale SM, Whiteman SD, Thayer SM, Delgado MY. Adolescents' sibling relationships in Mexican American families: Exploring the role of familism. Journal of Family Psychology. 2005; 19:512–522. doi: 10.1037/0893-3200.19.4.512 PMCID: PMC2254653. [PubMed: 16402866]

Valentine S, Mosley G. Acculturation and sex-role attitudes among Mexican Americans: A longitudinal Analysis. Hispanic Journal of Behavioral Sciences. 2000; 22:104–113. doi: 10.1177/0739986300221006.

Zahn-Waxler C, Shirtcliff EA, Marceau K. Disorders of childhood and adolescence: Gender and psychopathology. Annual Review of Clinical Psychology. 2008; 4:275–303. doi:10.1146/annurev.clinpsy.3.022806.091358.

Table 1

Correlations, Means, and Standard Deviations for Study Variables for Boys (Above the Diagonal) and Girls (Below the Diagonal)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. SES	–	.11	.07	-.22	.02	-.54	-.60	-.16	-.27	-.32	.01	-.02	.27	.16	.07
2. Familism values 1	.13	–	.24	.03	.18	.18	.10	.19	.14	-.28	-.05	-.10	-.23	.12	-.11
3. Familism values 2	.08	.11	–	.19	.06	.11	.08	.04	.23	.06	-.12	.11	-.13	-.07	.02
4. Gender role attitudes 1	-.41	.09	.13	–	.22	.15	.24	.05	.21	.20	.23	.10	.25	-.18	-.36
5. Gender role attitudes 2	-.21	-.14	.20	.41	–	.06	.08	.13	.06	-.01	.11	.02	-.06	.13	-.20
6. Mexican involvement 1	-.50	.00	-.24	.29	.14	–	.79	.28	.35	.02	-.08	-.18	-.36	.07	.04
7. Mexican involvement 2	-.51	-.09	.13	.44	.36	.76	–	.13	.34	.10	-.01	-.10	-.31	-.10	.01
8. Time with family 1	-.28	.00	.03	.24	.24	.27	.28	–	.41	-.02	.12	-.21	-.39	-.06	.11
9. Time with family 2	.01	.15	.14	.12	.03	-.01	-.07	.21	–	-.01	.08	.09	-.42	-.31	-.09
10. Depressive symptoms 1	-.21	-.22	-.04	.13	.02	.06	.02	-.09	-.01	–	.18	.48	-.02	-.12	-.09
11. Depressive symptoms 2	-.08	-.11	-.22	.09	.11	.05	.04	.04	-.13	.33	–	-.01	.19	-.13	.01
12. Risky Behaviors 1	-.08	-.24	-.19	.09	.01	.05	.00	-.24	-.16	.58	.17	–	.23	-.13	-.28
13. Risky Behaviors 2	.19	-.11	-.18	-.30	-.25	-.04	-.16	-.05	-.10	.25	.23	.27	–	-.08	-.29
14. School Expectations 1	.28	.21	.15	-.26	-.21	-.16	-.18	.02	-.03	-.32	-.13	-.37	.03	–	.23
15. School Expectations 2	.38	.01	.23	-.20	-.12	-.23	-.21	-.07	-.12	-.21	-.22	-.17	-.04	.14	–
Girls (n = 125)															
Mean	0.06	4.25	4.14	2.15	1.86	3.71	3.54	0.47	0.24	17.26	15.34	1.31	1.47	16.08	15.38
SD	0.87	0.50	0.56	0.66	0.79	0.79	0.79	0.16	0.15	11.23	10.26	0.36	0.34	2.23	2.16
Boys (n = 121)															
Mean	-0.08	4.27	4.03	2.28	2.33	3.60	3.56	0.47	0.20	15.56	12.83	1.42	1.69	15.32	15.10
SD	0.79	0.53	0.41	0.66	0.77	0.79	0.79	0.16	0.14	8.27	8.21	0.41	0.40	2.09	2.31
Total (N = 246)															
Mean	-0.01	4.26	4.08	2.21	2.09	3.66	3.55	0.47	0.22	16.43	14.11	1.36	1.57	15.71	15.25
SD	0.83	0.48	0.50	0.70	0.78	0.79	0.79	0.16	0.14	9.90	9.39	0.39	0.39	2.20	2.24

Note. Based on the Full Information Maximum Likelihood sample sizes of 125 (for girls) and 121 (for boys), correlations with an absolute value > .18 are significant at *p*<.05. Means and standard deviations represent the pooled estimates for the multiple imputations created to account for missing data.

