

RUNNING HEAD: CULTURAL STRESSORS AND IMMIGRANT YOUTH ADJUSTMENT

In press, *Journal of Adolescent Health*.

Trajectories of Cultural Stressors and Effects on Mental Health and Substance Use

Among Hispanic Immigrant Adolescents

Seth J. Schwartz<sup>1</sup>, Jennifer B. Unger<sup>2</sup>, Lourdes Baezconde-Garbanati<sup>2</sup>, Byron L. Zamboanga<sup>3</sup>, Elma I. Lorenzo-Blanco<sup>4</sup>, Sabrina E. Des Rosiers<sup>5</sup>, Andrea J. Romero<sup>6</sup>, Miguel Ángel Cano<sup>7</sup>, Melinda A. Gonzales-Backen<sup>8</sup>, David Córdova<sup>9</sup>, Brandy M. Piña-Watson<sup>10</sup>, Shi Huang<sup>1</sup>, Juan A. Villamar<sup>11</sup>, Daniel W. Soto<sup>2</sup>,  
Monica Pattarroyo<sup>2</sup>, José Szapocznik<sup>1</sup>

<sup>1</sup>University of Miami, <sup>2</sup>University of Southern California, <sup>3</sup>Smith College, <sup>4</sup>University of South Carolina, <sup>5</sup>Barry University, <sup>6</sup>University of Arizona, <sup>7</sup>Florida International University, <sup>8</sup>Florida State University, <sup>9</sup>University of Michigan, <sup>10</sup>Texas Tech University, <sup>11</sup>Northwestern University

Preparation of this article was supported by Grants DA026594 from the National Institute on Drug Abuse and AA021888 from the National Institute on Alcohol Abuse and Alcoholism to Seth J. Schwartz, and by National Center for Advancing Translational Sciences Grant 1UL1TR000460 to José Szapocznik. We thank Maria-Rosa Velazquez, Tatiana Clavijo, Mercedes Prado, Alba Alfonso, Aleyda Marcos, Daisy Ramirez, Lissette Ramirez, and Perlita Carrillo for their hard work conducting assessments and tracking families; Dr. Judy Arroyo for her guidance and wisdom; and the study families for sharing their experiences with us.

Abstract

**Purpose:** We sought to determine the extent to which initial levels and over-time trajectories of cultural stressors (discrimination, negative context of reception, and bicultural stress) predicted well-being, internalizing symptoms, conduct problems, and health risk behaviors among recently immigrated Hispanic adolescents. Addressing this research objective involved creating a latent factor for cultural stressors, establishing invariance for this factor over time, estimating a growth curve for this factor over time, and examining the effects of initial levels (intercepts) and trajectories (slopes) of cultural stressors on adolescent outcomes.

**Methods:** A sample of 302 recently immigrated Hispanic adolescents in Miami (*Mdn* 1 year in the US at baseline) and Los Angeles (*Mdn* 3 years in the US at baseline) was recruited from public schools and assessed 6 times over a 3-year period.

**Results:** Perceived discrimination, context of reception, and bicultural stress loaded onto a latent factor at each of the first five timepoints. A growth curve conducted on this factor over the first five timepoints significantly predicted lower self-esteem and optimism, more depressive symptoms, greater aggressive behavior and rule breaking, and increased likelihood of drunkenness and marijuana use.

**Conclusions:** The present results may be important in designing interventions for Hispanic immigrant children and adolescents, including those within the current wave of unaccompanied child migrants. Results indicate targeting cultural stressors in interventions may have potential to improve well-being and decrease externalizing behaviors and substance use within this population.

**KEY WORDS:** Cultural stress, discrimination, context of reception, Hispanic, adolescent, immigrant, positive youth development, depressive symptoms, conduct problems, substance use.

### Implications and Contribution

Cultural stressors, including perceived discrimination, context of reception, and bicultural stress, may have deleterious effects on well-being, depressive symptoms, conduct problems, and substance use among recently immigrated Hispanic adolescents. Interventions are needed to offset or reduce the effects of cultural stressors on these adolescents.

Compared to their White American counterparts, US Hispanic adolescents report elevated symptoms of depression [1]; have higher rates of suicidal ideation, plans and attempts [2]; have greater prevalence of aggressive and delinquent behavior [3]; tend to initiate cigarette, alcohol, and drug use at earlier ages [4]; and tend to be less involved in positive pursuits [5]. These health disparities may stem from population-level dynamics and the intergroup processes that result from these dynamics. Specifically, defensiveness toward immigrants at the national level may drive immigration-related cultural stressors at the individual level [6].

