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Disentangling Relationships Between Bicultural Stress and Mental Well-Being Among Latinx Immigrant Adolescents

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Background: The Acculturative Process and Context Framework (Ward & Geeraert, 2016) proposes that acculturative stressors influence psychological well-being over time. In fact, extant literature has linked bicultural stress with psychological functioning; yet, no studies have explored the causal dominance of bicultural stress. The purpose of the present study was to evaluate the directionality of prospective relations among bicultural stress and psychosocial functioning (i.e., depressive symptoms, hopefulness, and self-esteem) in Latinx immigrant adolescents across 5 waves. ***Method:*** There were 303 Latinx

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adolescents who were recruited for this study from Los Angeles and Miami and were assessed across 5 waves at 6-month intervals. Adolescents were 14.50 years old on average (SD = .88) and 53.16% were male. Adolescents reported living in the United States for 2.07 years on average (SD = 1.87). A Random-Intercept Cross-Lagged Panel Model (RI-CLPM) was used to examine the between- and within-person relations among bicultural stress, depressive symptoms, hopefulness, and self-esteem in a comprehensive model. ***Results:*** The comprehensive RI-CLPM including bicultural stress, depressive symptoms, hopefulness, and self-esteem exhibited excellent model fit. Between-person, trait-like relations among constructs ranged from small to large, as expected. Within-person, cross-lagged estimates among constructs were overall inconsistent, with some evidence that, within individuals, self-esteem influences later hopefulness. ***Conclusion:*** Findings from this study indicate that the RI-CLPM is an effective strategy to examine bicultural stress and well-being processes among adolescents. There is a need for further research examining bicultural stress among Latinx immigrant youth, particularly within prevention and intervention studies.

What is the public health significance of this article?
Psychological well-being is a significant health indicator during adolescence and is associated with a better transition to adulthood. The current study examines the direction of the relationship between stress and psychological well-being among Latinx youth. Previous research has found that stress from moving between two cultures is predictive of health outcomes for Latinx youth. Our findings demonstrate that relations between bicultural stress and psychological functioning are because of stable differences between individuals.

Keywords: bicultural stress, depressive, hopefulness, immigrant, youth

Decades of evidence demonstrate mental health disparities of U.S. Latinx youth compared with non-Latinx white and African American youth (Centers for Disease Control and Prevention, 2015). Yet, there are few longitudinal studies on psychological functioning with this population, particularly those that include or focus on cultural factors. Bicultural stress, which is stress because of navigating between two cultures with different values, norms, and languages, has been found to be linked to psychological functioning among Latinx immigrant youth (Cano et al., 2015; Piña-Watson, Llamas, & Stevens, 2015; Romero, Carvajal, Valle, & Orduña, 2007; Schwartz et al., 2015). The Acculturative Process and Context Framework (Ward & Geeraert, 2016) argues that cultural distance between cultures leads to increased bicultural stress which contributes to worse psychological well-being over time. Yet, previous theories of stress suggest more of a transactional relation between stress and well-being, such that there is more of a bidirectional relationship that is rooted in between-person differences rather than within-person changes (Beck, 1967). The purpose of the current study is to examine whether bicultural stress is causally dominant over time in the prediction of psychological functioning, specifically for depressive symptoms, self-esteem, and hopefulness among Latinx immigrant youth. Disentangling the direction of this relationship through cutting edge advanced statistical analyses can shed light on origins of mental health disparities that can inform prevention and intervention strategies (Duarté-Vélez & Bernal, 2008; Romero, Edwards, Bauman, & Ritter, 2013; Zayas, 2011).

Acculturation Process and Context Framework

The Acculturation Process and Context Framework argues that acculturative stress ultimately influences the psychological well-being of young people. This framework emphasizes how the bicultural context of the acculturation process influences individual well-being, while specifically acknowledging that when the two cultures have more distance between them because of dissimilarity there is likely to be more challenges and more stress. Youth acculturation stress is influenced by the processes of host culture acquisition (i.e., acquiring identity, values, beliefs, and behaviors of the receiving culture) and heritage culture retention (i.e., acquiring or retaining one's heritage identity, values, beliefs, and behaviors; Berry, 2003; LaFromboise, Coleman, & Gerton, 1993; Morris, Chiu, & Liu, 2015; Schwartz, Unger, Zamboanga, & Szapocznik, 2010; Schwartz & Zamboanga, 2008; Ward & Geeraert, 2016). Building on this contemporary conceptualization of acculturation, the Acculturation Process and Context Framework (Ward & Geeraert, 2016) provides a conceptual model to understand how moving between more than one culture is a process over time that influences acculturative stressors and cultural awareness in a manner that influences psychological well-being of the individual.

A form of acculturative stress, *bicultural stress*, specifically refers to the subjective perception of degree of stressfulness because of navigating more than one cultural or linguistic context on a daily basis (Romero & Roberts, 2003). Bicultural stressors reflect the challenges that youth may experience as they adapt to the receiving culture and maintain their cultural heritage. Consistent with the ecological context approach of the Acculturation Process and Context Framework (Ward & Geeraert, 2016), bicultural context of stress considers stress within multiple socioecological contexts, including among friends/peers, schools, within their own families, and in their communities. Bicultural stress includes daily hassles associated with discrimination, family cultural conflict, and pressure to be bilingual, all of which may lead to negative psychological functioning outcomes (Lazarus, 1997; Lewis et al., 2009; Romero & Roberts, 2003).