Table 2

Correlations, Means, and Standard Deviations for Study Variables for Mexico-born Adolescents (Above the Diagonal) and U.S.-born Adolescents (Below the Diagonal)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. SES	-	.09	-.01	-.07	.07	-.43	-.28	-.04	-.22	-.28	.12	-.09	.28	.12	.20
2. Familism values 1	.15	-	.03	.15	-.15	.18	.21	.20	-.08	-.22	-.04	-.25	-.09	.20	-.03
3. Familism values 2	.00	.21	-	.32	.11	.08	.24	.21	.10	.07	-.25	-.01	-.12	.07	.00
4. Gender role attitudes 1	-.39	.02	.08	-	.10	.26	.38	.20	.17	.15	.11	.04	-.14	-.06	.03
5. Gender role attitudes 2	-.09	.11	.13	.37	-	-.09	.01	.12	.05	-.04	-.12	.25	.23	-.15	-.18
6. Mexican involvement 1	-.39	.06	-.02	.04	-.03	-	.51	.37	.30	.11	-.04	.00	-.45	.06	.01
7. Mexican involvement 2	-.51	-.07	.21	.24	.17	.75	-	.15	.40	.18	-.05	.20	-.42	-.19	-.21
8. Time with family 1	-.29	.03	-.02	.12	.20	.20	.23	-	.37	.01	.28	-.18	-.25	.09	.02
9. Time with family 2	-.09	.18	.17	.20	.02	.15	.12	.32	-	.46	.27	.28	-.38	-.37	-.26
10. Depressive symptoms 1	-.23	-.25	-.01	.13	-.05	-.01	-.04	-.12	-.03	-	.29	.47	-.17	-.16	-.28
11. Depressive symptoms 2	-.12	-.17	-.09	.06	.08	-.01	.01	-.09	-.13	.38	-	-.13	.03	-.11	-.05
12. Risky behaviors 1	-.07	-.09	-.14	.17	-.05	-.12	-.21	-.24	-.19	.53	.24	-	.50	-.18	-.27
13. Risky behaviors 2	.12	-.16	-.21	.05	-.13	-.12	-.17	-.21	-.33	.29	.21	.50	-	-.11	-.32
14. Educ. Expectations 1	.36	.15	.07	-.36	-.08	-.12	-.20	-.10	-.12	-.25	-.14	-.18	.01	-	.32
15. Educ. Expectations 2	.17	-.04	.17	-.32	-.11	.03	.10	.05	-.07	-.12	-.13	-.27	-.18	.20	-
US-born (*n* = 153)															
Mean	0.24	4.26	4.15	2.12	1.97	3.37	3.27	0.46	0.22	16.13	13.20	1.37	1.59	15.63	15.72
SD	0.79	0.51	0.46	0.50	0.71	0.74	0.76	0.15	0.15	10.09	8.74	0.38	0.38	2.33	2.15
Mexico-born (*n* = 93)															
Mean	-0.42	4.26	3.97	2.37	2.28	4.14	4.02	0.50	0.22	16.91	15.61	1.35	1.54	15.84	14.46
SD	0.73	0.54	0.50	0.46	0.64	0.58	0.59	0.17	0.13	9.62	10.22	0.42	0.39	1.96	2.17
Total (*N* = 246)															
Mean	-0.01	4.26	4.08	2.21	2.09	3.66	3.55	0.47	0.22	16.43	14.11	1.36	1.57	15.71	15.25
SD	0.83	0.52	0.50	0.50	0.70	0.78	0.79	0.16	0.14	9.90	9.39	0.39	0.39	2.20	2.24

Note. Based on the Full Information Maximum Likelihood sample size of *n* = 153, correlations with an absolute value > .16 are significant at *p* < .05 for US-born youth. Based on the FIML sample size of *n* = 93, correlations with an absolute value > .21 are significant at *p* < .05 for Mexico-born youth. Means and standard deviations represent the pooled estimates for the multiple imputations created to account for missing data.

Table 3

Path Coefficients for Auto-Regressive Cross-Lag Model for Gender Role Attitudes and Adjustment With Covariates