Large immigrant flows, especially when the immigrants are perceived as belonging to a similar ethnic group, may be perceived as threatening by members of the dominant cultural group [7]. Some non-Hispanic Americans view mass Hispanic immigration as a threat to US national identity [8]. Some conservative commentators [e.g., 9] have expressed concerns about undocumented immigrants (most of whom are Hispanic) and their effects on the US social-welfare and healthcare systems. Additionally, the current crisis involving arrival of thousands of unaccompanied Central American immigrant children has served to increase the polarization of US attitudes toward Hispanic immigration [10]. The US political climate regarding Hispanic immigration might therefore be characterized as ambivalent [11]. Such a climate may contribute to creating cultural stressors for Hispanic immigrants.

### **Cultural Stressors and Their Effects on Health Outcomes**

Cultural stressors that operate in the lives of Hispanic adolescents, and that are linked with negative mental health and risk taking outcomes, include perceptions of discrimination [12], a negative context of reception (NCR) [13,14], and bicultural stress [15]. *Perceived discrimination* refers to negative interactions with others based on social group membership, such as being called derogatory names and being viewed with suspicion [16]. *Context of reception* refers to the opportunity structure available to immigrants within the receiving society [17]. *Bicultural stress* refers to challenges involved in balancing the expectations and demands of US culture and one's culture of origin [15].

Although these three cultural stress indicators are often treated as unique constructs, they all involve discomfort for immigrants and their immediate descendants [15,16,17]. Immigrant groups that are culturally divergent from the dominant culture and that are perceived as threatening often perceive themselves as being discriminated against, being blocked from opportunities within the receiving society, and experiencing trouble reconciling their cultural heritage with the society of settlement [18,19]. Further, the operationalization and measurement of these indicators suggests they are interrelated and may represent a broad construct of cultural stress.

For example, Forster et al. [13] found that perceived context of reception and bicultural stress predicted externalizing behavior among Hispanic immigrant adolescents. Schwartz et al. [23] found that perceived discrimination and negative context of reception were correlated and predicted depressive symptoms among Hispanic adolescents and parents. In short, Hispanic adolescents may perceive an ambivalent reception (including both discrimination and a negative context of reception) and/or may experience difficulty balancing the sometimes contradictory expectations of Hispanic and US cultures. Our objectives of the present study were to examine the extent to which these stressors co-occur, the stability of this co-occurrence over time, and the implications of this co-occurrence for a range of mental health and risk-taking outcomes among recent-immigrant Hispanic adolescents. Surveying recent immigrants, especially longitudinally, provides a picture of how cultural stressors impact these individuals' health early in their time in the US.

It is important to examine effects of cultural stressors on a range of adolescent health outcomes – including positive youth development (e.g., self-esteem, optimism, prosocial behavior) as well as depressive symptoms, conduct problems (e.g., aggression and rule breaking), and substance use. Given Keyes's [21] characterization of positive and problematic outcomes as independent from one another, it is essential to examine whether cultural stressors impede positive development as well as predict

maladjustment and risk. Such knowledge would inform the selection of potential outcome variables for interventions intended to reduce, or mitigate the effects of, cultural stressors.

### **The Present Study**

In the present six-wave longitudinal study, we examined the trajectory of a latent cultural stressor variable consisting of perceived discrimination, NCR, and bicultural stress among a sample of Hispanic immigrant adolescents living in Miami-Dade and Los Angeles Counties. The use of two diverse, heavily Hispanic areas provided a more representative sample of the Hispanic adolescent population than would have been available at either site alone. We modeled indices of positive youth development, depressive symptoms, externalizing behavior, and substance use as outcomes at the final study timepoint. We hypothesized that perceived discrimination, NCR, and bicultural stress would cluster onto a latent cultural stressors construct at each timepoint; and that the initial level and change trajectory of cultural stressors would negatively predict positive youth development and would positively predict depressive symptoms, externalizing behavior, and substance use.

## **Method**

### **Participants**

Participants were 302 recently immigrated adolescents from highly Hispanic areas of Miami-Dade and Los Angeles Counties. Participants were recruited primarily from English for Speakers of Other Languages (ESOL) classes. Adolescents were completing or entering the ninth grade at the time of the baseline assessment. The study was approved by the Institutional Review Boards at the University of Miami, the University of Southern California, and each of the participating school districts.

The sample was balanced by gender (53% boys), with a mean age of 14.51 years ( $SD=0.88$ ) at baseline. Adolescents in Miami ( $n=152$ ) had been in the US for a median of 1 year (interquartile range 0-3 years) and were primarily from Cuba, (61%), the Dominican Republic (8%), Nicaragua (7%), Honduras (6%), Colombia (6%), and other Hispanic countries (12%). Adolescents in Los Angeles ( $n=150$ ) had been

in the US for a median of 3 years (interquartile range 1-4 years) and were primarily from Mexico (70%), El Salvador (9%), Guatemala (6%), and other Hispanic countries (15%). The mean annual household income, as reported by parents, was \$30,854 (*SD* \$10,824).