This process of experiencing and choosing between cultures may be perceived as stressful for some youth, but not all, and for this reason, an individual-level subjective appraisal of stress is

recommended (Lazarus, 1997). There are some suggestions that acculturative stress increases and then decreases, yet other studies demonstrate a high degree of individual variability (Ward & Geeraert, 2016). The stress appraisal perspective is a common theoretical approach in psychology to account for individual differences. However, there are unclear patterns of stress over time, which is another reason why there is a need for more advanced statistical analysis to examine how acculturative stress influences mental well-being over time.

Directionality of Stress

Research on bicultural stressors is rooted in theories of general stress and informed by acculturation theory, which is driven more broadly by societal patterns of culture, cultural acceptance, and immigration (Berry, 2003; Schwartz et al., 2010). The Acculturation Process and Context Framework emphasizes how the specific experience of acculturation that immigrant youth undergo is strongly influenced by socioecological contexts at the societal level, institutional level, and familial level (Ward & Geeraert, 2016). Thus, with this contextualization specific to cultural contexts of stress, this framework argues that individual psychological well-being is negatively affected by acculturative stress.

On the other hand, Transactional Interpersonal Theories of Depressive Symptoms (Coyne, 1976; Hammens, 1991; Joiner & Coyne, 1999; Rudolph & Lambert, 2007) are based on a social interactionist perspective such that dynamic interactions between the individual and their environment contribute to patterns of behavior and emotion over time. These theories suggest that depressed individuals may elicit stress within their interpersonal interactions because they behave in ways that reflect their feelings of sadness, isolation, inability to concentrate, lack of energy, loneliness, and low self-worth (American Psychiatric Association, 2013; Beck, 1967).This theoretical approach would argue that compared with individuals who are not depressed, depressed individuals are more likely to report higher levels of stress. Thus, according to this rationale, it is likely that those who are depressed are more likely to elicit stressors in their environment. In the current study we will examine the causal dominance and possible bidirectional effects between bicultural stress and psychological functioning.

Cross-Sectional Studies

Extant cross-sectional research on bicultural stress among adolescent populations has consistently demonstrated that more bicultural stress is linked with worse psychological functioning. For example, several studies have linked bicultural stress with more depressive symptoms (Crockett et al., 2007; Piña-Watson, Dornhecker, & Salinas, 2015; Romero & Roberts, 2003; Stein, Gonzalez, & Huq, 2012). Beyond depressive symptoms, bicultural stress has also been linked with worse psychological well-being (Romero, Carvajal, et al., 2007), lower self-esteem and lower life satisfaction (Piña-Watson, LLamas, et al., 2015; Piña-Watson, Ojeda, Castellon, & Dornhecker, 2013; Smokowski & Bacallao, 2007). That being said, cross-sectional research examining bicultural stress and psychological functioning has made it difficult to establish directionality of these effects over time (Maxwell & Cole, 2007).

Longitudinal Studies

Prospective studies have further examined the relation and directionality between bicultural stress and psychological functioning. A study utilizing growth curve analysis demonstrated that there is support for changes in bicultural stress and psychological functioning over time (Schwartz et al., 2015). In another study, more bicultural stress was predictive of later timepoints for higher depressive symptoms, substance use, and other externalizing behaviors using path analysis among Latinx immigrant youth (Cano et al., 2015). There is also evidence among first and second generation immigrant youth (majority Latinx) that increases in bicultural stressors are associated with increases in mental health problems over time (Sirin, Gupta, et al., 2013; Sirin, Ryce, Gupta, & Rogers-Sirin, 2013). In a longitudinal study with Latinx youth (66% born outside of the United States) and parents, results indicate the bicultural stress is predictive of future youth internalizing problems (Smokowski, Rose, & Bacallao, 2010). In fact, across these three studies, mental health internalizing factors decreased over time for their sample of immigrant youth (Sirin, Gupta, et al., 2013; Sirin, Ryce, et al., 2013; Smokowski et al., 2010). However, no study, to our knowledge, has examined the potential bidirectionality of the relationship between bicultural stress and psychological functioning.

The Present Study

The purpose of the present study is to examine causal dominance of bicultural stress in relation to well-being within a comprehensive model that includes multiple markers of psychological functioning, including depressive symptoms, self-esteem, and hopefulness. We utilize a sophisticated statistical technique that allows us to examine whether there are between-person (i.e., trait-like) relations among bicultural stress and mental well-being (i.e., depressive symptoms, self-esteem, and hopefulness). This approach permits us to explore both the Acculturation Context and Process model argument that acculturative stress leads to worse psychological well-being as compared with the transactional models of stress that argue that stress and well-being are primarily between-person stable differences.

Method

Participants

Data for the present study were drawn from a larger longitudinal project examining acculturation, family functioning, and health risk behaviors among recently arrived Latinx adolescents (Schwartz et al., 2014). There were 303 adolescents who were recruited for this study from Los Angeles (n = 150) and Miami (n = 153). See Table 1 for descriptive statistics of demographic variables by site. Participants completed a battery of measures that included a baseline measure of demographic questions such as age, sex, and nationality. Adolescents across sites were 14.51 years old on average (SD = .88), and 53.16% were male. Adolescents reported having lived in the United States for a relatively short period of time (M = 2.07 years, SD = 1.87). Likewise, approximately half of adolescents reported living in South Florida or Southern California for less than 2 years (51%). Adolescents also