	Adjustment					
	Risky Behaviors		Depressive Symptoms		Education Expectations	
	β	(SE)	B	(SE)	β	(SE)
Cross-Lag Estimates						
Adjustment [I]P1 → GRA P2	.01	(.08)	-.01	(.08)	-.01	(.08)
GRA P1 → Adjustment P2	-.03	(.08)	.07	(.08)	-.12	(.08)
Stability Estimates						
GRA P1 → GRA P2	.28**	(.08)	.28**	(.08)	.28**	(.08)
Adjustment P1 → Adjustment P2	.27**	(.07)	.30**	(.07)	.15	(.08)
Main Effects						
Gender → GRA P2	.31**	(.07)	.31**	(.07)	.31**	(.07)
Nativity → GRA P2	.12	(.08)	.12	(.08)	.12	(.08)
Gender → Adjustment P2	.28**	(.07)	-.14*	(.07)	-.02	(.07)
Nativity → Adjustment P2	.02	(.08)	.12	(.08)	-.21*	(.08)
Covariate Estimates						
SES → GRA P2	.04	(.08)	.04	(.09)	.04	(.09)
SES → Adjustment P2	.18*	(.08)	.08	(.08)	.11	(.08)
Covariance Estimates						
SES with Gender	-.09	(.06)	-.09	(.06)	-.09	(.06)
SES with Nativity	-.39**	(.06)	-.39**	(.06)	-.39**	(.06)
SES with Adjustment P1	-.06	(.06)	-.24**	(.06)	.24**	(.06)
SES with GRA P1	-.35**	(.06)	-.35**	(.06)	-.35**	(.06)
GRA P1 with Adjustment P1	.11	(.06)	.14*	(.06)	-.24**	(.06)
GRA P2 with Adjustment P2	-.11	(.08)	.09	(.08)	-.09	(.08)

R^2

	Adjustment					
	Risky Behaviors		Depressive Symptoms		Education Expectations	
	β	(SE)	B	(SE)	β	(SE)
GRA P2	.22**		.22**		.22**	
Adjustment P2	.19**		.13**		.15**	

Note.

[1] Adjustment = adjustment indicator of interest in the respective column (i.e., Depressive Symptoms, Risky Behaviors, Educational Expectations). P1 = Phase 1; P2 = Phase 2. GRA = gender role attitudes.

*
p < .05

**
p < .01.

Table 4

Path Coefficients for Auto-Regressive Cross-Lag Model for Familism Values and Adjustment With Covariates

	Adjustment					
	Risky Behaviors		Depressive Symptoms		Education Expectations	
	β	(SE)	β	(SE)	β	(SE)
Cross-Lag Estimates						
Adjustment P1 → Familism P2	-.00	(.09)	.06	(.08)	-.01	(.09)
Familism P1 → Adjustment P2	-.16*	(.08)	-.02	(.08)	-.07	(.08)
Stability Estimates						
Familism P1 → Familism P2	.20*	(.09)	.20*	(.09)	.21*	(.09)
Adjustment P1 → Adjustment P2	.24**	(.07)	.30**	(.07)	.19**	(.08)
Main Effects						
Gender → Familism P2	-.10	(.08)	-.09	(.08)	-.10	(.08)
Nativity → Familism P2	-.15	(.09)	-.15	(.09)	-.15	(.09)
Gender → Adjustment P2	.29**	(.07)	-.13	(.07)	-.02	(.07)
Nativity → Adjustment P2	.02	(.08)	.13	(.08)	-.24**	(.08)
Covariate Estimates						
SES → Familism P2	-.00	(.09)	.02	(.09)	-.00	(.09)
SES → Adjustment P2	.20*	(.08)	.06	(.08)	.13	(.08)
Covariance Estimates						
SES with Gender	-.09	(.06)	-.09	(.06)	-.09	(.06)
SES with Nativity	-.39**	(.06)	-.39**	(.06)	-.39**	(.06)
SES with Adjustment P1	-.06	(.06)	-.24**	(.06)	.24**	(.06)
SES with Familism P1	.12	(.06)	.12	(.06)	.12	(.06)
Familism P1 with Adjustment P1	-.16*	(.06)	-.24**	(.06)	.17**	(.06)
Familism P2 with Adjustment P2	-.09	(.08)	-.18*	(.08)	.10	(.08)

R^2

	Adjustment					
	Risky Behaviors		Depressive Symptoms		Education Expectations	
	β	(SE)	β	(SE)	β	(SE)
Familism P2	.07		.07		.07	
Adjustment P2	.22**		.13**		.14**	

Note.

[1] Adjustment = adjustment indicator of interest in the respective column (i.e., Depressive Symptoms, Risky Behaviors, Educational Expectations). P1 = Phase 1; P2 = Phase 2.