### **Procedures**

Baseline data were gathered from 10 public schools in Miami and 13 in Los Angeles during Summer/Fall 2010. Subsequent timepoints occurred during Spring 2011, Fall 2011, Spring 2012, Fall 2012, and Spring 2013. School and student recruitment procedures are described in detail elsewhere [22]. Staff members called parents to verify that the adolescent had been in the US for  $\leq 5$  years (our definition of recent immigrants) and that the family planned to remain in the South Florida or Southern California area during the course of the study. Parents whose adolescents met these inclusion criteria were invited to schedule evening or weekend assessment appointments at a convenient location. Adolescents received a movie ticket for each timepoint in which they participated. A description of participant flow through the study is provided in Schwartz et al. [20].

Each participant completed the assessment battery in English or Spanish, according to her/his preference. The percentage of participants completing assessments in Spanish was 84% at baseline and declined to 68% at Time 6. Miami participants (98%) were more likely than Los Angeles participants (71%) to complete their assessments in Spanish at baseline,  $\chi^2(1, N=302)=35.10, p<.001$ ; and this pattern continued throughout the study.

Assessments were completed using an audio computer-assisted interviewing (A-CASI) system [24] on laptop computers. The system displays each item and response choices on the computer screen while the item and response choices are read to the participant through headphones.

Following Knight et al. [25], rigorous tracking procedures were used to maintain contact with participants between assessment timepoints. At baseline, we obtained the names and contact information for three “contact persons” who would know how to reach the family if we were unable.

Names and phone numbers for these contact persons were updated at each assessment timepoint. Our assessors also called each family once every 2-3 months. As a result, we were able to retain 85% of the original sample across the six study waves. In the present analyses, we used maximum likelihood estimation so that all 302 adolescents would be included in analysis.

### Measures<sup>1</sup>

**Cultural stressors** were included in the present analyses at each of the first five timepoints.

*Bicultural stress* was measured using the Bicultural Stress Scale [15]. This measure consists of 20 items (e.g., “I feel embarrassed because of my accent”), each rated on a response scale from 1 (*Never happened to me*) to 4 (*Very stressful*). Across Times 1-5, Cronbach’s alphas ranged from .89-.94.

*Perceived discrimination* was assessed using a 7-item (e.g., “How often do people your age treat you unfairly or negatively because of your ethnic background?”) measure developed by Phinney et al. [26]. Items ask about experiences such as being called names, followed around stores, and otherwise mistreated by members of the receiving community due to one’s ethnic background. The scale uses a 5-point Likert response format ranging from 0 (*Not at all*) to 4 (*Almost always*). Across Times 1-5, alphas ranged from .89-.94.

*Perceived context of reception* was assessed using a 6-item measure developed for this study and validated by Schwartz et al. [23]. Items refer to lack of opportunities available in the receiving community or in the US generally (e.g., “I don’t have the same chances in life as people from other countries.”). Across Times 1-5, alphas ranged from .74-.85.

**Adolescent outcomes** were included in the present analyses at Time 6, with controls for baseline levels of each outcome variable. We included outcomes in four general domains – positive youth development, depressive symptoms, conduct problems, and substance use.

---

<sup>1</sup>All scales had acceptable reliability for both English and Spanish administration across sites (range .72-.95).



We assessed *positive youth development* in terms of self-esteem, optimism, and prosocial behavior. Self-esteem was measured using the Rosenberg [27] Self-Esteem Scale. This measure consists of 10 items (e.g., “I feel that I have a number of good qualities”). Negatively worded items are reverse-coded and summed with the positively worded items to create a total score for the scale ( $\alpha=.74$  at baseline). Optimism was measured using the Children’s Hope Scale [28]. This measure consists of six items assessing the extent to which young people are optimistic about their future (e.g., “I can think of many ways to get the things in life that are most important to me.”). Cronbach’s alpha at baseline was .86. Prosocial behavior was measured using an adapted version the Prosocial Tendencies Measure [29], which consists of 19 items assessing the extent to which participants typically help others in a number of situations (e.g., “When people ask me to help them, I help them as quickly as I can”). We derived a total score ( $\alpha=.86$  at baseline) by summing responses to all 19 items.