Table 1
Descriptive Statistics by Recruitment Site

Variable	Los Angeles		Miami	
	M/%	*SD*	*M*/%	*SD*
Age	14.44	.79	14.57	.95
Sex	57.43%		49.02%	—
Ethnic group				
United States	4.47%	—	—	—
Cuban	—	—	60.53%	—
Nicaraguan	3.33%	—	6.58%	—
Honduran	4.00%	—	5.92%	—
Puerto Rican	—	—	.66%	—
Colombian	—	—	5.92%	—
Mexican	70.00%	—	2.63%	—
Venezuelan	—	—	1.32%	—
Dominican	—	—	7.89%	—
Salvadorian	8.67%	—	7.89%	—
Panamanian	—	—	.66%	—
Peruvian	2.67%	—	1.97%	—
Guatemalan	6.00%	—	.66%	—
Argentinian	—	—	.66%	—
Ecuadorian	.66%	—	—	—
Bolivian	—	—	.66%	—
First language	96.00%	—	99.34%	—
Language at home	72.67%	—	90.79%	—
Years in United States	2.75	2.04	1.40	1.39
Years in school	1.74	.82	1.51	.66

Note. Total $N = 303$. Los Angeles (Site 2) $n = 150$; Miami (Site 1) $n = 153$. Sex is reported for males. First language and language at home are reported for Spanish/mostly Spanish, respectively.

reported completing an average of 1.6 years in school ($SD = .75$). Spanish was also the predominant first language for adolescents across sites (98%), with 82% of adolescents speaking mostly Spanish at home. Adolescents recruited from Los Angeles reported living in the United States for significantly longer than adolescents recruited from Miami, $t = -6.74$, $p < .01$. Adolescents recruited from Los Angeles were predominantly Mexican (70%) whereas adolescents from Miami were predominantly Cuban (60%). Finally, adolescents from Miami reported speaking mostly Spanish at home (91%), which was reduced for adolescents from Los Angeles (73%; $\chi^2 = 16.71$, $p < .01$). Comparisons by site for age, sex, first language, and years in school were not statistically significant.

Instruments

Demographics. The participants were asked about their age, number of years in the United States, and sex. Each participant was also coded for the site in which they lived (Los Angeles = 2, Miami = 1).

Bicultural stress. Bicultural stress was measured using the Bicultural Stress Scale (Romero & Roberts, 2003) and includes discrimination, intergenerational conflict, monolingual stressors, and peer pressure to conform to one's ethnic group. This measure consists of 20 items, each rated on a 4-point Likert-type scale ranging from 1 (*never happened to me*) to 4 (*very stressful*) with higher scores indicating a higher level of stress. Sample items are: "because of family obligations I can't always do what I want," "I have been treated badly because of accent," and "I have felt that others do not accept me because of my ethnic group." A mean score was computed for each wave of data that consisted of averages from all items, with higher mean scores indicating higher levels of bicultural stress. Previous studies with Mexican descent adolescents reported strong reliability for the overall scale ranging from .82 to .93 (Piña-Watson et al., 2013; Romero & Roberts, 2003, respectively). Cronbach's alphas for the present study ranged from .91 to .95 across waves.

Depressive symptoms. We assessed depressive symptoms using the 20-item Center for Epidemiologic Studies Depression Scale (Radloff, 1977), which has been used successfully in adolescent Latinx populations (Crockett, Randall, Shen, Russell, & Driscoll, 2005). Adolescents indicated, on a scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*), how depressed they have felt during the past week. Items from this scale were summed and a mean score was derived for each wave of data. This measure is widely used in survey studies, and has been validated with Latinx youth (Crockett et al., 2005). The majority of participants endorsed clinically significant-levels of depressive symptoms across waves, as defined by a score greater than or equal to 16 on the CES-D (Radloff, 1977). More specifically, 76.90, 67.33, 66.67, 61.72, and 62.38% reported clinically significant depressive symptoms across Waves 2 to 6, respectively. Cronbach's alphas for the present study ranged from .91 to .93 across waves.

Hopefulness. Hopefulness was addressed using the six-item Children's Hope Scale (CHS; Snyder, Hoza, et al., 1997) and has been validated with Latinx youth (Edwards, Ong, & Lopez, 2007). This measure uses a 6-point Likert-type scale ranging from 1 (*none of the time*) to 6 (*all of the time*). Sample items include "I am doing just as well as other kids my age" and "I can think of many ways to get the things in life that are most important to me," All items are summed and mean scores were derived for each wave of data. Cronbach's alphas for the present study ranged from .86 to .94 across waves.

Self-esteem. Self-esteem was assessed with 10 items from the Rosenberg (1965) Self-Esteem Scale, which has been used with Spanish-speaking populations (Schmitt & Allik, 2005). This measure uses a 4-point Likert-type scale ranging from 0 (*strongly disagree*) to 3 (*strongly agree*). A sample item is "I feel that I have a number of good qualities." All items are summed and mean scores were derived for each wave of data. Evidence for the validity of this scale has been demonstrated by negative associations with depressive symptoms among Latinx adolescents (Zeiders, Umaña-Taylor, & Derlan, 2013). Internal consistency has been supported in a sample of Latinx high school students with alphas ranging from .87 to .88 (Zeiders et al., 2013). Cronbach's alphas for the present study ranged from .75 to .84 across waves.