*
p < .05

**
p < .01.

Table 5

Path Coefficients for Auto-Regressive Cross-Lag Model for Time Spent With Family and Adjustment With Covariates

	Adjustment					
	Risky Behaviors		Depressive Symptoms		Education Expectations	
	β	*(SE)*	*β*	*(SE)*	*β*	*(SE)*
Cross-Lag Estimates						
Adjustment ^{I}P1 → TWF P2	.08	(.09)	.13	(.08)	-.20*	(.08)
TWF P1 → Adjustment P2	-.14	(.08)	.09	(.08)	.09	(.07)
Stability Estimates						
TWF P1 → TWF P2	.31**	(.08)	.33**	(.08)	.30**	(.08)
Adjustment P1 → Adjustment P2	.24**	(.08)	.31**	(.07)	.19**	(.08)
Main Effects						
Gender → TWF P2	-.15*	(.08)	-.11	(.08)	-.17*	(.07)
Nativity → TWF P2	-.07	(.08)	-.09	(.08)	-.05	(.08)
Gender → Adjustment P2	.27**	(.07)	-.13	(.07)	-.03	(.07)
Nativity → Adjustment P2	.01	(.08)	.13	(.08)	-.24**	(.08)
Covariate Estimates						
SES → TWF P2	-.05	(.09)	-.02	(.09)	.00	(.09)
SES → Adjustment P2	.16*	(.08)	.08	(.08)	.15	(.08)
Covariance Estimates						
SES with Gender	-.09	(.06)	-.09	(.06)	-.09	(.06)
SES with Nativity	-.39**	(.06)	-.39**	(.06)	-.39**	(.06)
SES with Adjustment P1	-.06	(.06)	-.24**	(.06)	.24**	(.06)
SES with TWF P1	-.22**	(.06)	-.24**	(.06)	.24**	(.06)
TWF P1 with Adjustment P1	-.22**	(.06)	-.22**	(.06)	-.22**	(.06)
TWF P2 with Adjustment P2	-.27**	(.08)	-.12	(.08)	-.12	(.08)

R^2

	Adjustment					
	Risky Behaviors		**Depressive Symptoms**		**Education Expectations**	
	β	*(SE)*	*β*	*(SE)*	*β*	*(SE)*
TWF P2	.12**		.14**		.15**	
Adjustment P2	.20**		.13**		.15**	

Note.

[1] Adjustment = adjustment indicator of interest in the respective column (i.e., Depressive Symptoms, Risky Behaviors, Educational Expectations). P1 = Phase 1; P2 = Phase 2. TWF = time with family.

*
p < .05

**
p < .01.

Table 6

Path Coefficients for Auto-Regressive Cross-Lag Model for Mexican Involvement and Adjustment With Covariates

	Adjustment					
	Risky Behaviors		Depressive Symptoms		Education Expectations	
	β	*(SE)*	*β*	*(SE)*	*β*	*(SE)*
Cross-Lag Estimates						
Adjustment P1 → MCO P2	-.02	(.05)	-.03	(.05)	-.09	(.06)
MCO P1 → Adjustment P2	-.12	(.09)	-.02	(.09)	.10	(.09)
Stability Estimates						
MCO P1 → MCO P2	.64**	(.05)	.64**	(.05)	.65**	(.05)
Adjustment P1 → Adjustment P2	.26**	(.07)	.30**	(.07)	.19*	(.08)
Main Effects						
Gender → MCO P2	.05	(.05)	.05	(.05)	.04	(.05)
Nativity → MCO P2	.09	(.06)	.09	(.06)	.11	(.06)
Gender → Adjustment P2	.27**	(.07)	-.14	(.07)	-.02	(.07)
Nativity → Adjustment P2	.05	(.09)	.14	(.08)	-.26**	(.08)
Covariate Estimates						
SES → MCO P2	-.17**	(.06)	-.17**	(.06)	-.13*	(.06)
SES → Adjustment P2	.14	(.09)	.05	(.09)	.17	(.09)
Covariance Estimates						
SES with Gender	-.09	(.06)	-.09	(.06)	-.09	(.06)
SES with Nativity	-.39**	(.06)	-.39**	(.06)	-.39**	(.06)
SES with Adjustment P1	-.06	(.06)	-.24**	(.06)	.24**	(.06)
SES with MCO P1	-.51**	(.05)	-.51**	(.05)	-.51**	(.05)
MCO P1 with Adjustment P1	-.08	(.06)	.05	(.06)	-.04	(.06)
MCO P2 with Adjustment P2	-.10	(.08)	.01	(.08)	.07	(.08)

R^2

	Adjustment					
	Risky Behaviors		**Depressive Symptoms**		**Education Expectations**	
	β	*(SE)*	*β*	*(SE)*	*β*	*(SE)*
MCO P2	.63**		.63**		.63**	
Adjustment P2	.20**		.13**		.15**	

Note.

[1] Adjustment = adjustment indicator of interest in the respective column (i.e., Depressive Symptoms, Risky Behaviors, Educational Expectations). P1 = Phase 1; P2 = Phase 2. MCO = Mexican cultural orientations.

*
p < .05

**
p < .01.