*Depressive symptoms* were assessed using the Center for Epidemiologic Studies Depression Scale (CES-D) [30], which consists of 20 items asking how often various depressive symptoms (e.g., lack of appetite, difficulty sleeping, lethargy) occurred during the week prior to assessment. Cronbach’s alpha was .93 in the present sample at baseline.

*Conduct problems* were measured in terms of aggressive and rule-breaking behavior using corresponding subscales from the Youth Self-Report [31]. The aggressive behavior ( $\alpha=.88$  at baseline) and rule-breaking behavior ( $\alpha=.87$  at baseline) subscales consist of 17 and 15 items, respectively. Sample items include “I physically attack people” (aggressive behavior) and “I set fires” (rule-breaking behavior).

*Substance use* was assessed in terms of cigarette smoking, alcohol consumption, binge drinking, drunkenness, and marijuana use using an adapted version of the Monitoring the Future survey [4]. Adolescents were asked whether they had engaged in each substance use behavior in their lifetimes and in the 30 and 90 days prior to assessment. Base rates for the 30 days prior to assessment were low

(ranging from 4% for marijuana use to 7% for alcohol use), so we analyzed use/nonuse of each substance within the 90 days prior to assessment.

## Results

Analyses for the present study were conducted in four primary steps: (a) defining a latent cultural stress variable at baseline, (b) examining invariance of this factor over time to ensure that we could include the factor in latent growth curve analyses, (c) estimating a latent growth curve for the cultural stress factor, and (d) examining effects of the cultural stress trajectory on outcome variables at Time 6, controlling for baseline levels.

### Step 1: Creating the Latent Cultural Stress Variable

We created the latent cultural stress variable at baseline using perceived discrimination, perceived NCR, and bicultural stress (see Figure 1). Model fit was ascertained using three fit indices: the chi-square index ( $\chi^2$ ), which tests the null hypothesis of perfect model fit; the comparative fit index (CFI), which reflects the improvement in fit between the specified model and a null model with no paths or latent variables; and the root mean square error of approximation (RMSEA), which reflects the extent to which the model-implied covariance structure deviates from the covariance structure observed in the data [33]. Adequate model fit is defined as  $CFI \geq .90$  and  $RMSEA \leq .08$ . The chi-square index is reported but is not used to evaluate model because it is overpowered [33].

A model with the three cultural stress indicators was fully saturated, and model fit could not be estimated. However, when we created two parceled indicators [34] for each of the three cultural stress indices (giving us six indicators in total), the parceled model fit the data well,  $\chi^2(5)=4.96$ ,  $p=.42$ ;  $CFI=1.00$ ;  $RMSEA<.001$ . This suggests that the original model likely also fits well. Within the original model with each cultural stress variable as a single indicator, standardized loadings were: perceived discrimination,  $\lambda=.73$ ; perceived negative context of reception,  $\lambda=.50$ ; and bicultural stress,  $\lambda=.63$ .

### Step 2: Invariance of the Cultural Stress Factor over Time

One of the primary assumptions of latent growth modeling, which we used to examine the effects of cultural stressors on adolescent outcomes, is that the same variable or construct is included at each study timepoint. Therefore, testing the structural invariance of the cultural stress factor across time is a prerequisite to including this factor in a growth curve model [35]. To evaluate the extent to which the structure of the cultural stress factor was invariant across the first five timepoints, we compared the fit of three models to the data: (a) an unconstrained model with all factor loadings and item intercepts free to vary across timepoints, (b) a metric invariance model with each corresponding factor loading (but not intercepts) constrained equal across timepoints, and (c) a scalar invariance model with each corresponding factor loading, and each corresponding item intercept, constrained equal across timepoints [32]. Configural invariance – the fit of model (a) to the data – was ascertained using the chi-square, CFI, and RMSEA.

Following Little [35], tests of *metric invariance* were conducted by comparing models (a) and (b); and tests of *scalar invariance* were conducted by comparing models (b) and (c). For the assumption of longitudinal invariance to be satisfied, both of these model comparisons would have to yield a conclusion of invariance. Such a conclusion would be supported provided that at least two of three criteria were satisfied: nonsignificant  $\Delta\chi^2$ ,  $\Delta\text{CFI} < .01$ , and  $\Delta\text{RMSEA} < .01$  [36].

The configural invariance model fit the data adequately,  $\chi^2(66)=137.81$ ,  $p < .001$ ; CFI=.93; RMSEA=.060 (90% CI = .046-.074). Both metric ( $\Delta\chi^2(8)=12.70$ ,  $p=.12$ ;  $\Delta\text{CFI}=.004$ ;  $\Delta\text{RMSEA}=.001$ ) and scalar ( $\Delta\chi^2(8)=8.39$ ,  $p=.40$ ;  $\Delta\text{CFI} < .001$ ;  $\Delta\text{RMSEA}=.003$ ) invariance were supported, suggesting that the structure of the latent cultural stress variable is equivalent over time. We were therefore able to estimate growth curves for cultural stress.