Procedure

Participants were recruited from randomly selected public schools in heavily concentrated Latinx areas in Miami-Dade and Los Angeles counties. Because (a) we were interested in recent-immigrant families, and (b) many Latinx immigrants tend to settle in heavily Latinx areas (Kasinitz, Mollenkopf, Waters, & Holdaway, 2008; Stepick, Grenier, Castro, & Dunn, 2003), we selected schools where the student body was at least 75% Latinx. All participating schools were public high schools. In Miami, 10 schools participated, and the number of participating students within each school ranged from one to 57 (Median [*Mdn*] = 9,

Interquartile range [*IQR*] = 4–19). In Los Angeles, 13 schools participated, and the number of students participating from each school ranged from 1 to 27 (*Mdn* = 12, *IQR* = 4–16). Staff members called parents to verify adolescents had lived in the United States for less than 5 years and that the family planned to remain in 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. The study was approved by the Institutional Review Boards at the University of Miami and the University of Southern California, and by the Research Review Committees for each of the participating school districts. Adolescents were compensated for their participation with movie tickets at each time point.

Parents provided parental consent, and adolescents provided assent. Youth were assessed six times over a 3-year time period, corresponding to baseline and 6, 12, 18, 24, and 36 months follow-up. We retained 85% of the study sample across the six time points. For the current study, the baseline assessment was not included in the statistical analyses to more accurately gauge the bicultural stress processes because the Miami and Los Angeles data collection timing was slightly off calendar for baseline whereas the remaining time points were collected on the same timeline at both locations. Adolescents completed the assessment in the language of their choice (i.e., English or Spanish) using an audio computer assisted self-interviewing (A-CASI) methodology. Eighty-four percent of adolescents completed their assessments in Spanish at baseline. This percentage decreased to 77% at Time 2, 72% at Time 3, 66% at Time 4, and 68% at Time 5.

Analytic Strategy

Potential prospective cross-lagged relations between bicultural stress, depressive symptoms, hopefulness, and self-esteem were examined concurrently in a comprehensive model using the RI-CLPM, across five, equally spaced time intervals (i.e., 6 months; Wave 2 through Wave 6). All analyses were conducted in Mplus Version 8.2 (Muthén & Muthén, 1998–2018). The following model fit indices are reported: chi-square (χ^2), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). Guidelines for CFI values suggest that .90 represents "good" fit to the data and .95 or greater represents "excellent" fit (Hu & Bentler, 1999; Kline, 2005). RMSEA values of .05 (or below) indicate a close fit to the data, .08 a fair fit, and .10 a marginal fit (Browne & Cudeck, 1993). Although chi-square is reported, it was not used to gauge model fit, as chi-square is sensitive to large sample sizes (see Davey & Savla, 2010). Full information maximum likelihood (FIML) in Mplus was used to estimate missing data. Estimating missing data using maximum likelihood is considered preferable to older procedures (e.g., list-wise deletion), even when certain assumptions (e.g., the data are missing at random) are not met (see Graham, 2009). All models adjusted for age, site, and number of years in the United States. Cohen's (1988) convention for effect sizes (i.e., r = .10 [small], r = .30 [medium], r = .50 [large]) are referenced when relevant.

Results

Preliminary Analyses

Correlations among primary study variables are shown in Tables 2 through 4. As shown in Table 2, depressive symptoms strongly correlated with bicultural stress in the expected direction across all waves. Overall, hopefulness and self-esteem also correlated with bicultural stress in the as anticipated. As shown in Table 3, depressive symptoms, hopefulness, and self-esteem were also correlated across waves in the hypothesized direction. As shown in Tables 3 and 4, there were strong autocorrelations for each construct across all waves.

Primary Analyses: Random-Intercept Cross-Lagged Panel Model (RI-CLPM)

The comprehensive RI-CLPM including bicultural stress, depressive symptoms, self-esteem, and hopefulness exhibited excellent fit to the data; $\chi^2(86) = 121.91$, $p < .01$; CFI = .99; RMSEA = .04. See Table 5 for standardized autoregressive and cross-lagged estimates, as well as correlations between random intercepts.

Bicultural stress and depressive symptoms. As shown in Table 5, there was little evidence of consistent within-person

Table 2
Zero-Order Correlations Between Depressive Symptoms, Hopefulness, Self-Esteem, Bicultural Stress, and Relevant Covariates

	Depressive symptoms					Hopefulness					Self-esteem				
Measure	DEP2	DEP3	DEP4	DEP5	DEP6	CHS2	CHS3	CHS4	CHS5	CHS6	RSE2	RSE3	RSE4	RSE5	RSE6
BSS2	.33**	.23**	.25**	.27**	.16*	−.19**	−.27**	−.08	−.13*	−.26**	−.22**	−.26**	−.22**	−.15*	−.23**
BSS3	.35**	.38**	.32**	.20**	.23**	−.09	−.20**	−.10	−.12	−.14*	−.10	−.33**	−.22**	−.16*	−.21**
BSS4	.25**	.19**	.25**	.24**	.23**	−.16*	−.23**	−.12*	−.23**	−.11	−.16*	−.26**	−.27**	−.21**	−.22**
BSS5	.33**	.29**	.24**	.40**	.12	−.16*	−.29**	−.22**	−.31**	−.28**	−.09	−.28**	−.24**	−.26**	−.30**
BSS6	.25**	.18**	.28**	.34**	.38**	−.04	−.17**	−.12	−.17**	−.09	−.09	−.15*	−.17*	−.22**	−.34**
Age	.00	.07	.08	.00	.00	.05	.03	.10	.11	.12	−.06	−.03	.03	.09	.02
Site	−.08	−.03	−.04	−.13*	−.06	−.10	−.09	−.09	−.09	−.05	−.11	−.08	−.02	−.08	.01
Years in United States	.03	.08	.17**	.09	.08	−.07	−.05	−.15*	−.13*	−.17*	−.15*	−.09	−.05	−.08	−.11
M	30.84	29.58	29.65	28.77	29.25	22.82	22.86	23.61	23.71	23.45	28.97	29.89	30.12	30.48	29.78
SD	14.31	14.96	14.84	15.60	14.86	5.10	5.48	5.67	5.71	5.87	6.14	6.58	6.66	6.90	6.89

Note. N = 303. Males = 1; females = 2. Site 1 = Miami; Site 2 = Los Angeles; BSS = bicultural stress Waves 2–6; DEP = depressive symptoms Waves 2–6; CHS = hopefulness Waves 2–6-5; RSE = self-esteem Waves 2–6.
* $p < .05$. ** $p < .01$.

Table 3
Zero-Order Correlations Between Depressive Symptoms, Hopefulness, and Self-Esteem

Variable	DEP2	DEP3	DEP4	DEP5	DEP6	CHS2	CHS3	CHS4	CHS5	CHS6	RSE2	RSE3	RSE4	RSE5	RSE6
DEP2	1.00														
DEP3	.59**	1.00													
DEP4	.45**	.50**	1.00												
DEP5	.51**	.51**	.54**	1.00											
DEP6	.37**	.33**	.48**	.45**	1.00										
CHS2	−.34**	−.26**	−.27**	−.26**	−.13*	1.00									
CHS3	−.44**	−.42**	−.40**	−.39**	−.23**	.51**	1.00								
CHS4	−.34**	−.27**	−.35**	−.36**	−.21**	.44**	.51**	1.00							
CHS5	−.32**	−.29**	−.39**	−.45**	−.20**	.40**	.53**	.55**	1.00						
CHS6	−.30**	−.23**	−.27**	−.38**	−.17**	.41**	.38**	.52**	.53**	1.00					
RSE2	−.39**	−.33**	−.29**	−.31**	−.23**	.59**	.48**	.36**	.35**	.33**	1.00				
RSE3	−.50**	−.55**	−.42**	−.44**	−.32**	.32**	.63**	.49**	.44**	.36**	.49**	1.00			
RSE4	−.46**	−.40**	−.49**	−.48**	−.35**	.33**	.44**	.59**	.35**	.33**	.44**	.60**	1.00		
RSE5	−.41**	−.36**	−.47**	−.59**	−.36**	.32**	.44**	.44**	.72**	.42**	.41**	.52**	.53**	1.00	
RSE6	−.43**	−.40**	−.52**	−.58**	−.52**	.28**	.38**	.37**	.45**	.50**	.40**	.46**	.48**	.64	1.00

Note. $N = 303$. DEP = depressive symptoms Waves 2–6; CHS = hopefulness Waves 2–6; RSE = self-esteem Waves 2–6.
* $p < .05$. ** $p < .01$.

associations between bicultural stress and depressive symptoms. Specifically, individuals experiencing greater than their within-person average depressive symptoms at Wave 2 were more likely to experience greater bicultural stress at Wave 3 ($\beta = .18$, $p < .01$). At the same time, greater bicultural stress at Wave 5 predicted lower depressive symptoms at Wave 6 ($\beta = -.17$, $p < .01$). At the between-person level, there was a significant and large correlation for bicultural stress and depressive symptoms, $r = .56$, $p < .01$, which suggests the observed correlation between bicultural stress and depressive symptoms is primarily because of between-person stability (i.e., adolescents higher in depressive symptoms tended to be high in bicultural stress across time, and vice versa) rather than within-person, "A causes B" relations.

Bicultural stress and hopefulness. As shown in Table 5, within-person associations between bicultural stress and hopefulness were also fairly inconsistent, with bicultural stress at Wave 2 relating to subsequent hopefulness at Wave 3 in the hypothesized direction ($\beta = -.11$, $p = .04$), whereas hopefulness at Wave 4 predicted subsequent bicultural stress at Wave 5 in the hypothesized direction ($\beta = -.15$, $p = .02$). At the between-person level, the correlation between bicultural stress and hopefulness was small-to-moderate in magnitude but not statistically significant, $r = -.20$, $p = .07$, which suggests that adolescents who report higher bicultural stress tended to report lower hopefulness at the between-person level across the five waves of assessment.

Bicultural stress and self-esteem. Within-person cross-lagged estimates for bicultural stress and self-esteem were minimal, with the exception of self-esteem at Wave 3 negatively relating to bicultural stress at Wave 4 (see Table 5). This estimate was small-to-moderate but not statistically significant ($\beta = -.14$, $p = .08$). Finally, at the between-person level, there was a small-to-moderate and statistically significant correlation between the two random intercepts, $r = -.25$, $p = .03$, which suggests that adolescents higher in bicultural stress tended to be lower in self-esteem at the between-person level across time.

Depressive symptoms and hopefulness. Cross-lagged estimates between depressive symptoms and hopefulness were minimal-to-small and not statistically significant across waves (see Table 5). However, depressive symptoms and hopefulness were significantly correlated at the between-person level, $r = -.58$, $p <$

Table 4
Zero-Order Correlations Between Bicultural Stress, Age, Site, and Years in United States

Variable	BSS2	BSS3	BSS4	BSS5	BSS6	Age	Site	Years in United States
BSS2	1.00							
BSS3	.41**	1.00						
BSS4	.33**	.40**	1.00					
BSS5	.54**	.42**	.53**	1.00				
BSS6	.34**	.28**	.36**	.48*	1.00			
Age	.06	.08	.10	.06	.02	1.00		
Site	.01	.12	.00	−.02	.01	−.07	1.00	
Years in United States	.05	.14*	.06	.07	.04	−.07	.36**	1.00
M	18.74	19.33	18.55	17.48	17.75	14.51	1.50	2.07
SD	14.79	15.91	16.14	16.57	16.58	.88	.50	1.87

Note. $N = 303$. Site 1 = Miami; Site 2 = Los Angeles; BSS = bicultural stress Waves 2–6.
* $p < .05$. ** $p < .01$.