### **Step 3: Estimating Growth Curves for Cultural Stressors**

Because growth curves for latent variables often do not fit the data well (David MacKinnon, personal communication, October 2005), at each timepoint we created a composite score by standardizing each

of the indicators, weighting each indicator by its baseline CFA loading, and summing the standardized and weighted scores. We then used these composite cultural stress scores as indicators in a latent growth curve model, conducted within a structural equation modeling framework (see Figure 2). This model fit the data well,  $\chi^2(10)=13.75$ ,  $p=.18$ ; CFI=.99; RMSEA=.035 (90% CI=.000-.077). Although the mean linear slope was nonsignificant (slope=-0.29,  $p=.26$ ), there was significant variability around this mean slope ( $s^2=4.56$ ,  $p<.01$ ), indicating that cultural stress changed among some participants but not among others. There was also significant variability around the intercept ( $s^2=80.27$ ,  $p<.001$ ). Neither quadratic nor cubic slopes were significantly different from zero.

#### **Step 4: Cultural Stressor Growth Curves as Predictors of Adolescent Outcomes**

Next, we allowed the intercept and linear slope for cultural stressors to predict the outcome variables. Age, gender, site, years in the US, and family structure (one versus two parent figures in the home) were controlled, along with baseline levels of the outcome variables. Covariates were modeled as additional predictors of each outcome (in addition to the cultural stressor intercept and slope). All continuous outcomes (positive youth development, depressive symptoms, and conduct problems) were included in a single model to obtain fit indices. Because of low base rates, each of the substance use variables was included as a single outcome in a separate model (rather than including all substances within a single model). Models with multiple categorical outcomes may not converge in cases where crosstabulating pairs of outcomes results in empty cells [36].

This final model fit the data adequately,  $\chi^2(113)=212.89$ ,  $p<.001$ ; CFI=.93; RMSEA=.054 (90% CI=.043-.065). The cultural stressor intercept predicted Time 6 scores for self-esteem, optimism, depressive symptoms, aggressive behavior, rule breaking, drunkenness, and marijuana use. The cultural stressor slope was significantly predictive of self-esteem, optimism, aggressive behavior, and rule breaking (see Table 1). Because we controlled for baseline levels of all of these outcome variables, the cultural stressor intercept and slope can be interpreted as predicting developmental changes in the outcomes. We used

multigroup invariance testing (for continuous outcomes) and Predictor X Site interaction terms (for dichotomous outcomes) to test for moderation by site. No significant moderated effects emerged.

### Discussion

In this study, we evaluated the latent structure among three prominent cultural stressors, and examined how the longitudinal trajectory of this cultural stress composite predicted developmental changes in positive youth development, depressive symptoms, externalizing behavior, and substance use among Hispanic immigrant adolescents. Given the current political climate in the US regarding Hispanic immigration, cultural stressors and their effects on developmental and health outcomes are timely issues to examine among Hispanic immigrant adolescents. Exposure to both heritage and US cultures may create bicultural stress (pressures to balance the two cultural streams) and may increase perceptions of discriminatory actions and of an unfavorable context of reception [15,16,17].

As hypothesized, perceived discrimination, NCR, and bicultural stress loaded onto a latent cultural stressor variable, and the structure of this variable was consistent over the first five waves of the study (approximately ages 14-16). This finding suggests that the three cultural stressors that we examined overlapped similarly over time among our sample of Hispanic immigrant adolescents, and that the construct of cultural stress appeared to carry a similar meaning across time.

The average trajectory for cultural stressors tended to be characterized by nonsignificant change over time, although there was significant variability in trajectories across adolescents. Both initial levels and linear trajectories of cultural stressors predicted self-esteem, optimism, aggressive behavior, and rule breaking. Only initial levels of cultural stressors predicted depressive symptoms and the odds of cigarette smoking, drunkenness, and marijuana use.