Table 5
Standardized Estimates From Comprehensive RI-CLPM

Path	Estimate (β)	*SE*	*p*-value
Within-person autoregressive estimates			
T2BSS → T3BSS	−.01	.06	.88
T3BSS → T4BSS	.06	.07	.36
T4BSS → T5BSS	**.25**	**.05**	**<.01**
T5BSS → T6BSS	.04	.07	.53
T2DEP → T3DEP	**.21**	**.06**	**<.01**
T3DEP → T4DEP	.04	.07	.55
T4DEP → T5DEP	.07	.06	.29
T5DEP → T6DEP	.05	.08	.54
T2CHS → T3CHS	.02	.07	.80
T3CHS → T4CHS	.02	.07	.77
T4CHS → T5CHS	**.17**	**.07**	**.01**
T5CHS → T6CHS	.07	.08	.42
T2RSE → T3RSE	.14	.07	.06
T3RSE → T4RSE	**.28**	**.08**	**<.01**
T5RSE → T6RSE	.11	.07	.13
T5RSE → T6RSE	**.29**	**.09**	**<.01**
Within-person cross-lagged estimates			
T2BSS → T3DEP	−.09	.05	.08
T2DEP → T3BSS	**.18**	**.06**	**<.01**
T2BSS → T3CHS	**−.11**	**.05**	**.04**
T2CHS → T3BSS	.04	.07	.54
T2BSS → T3RSE	−.07	.06	.20
T2RSE → T3BSS	.03	.07	.69
T2DEP → T3CHS	−.11	.06	.07
T2CHS → T3DEP	.00	.06	.98
T2DEP → T3RSE	**−.17**	**.06**	**<.01**
T2RSE → T3DEP	.04	.07	.57
T2RSE → T3CHS	**.15**	**.07**	**.03**
T2CHS → T3RSE	−.07	.07	.29
T3BSS → T4DEP	.04	.06	.37
T3DEP → T4BSS	−.13	.07	.08
T3BSS → T4CHS	.06	.06	.31
T3CHS → T3BSS	−.04	.08	.62
T3BSS → T4RSE	−.05	.06	.43
T3RSE → T4BSS	−.14	.08	.08
T3DEP → T4CHS	.06	.07	.42
T3CHS → T4DEP	−.06	.07	.37
T3DEP → T4RSE	.02	.07	.72
T3RSE → T4DEP	.02	.07	.79
T3RSE → T4CHS	**.26**	**.08**	**<.01**
T3CHS → T5RSE	−.03	.07	.64
T4BSS → T5DEP	−.03	.06	.64
T4DEP → T5BSS	−.00	.06	.99
T4BSS → T5CHS	−.10	.06	.08
T4CHS → T5BSS	**−.15**	**.06**	**.02**
T4BSS → T5RSE	−.05	.06	.40
T4RSE → T5BSS	.01	.07	.91
T4DEP → T5CHS	−.13	.06	.05
T4CHS → T5DEP	−.03	.06	.67
T4DEP → T5RSE	−.11	.06	.07
T4RSE → T5DEP	−.09	.07	.19
T4RSE → T5CHS	−.10	.07	.18
T4CHS → T5RSE	.05	.07	.40
T5BSS → T6DEP	**−.17**	**.06**	**<.01**
T5DEP → T6BSS	.11	.08	.17
T5BSS → T6CHS	−.10	.06	.12
T5CHS → T6BSS	.07	.09	.42
T5BSS → T6RSE	−.07	.06	.24
T5RSE → T6BSS	−.09	.09	.35
T5DEP → T6CHS	−.03	.07	.68
T5CHS → T6DEP	.15	.08	.08
T5DEP → T6RSE	−.12	.07	.07
T5RSE → T6DEP	−.12	.09	.19
T5RSE → T6CHS	.05	.09	.56
T5CHS → T6RSE	−.11	.07	.16
Between-person correlations			
BSS ↔ DEP	**.56**	**.08**	**<.01**
BSS ↔ CHS	−.20	.11	.07
BSS ↔ RSE	**−.25**	**.12**	**.03**
DEP ↔ CHS	**−.58**	**.08**	**<.01**
DEP ↔ RSE	**−.80**	**.06**	**<.01**
RSE ↔ CHS	**.75**	**.06**	**<.01**

Note. N = 274–237. RI-CLPM = Random-Intercept Cross-Lagged Panel Model; BSS = bicultural stress; DEP = depressive symptoms; CHS = hopefulness; RSE = self-esteem; T2–T6 = Time 2–Time 6. Statistically significant paths ($p < .05$) are in bold typeface.

.01, which indicates adolescents lower in depressive symptoms tended to be higher in hopefulness across all waves.

Depressive symptoms and self-esteem. Cross-lagged estimates were also inconsistent across waves for depressive symptoms and self-esteem. Depressive symptoms at Wave 2 significantly influenced self-esteem at Wave 3 in the hypothesized direction (β = −.17, $p < .01$), whereas the reverse (i.e., self-esteem at Wave 2 and depressive symptoms at Wave 3) was minimal and not statistically significant (β = −.04, $p = .57$). These same relations were minimal to small and not statistically significant for Waves 3 to 4 and Waves 4 to 5. Small, but not statistically significant, estimates were found in both directions from Waves 4 to 5 in the hypothesized direction (see Table 5). At the between-person level, depressive symptoms and self-esteem were strongly and negatively correlated, as expected ($r = -.80$, $p < .01$).

Hopefulness and self-esteem. Some evidence was found for the causal dominance of self-esteem on later hopefulness, such that self-esteem at Waves 2 and 3 significantly influenced hopefulness at Waves 3 and 4 (β = .15, $p = .03$; β = .26, $p < .01$, respectively). The reverse estimates from Waves 2 to 3 and Waves 3 to 4 were minimal and not statistically significant. However, at later waves, cross-lagged estimates were minimal and not statistically significant (see Table 5). At the between-person level, hopefulness and self-esteem exhibited a strong, positive correlation, $r = .75$, $p < .01$, which indicates adolescents higher in self-esteem also reported higher hopefulness across waves.

Discussion

The purpose of the present study was to investigate the bidirectionality or causal dominance between bicultural stress and psychological functioning. Results indicate that bicultural stress, depressive symptoms, hopefulness, and self-esteem exhibited between-person associations across waves. However, cross-lagged estimates among constructs were overall inconsistent, with some evidence that self-esteem influences later hopefulness. We did not find support for within-person differences that would indicate that increases in bicultural stress over time and within individuals would lead to worse psychological functioning. No clear causal dominance was indicated between these variables. Instead, between-person stability was found for relations between bicultural stress, depressive symptoms, hopefulness, and self-esteem.

Between-Person Stability of Bicultural Stress and Psychological Functioning

Evidence suggests that the relationship between bicultural stress, depressive symptoms, and self-esteem occurs at the trait-level (between-person), rather than state-level (within-person). This means that people higher in bicultural stress tend to be lower in psychological functioning (or vice versa). However, the mean levels of these variables varied minimally over time, which may also suggest that there is less change in these outcomes for immigrant adolescents (i.e., they function more like traits rather than like states). In the current dataset with immigrant Latinx youth over a 3-year period, we did not find evidence that higher levels of bicultural stress led to subsequent worse psychological functioning within individuals, but that they were significantly associated at the between-person level. Previous, longitudinal research has found significant between-person association between bicultural stress and psychological well-being (Cano et al., 2015; Schwartz et al., 2015; Sirin, Gupta, et al., 2013; Sirin, Ryce, et al., 2013; Smokowski et al., 2010). Nevertheless, other previous studies have documented that internalizing symptoms decreased over time for immigrant youth based on within-person analyses, which our findings did not support from a between-person perspective (Sirin, Gupta, et al., 2013; Sirin, Ryce, et al., 2013; Smokowski et al., 2010).

Based on the Acculturation Process and Context Framework it was expected that more bicultural stress would predict worse psychological functioning (Schwartz et al., 2010). Our findings demonstrate that here were some bidirectionality effects between bicultural stress and depression and hope, yet they were not consistent. In fact, there is more evidence that these processes are rather stable across the five waves of data and are correlated between-persons. As such, our findings seem to reflect Beck's (1967) cognitive triad of depressive symptoms that suggests that there is a bidirectional feedback loop between depressive emotions and the subjective perception of stress.

Within-Person Evidence

Our results suggest some within-person relations between bicultural stress and hopefulness. While more bicultural stress at Wave 2 predicted lower hopefulness at Wave 3, at later waves lower hopefulness (Wave 4) predicted more bicultural stress (Wave 5). Thus, while there may be within-person influences, the directionality of this relationship is not clear from the current study. Previous studies have found that social and cultural stressors are linked with less hopefulness within persons (Piña-Watson, Llamas, et al., 2015; Romero, Piña-Watson, & Toomey, 2018; Stein et al., 2012). In the current study, there is preliminary evidence of some causal dominance of higher self-esteem predicting higher hopefulness. Hopefulness of adolescents is critical because it indicates their future orientation and has been linked with key health outcomes, including suicidality (Bridge, Goldstein, & Brent, 2006).

Implications

The findings of this study have a number of implications that should be noted when working in the clinical setting with Latinx immigrant youth. Although we were unable to establish causal dominance among the variables in this study, we were able to establish consistent interrelationships between bicultural stress and the psychological functioning variables. Latinx immigrant youth who tended to report higher levels of bicultural stress also tended to report poorer psychological functioning, namely self-esteem. The implication of this theme in our data is that by engaging in treatment options that target decreasing bicultural stress or increasing psychological functioning (e.g., improving self-esteem) may then have the effect of decreasing the other variable. Although there is a paucity of evidenced-based programs aimed at improving the psychological functioning of Latinx immigrant youth, one such program may be considered for adaptation in the United States with adolescents. In Canada, creative expression workshops have shown promise in increasing the psychological functioning (e.g., self-esteem, internalizing, and externalizing symptoms) of immigrant children (Rousseau, Drapeau, Lacroix, Bagilishya, & Heusch, 2005). Youth who engaged in this 12-week program demonstrated improved outcomes over youth who were not in the program. Although this program was aimed at children aged 7–13, it could be translated for later developmental periods such as mid- and late-adolescent immigrants. Additionally, given the interrelationship of the psychological functioning variables and bicultural stress in this study, programs such as these should consider incorporating conversations and prompts related to bicultural stress. Exploring bicultural stressors such as discriminatory experiences, intergenerational familial conflict, peer stress, and language stress could also be beneficial.