Early experiences of discrimination, NCR, and bicultural stress shortly after immigration may predict maladjustment and risky behavior *independently of* (or in addition to) the over-time trajectory of these cultural stressors. This finding suggests a need for intervention and policy efforts toward Hispanic

immigrant adolescents. Cross-sectional studies suggest that experiences of discrimination and bicultural stress may be associated with mental health problems, externalizing behavior, and substance use [13,26,37]. The present results reinforce and extend these conclusions – cultural stressors can have not only immediate, but also far-reaching, effects on adjustment and health outcomes. For self-esteem, optimism, aggressive behavior, and rule breaking, the initial levels *and* trajectories of cultural stressors were predictive – suggesting that, with regard to positive youth development and externalizing behavior, cultural stressors that occur soon after immigration and that worsen over time may be especially deleterious. It appears important for policy and preventive interventions to help offset the effects of cultural stressors on adjustment among Hispanic immigrant adolescents. Mentoring or family-based programs might be well-suited to helping adolescents to cope with stressors that may accompany immigration [38]. It may also be important to design interventions to increase support for immigrants among receiving-society members. A number of strategies may have potential for doing this, including encouraging intergroup contact [39].

### **Limitations**

The present results should be interpreted in light of at least four limitations. First, although we collected data in two large urban areas that receive large numbers of Hispanic immigrants, we did not collect data from emerging immigrant communities – states and municipalities not accustomed to receiving immigrants. The immigrant experience could be more stressful in areas where adequate supports are not available. Second, although our study spanned three years, a longer study period would have allowed us to make even stronger statements regarding long-term effects of cultural stressors. Third, because we did not ask about documentation status, we do not know the extent to which undocumented participants may have been less likely to enroll in the study or more likely to experience cultural stressors.

### **Conclusion**

Despite these limitations, our results suggest that cultural stressors can exert negative effects on Hispanic immigrant adolescents over time. These results call for individual and population level intervention programs designed to help modulate or offset the negative effects of cultural stressors among recently immigrated Hispanic adolescents. Although cultural stressors may be inevitable due to intergroup processes, helping Hispanic adolescents to manage these stressors may reduce the negative adjustment and health effects of these stressors. Community- and population-based interventions and policies may also be designed to increase intergroup contact between Hispanic immigrants and other US residents – which might convince some non-immigrant Americans to join the cause of reducing discrimination and other stressors for immigrants [40]. We hope that our results will inform intervention work in this direction.

References

1. McLaughlin KA, Hilt LM, Nolen-Hoeksema S. Racial/ethnic differences in internalizing and externalizing symptoms in adolescents. *J Abnorm Child Psychol* 2007;35: 801-16.
2. Kann L, Kinchen S, Shanklin SL, Flint KH, Kawkins J, Harris WA, et al. Youth risk behavior surveillance--United States, 2013. *MMWR Surveill Summ* 2014;63.
3. Gibson CL, Miller HV. Crime and victimization among Hispanic adolescents: A multilevel longitudinal study of acculturation and segmented assimilation. Available at <https://www.ncjrs.gov/pdffiles1/nij/grants/232278.pdf>. Accessed August 26, 2014.
4. Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE, Miech RA. Monitoring the Future national survey results on drug use, 1975–2013: Volume I, Secondary school students. Ann Arbor: University of Michigan, Institute for Social Research, 2014.
5. Torney-Purta J, Barber CH, Wilkenfeld B. Latino adolescents' civic development in the United States: Research results from the IEA Civic Education Study. *J Youth Adolescence*, 2007;36: 111-125.
6. Zagefka H, Gonzalez R, Brown R. How minority members' perceptions of majority members' acculturation preferences shape minority members' own acculturation preferences: Evidence from Chile. *Brit J Soc Psychol* 2011;50: 216-33.
7. Coenders M, Lubbers M, Scheepers P, Verkuyten M. More than two decades of changing ethnic attitudes in the Netherlands. *J Soc Issues*, 2008;64: 269-285.
8. Huntington SP. *Who are we? Challenges to America's national identity*. New York: Simon and Schuster, 2004.
9. Buchanan PJ. *Suicide of a superpower: Will America survive to 2025?* New York: St. Martin's Press, 2011.



10. Newland K. The child migration crisis in the United States. Available at <http://migrationpolicy.org/programs/us-immigration-policy-program/child-migration-crisis-united-states>. Accessed August 26, 2014.
11. Roth BM. The perils of diversity: Immigration and human nature. Washington, DC: Washington Summit Publishers, 2010.
12. Sawyer PJ, Major B, Casad BJ, Townsend SS, Mendes WB. Discrimination and the stress response: psychological and physiological consequences of anticipating prejudice in interethnic interactions. *Am J Public Health* 2012;102: 1020-1026.
13. Forster M, Grigsby T J, Soto DW, Schwartz SJ, Unger JB. The role of bicultural stress and perceived context of reception in the expression of aggression and rule breaking behaviors among new-immigrant Hispanic youth. *J Interpers Violence*, in press.
14. Schwartz SJ, Unger JB, Des Rosiers SE, Huang S, Baezconde-Garbanati L, Lorenzo-Blanco EI, et al. Substance use and sexual behavior among recent Hispanic immigrant adolescents: Effects of parent-adolescent differential acculturation and communication. *Drug Alcohol Depend* 2012;125: S26-S34.
15. Romero AJ, Roberts RE. Stress within a bicultural context for adolescents of Mexican descent. *Cult Divers Ethnic Minor Psychol* 2003;9: 171-184.
16. Viruell-Fuentes EA. Beyond acculturation: Immigration, discrimination, and health outcomes among Mexicans in the United States. *Soc Sci Med* 2007;65: 1524-35.
17. Portes A, Rumbaut RG. *Immigrant America: A portrait* (3<sup>rd</sup> ed.). Berkeley: University of California Press, 2006.
18. Steiner N. *International migration and citizenship today*. New York: Guilford, 2009.
19. Suárez-Orozco C, Suárez-Orozco MM. *Children of immigration*. Cambridge, MA: Harvard University Press, 2001.

20. Schwartz SJ, Unger JB, Des Rosiers SE, Lorenzo-Blanco EI, Zamboanga BL, Huang S, et al. Domains of acculturation and their effects on substance use and sexual behavior in recent Hispanic immigrant adolescents. *Prev Sci* 2014;15: 385-96.
21. Keyes CLM. Mental health in adolescence: Is America's youth flourishing? *Am J Orthopsychiatry* 2006;76: 395-402.
22. Schwartz SJ, Unger JB, Mason CA, Huang S, Baezconde-Garbanati L, Lorenzo-Blanco EI, et al. Developmental trajectories of acculturation: Links with family functioning and mental health in recent-immigrant Hispanic adolescents. *Child Dev*, in press.
23. Schwartz SJ, Unger JB, Lorenzo-Blanco E, Des Rosiers SE, Villamar JA, Soto DW, et al. Perceived context of reception among recent Hispanic immigrants: Conceptualization, instrument development, and preliminary validation. *Cult Divers Ethnic Minor Psychol* 2014;20: 1-15.
24. Turner CF, Ku L, Rogers SM, Lindberg LB, Pleck JH, Sensenstien LH. Adolescent sexual behavior, drug use, and violence: Increased reporting with computer survey technology. *Science* 1998;280: 867-873.
25. Knight GP, Roosa MW, Umaña-Taylor AJ. Methodological challenges in studying ethnic minority or economically disadvantaged populations. Washington, DC: American Psychological Association, 2009.
26. Phinney JS, Madden T, Santos L. Psychological variables as predictors of perceived ethnic discrimination among minority and immigrant adolescents. *J Applied Soc Psychol* 1998;28: 937-953.
27. Rosenberg M. *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press, 1968.
28. Edwards LM, Ong AD, Lopez SJ. Hope measurement in Mexican American youth. *Hisp J Behav Sci* 2007;29: 225-241.

29. Carlo G, Randall BA. The development of a measure of prosocial behaviors for late adolescents. *J Youth Adolesc* 2002;31: 31-44.
30. Radloff L. The CES-D scale: A self-report depression scale for research in the general population. *Appl Psychol Meas* 1977;7: 385-401.
31. Achenbach TM, Dumenci L, Rescorla LA. Ten-year comparisons of problems and competencies for national samples of youth: Self, parent, and teacher reports. *J Emot Behav Disord* 2002;10: 194-203.
32. Dimitrov DM. Testing for factorial invariance in the context of construct validation. *Meas Eval Couns Dev* 2010;43: 121-149.
33. West SG, Taylor AB, Wu W. Model fit and model selection in structural equation modeling. In: Hoyle RH, ed. *Handbook of structural equation modeling*. New York: Guilford, 2012: 209-231.
34. Little TD, Cunningham WA, Shahar G, Widaman KF. To parcel or not to parcel: Exploring the question, weighing the merits. *Struct Equ Modeling* 2002;9: 151-173.
35. Little TD. 2013. *Longitudinal structural equation modeling*. New York: Guilford, 2013.
36. Muthén LK, Muthén BO. *Mplus user's guide, version 6*. Los Angeles: Muthén & Muthén, 2010.
37. Okamoto J, Ritt-Olson A, Soto D, Baezconde-Garbanati L, Unger JB. Perceived discrimination and substance use among Latino adolescents. *Am J Health Behav* 2009;33: 718-727.
38. Cervantes, R. C., Goldbach, J. T., & Santos, S. Familia adelante: A multi-risk prevention intervention for Latino families. *J Prim Prev* 2011;32: 224-234.
39. Hammack PL. Identity, conflict, and coexistence: Life stories of Israeli and Palestinian adolescents. *J Adolesc Res* 2006;21: 323-369.
40. Subašić, E., Reynolds, K. J., & Turner, J. C. The political solidarity model of social change: Dynamics of self-categorization in intergroup power relations. *Pers Soc Psychol Rev* 2008;12: 330-352.