When clinicians work with Latinx immigrant youth who present with low self-esteem, high reporting of depressive symptoms, and/or low levels of hopefulness, they may consider how exploring the potential of bicultural stressors as antecedents or exacerbators to these psychological symptoms may be useful. Not only is a thorough assessment needed to understand etiology, it can also be incorporated into developing healthy and effective coping strategies. Specifically, immigrant youth may need support and assistance to consciously understand the two distinct and sometimes conflicting cultural contexts that they face after immigrating, particularly because the Acculturation Context and Process model argues that cultural awareness is a central factor that contributes to psychological functioning (Ward & Geeraert, 2016). Youth may benefit from increased awareness and efforts to ease their transitions between their heritage culture and their homeland and the new norms, values, language, and social interactions in their new environment (Comello & Kelly, 2012; Concha, Sanchez, de la Rosa, & Villar, 2013; de los Rios, 2013). In particular, youth may benefit from assistance and support in navigating these cultural differences within their family, school, peers, and community. The stress process literature (Folkman, 2008; Pearlin, 1999) suggests that alleviating the impact of stress may be achieved through (a) increasing social support or (b) improving coping strategies. Given that bicultural stress originates from sources external to the youth (Ward & Geeraert, 2016), it may be that individual coping strategies will not be as effective as increasing social support within ecological contexts. Given the importance of ecological contexts identified in acculturation theory, clinicians may consider working with family, school, and community to inform practices, policies, and programs that can help reduce cultural distance, bicultural stress, and help adolescents navigate bicultural stress as individuals and with social support.

As a final note, it is important to acknowledge that experiencing bicultural stress is a reality of the lived experience of Latinx immigrant youth. When having a client present with issues surrounding poor psychological functioning an understanding of the contextual realities of these youth is required for effective clinical practice. The experience of bicultural stress should not be viewed as pathological, or a deficit, of the immigrant youth. On the contrary, it should be viewed as a common experience of psychological strain that is imposed upon them as a byproduct of the environments that they are immersed in. Experiencing bicultural stress is a contextual reality that many immigrant youths live with and attempt to negotiate while being an immigrant in the United States.

Limitations and Future Research

The limitations of the current study are that the sample does not represent the broad spectrum of immigrant and nonimmigrant adolescents in the United States. For example, the present study only included youth from urban areas and only Latinx youth, and those predominantly of Mexican or Cuban descent. Moreover, we do not know the documentation status and or the socioeconomic status of the adolescents, which is likely to shape stress related to immigration and cultural navigation. Both of these factors could have an impact on bicultural stress, and likely have an impact on the changes in psychological wellbeing over time. Future studies with immigrant youth should account for these differences and changes over time and may consider examining how these processes vary based on sending and receiving contexts. Additionally, recent work has begun to explore how bicultural stress is a component of a latent variable that also includes context of reception of host culture and discrimination (Cano et al., 2015); the ways in which this type of latent variable influences well-being over time will need to be further investigated. Findings are also ecologically contextualized within the historical period in which the data was collected; for example, in the current political climate of increased enforcement of immigration policy there is likely increased cultural distance between the heritage culture and the receiving culture that may increase acculturative stress. Additionally, single-reporter data limits the interpretation of findings as one's perception or state at the time of collection could have an influence on reporting. Future research may consider peer, parent, and teacher reports to corroborate findings. Finally, future longitudinal studies may consider exploring different time periods that could range from momentary assessment to much longer periods of development over years of change. Additionally, larger samples would provide more power to effectively examine differences by sex or location (Kearney-Cooke, 1999; Kling, Hyde, Showers, & Buswell, 1999; Nolen-Hoeksema & Girgus, 1994; Ojeda & Liang, 2014).

Conclusion

Findings from this study indicates that the RI-CLPM is an effective strategy to examine bicultural stress and well-being processes among adolescents. Adolescents encounter a rapid developmental period, and this analytical strategy appears to be useful to investigate stability and change in their process of well-being. We reliably found between-person (i.e., trait correlations) relations among bicultural stress, depressive symptoms, hopefulness, and self-esteem, as opposed to within- person relations. There were within person differences identified for hopefulness in regard to self-esteem. There is a need for further research examining bicultural among Latinx immigrant youth, particularly within prevention and intervention studies.

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Appendix

Related Publications

The dataset used in the manuscript are part of a larger data collection, and some articles have already been published using parts of the dataset. However, there are manuscripts that have focused on this unique set of outcome variables and bicultural stress. Additionally, the research question that is explored in this article is unique compared with any previously published work. As well, the analytical technique used in this study is innovative and has not previously been utilized with this dataset. It provides us a perspective to really disentangle within- and between-person differences in longitudinal analysis predicting psychological functioning. Only one other manuscript has focused on bicultural stress, and it only utilized two of the early timepoints; whereas our manuscript includes all five timepoints.

The data reported in the manuscript have been previously published and/or were collected as part of a larger data collection (at one or more points in time). Findings from the data collection have been reported in separate manuscripts. Manuscripts 1, 2, 4, and 5 all focus on substance use outcomes. Manuscript 3 focuses on depressive symptoms, but not self-esteem or hopefulness; also it uses a different analytic approach. Manuscripts 6 and 7 include a sample of both parents and youth with inclusion of risk behaviors.

Lorenzo-Blanco, E. I., Meca, A., Piña-Watson, B., Zamboanga, B. L., Szapocznik, J., Cano, M. A., . . . Schwartz, S. J. (2019). Longitudinal trajectories of family functioning among recent immigrant Latino families: Links with cultural stress, emotional well-being, and behavioral health. *Child Development, 90,* 506–523.

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