Table 1. *Adolescent Outcomes by Cultural Stressor Intercept and Linear Slope*

Outcome	Cultural Stressor Intercept	Cultural Stressor Slope
Self-Esteem	-.24 <sup>**</sup>	-.29 <sup>***</sup>
Optimism	-.24 <sup>***</sup>	-.15 <sup>*</sup>
Prosocial Behavior	.03	.02
Depressive Symptoms	.25 <sup>**</sup>	.12
Aggressive Behavior	.42 <sup>***</sup>	.43 <sup>***</sup>
Rule Breaking	.37 <sup>***</sup>	.37 <sup>***</sup>
Cigarette Smoking <sup>a</sup>	OR = 1.06	OR = 1.18
Alcohol Use <sup>a</sup>	OR = 1.04	OR = 0.95
Binge Drinking <sup>a</sup>	OR = 1.04	OR = 0.91
Drunkenness <sup>a</sup>	OR = 1.07 <sup>**</sup>	OR = 1.00
Marijuana Use <sup>a</sup>	OR = 1.09 <sup>**</sup>	OR = 1.10

<sup>a</sup>Analyzed as a dichotomous (yes/no) outcome.

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$

Figure 1. *Latent Cultural Stress Variable*

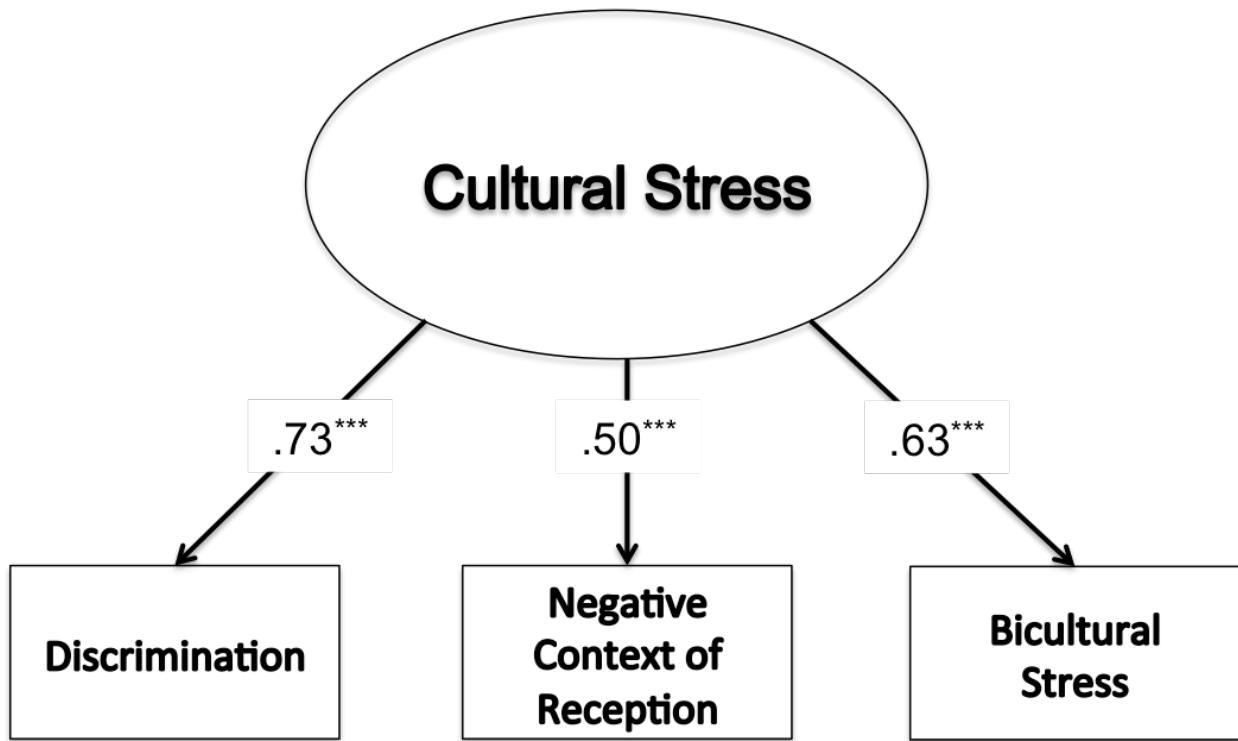


Figure 2. Latent Cultural Stress Growth Model Predicting Time 6 Outcomes

