

Ethnic Identity and Acculturation in Hispanic Early Adolescents: Mediated Relationships to Academic Grades, Prosocial Behaviors, and Externalizing Symptoms

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This study examined acculturative stress and self-esteem as mediators of the association of ethnic identity and acculturation with psychosocial outcomes. The study sample consisted of 347 Hispanic adolescents in a “new” immigrant-receiving community in the Midwest. The authors expected acculturation to influence psychosocial adjustment through acculturative stress and ethnic identity to influence psychosocial adjustment through self-esteem. Results indicated that relationships of ethnic identity to academic grades and to externalizing symptoms were mediated by self-esteem and that both U.S. and Hispanic acculturation orientations were directly associated with prosocial behavior. The relationships of U.S. cultural orientation to academic grades and to behavior problems were mediated through acculturative stress and self-esteem. Implications of these findings for the study of Hispanics in more monocultural receiving communities are discussed.

Keywords: Hispanic, acculturation, ethnic identity, self-esteem, acculturative stress, psychosocial adjustment

The study of cultural identity has been ongoing for several decades. For most of a century, researchers have been interested in some components of cultural identity, such as acculturation (Chun, Organista, & Marín, 2003). Scholars have also studied other components, such as ethnic identity, for comparatively shorter periods of time (e.g., Phinney, 1990). However, most of the interest in cultural identity has been spurred similarly by the most recent (post-1965) wave of immigration (Phinney, 2003).

Hispanics are the largest and fastest growing immigrant group in the United States. As of the 2000 Census, Hispanics comprised nearly 14% of legal U.S. residents (Marotta & García, 2003). Moreover, since 2000, one of every two individuals added to the U.S. population has been Hispanic (Huntington, 2004). Hispanics are also a young population, with nearly 40% under the age of 20 (Ramírez & de la Cruz, 2003). As a result, predictors and indices of psychosocial adjustment in Hispanic children and adolescents are important to study.

We should note briefly how we define the terms *ethnic identity*, *acculturation*, and *cultural identity* in this article. *Ethnic identity*

refers to a subjective experience of heritage culture retention (Roberts et al., 1999). It refers to the extent to which individuals have explored what their ethnicity means to them, as well as the extent to which they view their ethnic group positively. Although *ethnic identity* and *racial identity* are often used synonymously, they are not synonymous with one another (Worrell & Gardner-Kitt, 2006). The referent for racial identity is a group characterized by a particular skin tone, whereas the referent for ethnic identity is a group that holds a specific heritage and set of values, beliefs, and customs. This distinction parallels the difference between race and ethnicity (Helms & Tallyrand, 1997). The term *acculturation* is used to refer to orientations toward both heritage and receiving cultural contexts and practices in immigrants and their descendants (Tadmor & Tetlock, 2006). Although acculturation has traditionally been operationalized as a unidimensional continuum ranging from retention of heritage-culture values and practices to acquisition of receiving-culture values and practices (Flannery, Reise, & Yu, 2001), contemporary scholars in cultural psychology have adopted bidimensional models of acculturation in which orientations toward heritage and U.S. values and practices are considered separate dimensions (Ryder, Alden, & Paulhus, 2000). The term *cultural identity* refers to the totality of one's cultural self-definition (S. J. Schwartz, Montgomery, & Briones, 2006; S. J. Schwartz, Zamboanga, Rodríguez, & Wang, 2007), including ethnic identity, acculturation, and other terms such as individualism and collectivism.

In recent years, researchers have examined the patterns of ethnic identity and acculturation among individuals from different ethnic groups (e.g., Phinney, Romero, Nava, & Huang, 2001), as well as ways in which ethnic identity and acculturation are related to

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aspects of psychosocial adjustment such as self-esteem (Phinney, Cantu, & Kurtz, 1997), externalizing symptoms (Dinh, Roosa, Tein, & López, 2002), academic grades (Supple, Ghazarian, Frabutt, Plunkett, & Sands, 2006), and substance use (Marsiglia, Kulis, Hecht, & Sills, 2004). In the studies reviewed in this introductory section, researchers measured ethnic identity using either the Multigroup Ethnic Identity Measure (Roberts et al., 1999) or the Ethnic Identity Scale (Umaña-Taylor, Yazedjian, & Bámaca-Gómez, 2004), both of which assess ethnic identity exploration, commitment, and affirmation. In these studies, researchers measured acculturation using unidimensional scales ranging from endorsement of heritage-culture practices to endorsement of receiving-culture practices.

Although prior research has examined the association between acculturation and various psychosocial outcomes, three primary areas need to be addressed in this line of inquiry. First, few studies (e.g., Zamboanga, Raffaelli, & Horton, 2006) have focused on empirically delineating ethnic identity (as measured by the Multigroup Ethnic Identity Measure or similar instruments) and acculturation (as measured by language use and culture-specific behaviors) as separate aspects of cultural identity. Although ethnic identity is related to retention of heritage-culture practices (S. J. Schwartz et al., 2007), it may be possible to feel a sense of solidarity with one's heritage group without speaking its language, or vice versa (Portes & Rumbaut, 2001).

Second, in adolescents, acculturation and ethnic identity have been associated with different psychosocial processes. Ethnic identity has generally been associated with positive outcomes such as self-esteem (Phinney et al., 1997) and academic success (Fulgini, Witkow, & García, 2005) among adolescents from ethnic minority groups. At the same time, a limited body of research has documented a negative relationship between ethnic identity and behavior problems (e.g., Marsiglia et al., 2004). Conversely, the literature on acculturation and psychosocial adjustment is mixed. Some studies have found that greater acculturation to U.S. cultural practices is associated with negative outcomes, such as substance use (Gil, Wagner, & Vega, 2000) and behavior problems (Dinh et al., 2002). Other studies, however, have found that acculturation to U.S. values and practices is associated with positive outcomes such as academic success (López, Ehly, & García-Vázquez, 2002). Still other studies have yielded inconclusive results regarding acculturation and psychosocial outcomes (e.g., Gonzáles, Dearnorff, Formoso, Barr, & Barrera, 2006). Because all of these studies operationalized acculturation unidimensionally (i.e., on a continuum from complete retention of heritage-culture practices to complete acquisition of receiving-culture practices), the possibility of endorsing both the heritage- and receiving-culture contexts (Tadmor & Tetlock, 2006) was not considered.

A noteworthy limitation of much acculturation research, one that may inhibit delineation of ethnic identity and acculturation, involves reliance on unidimensional models. Within a simplistic, unidimensional model of acculturation, identifying with one's heritage culture would preclude acculturating to mainstream society. A bidimensional model of acculturation, where heritage- and receiving-culture influences are considered as separate dimensions, may address these limitations and appears more tenable than the unidimensional model (Ryder et al., 2000; S. J. Schwartz et al., 2007). However, few studies have examined the separate relation-

ships of heritage- and receiving-culture orientations to psychosocial outcomes. One study (Sullivan et al., in press) found that endorsement of both heritage- and receiving-culture practices was associated with decreased risk for behavior problems in Hispanic adolescents residing in the Miami area.

Another "gap" in cultural identity research involves knowledge of mediating mechanisms. Research on relationships of cultural identity to psychosocial adjustment has focused primarily on direct associations. As a result, the *mechanisms* by which ethnic identity and acculturation are associated with aspects of adolescent psychosocial adjustment such as academic grades, prosocial behavior, and externalizing symptoms have been less commonly explored (Zamboanga & Carlo, in press). Academic grades and prosocial behavior clearly represent aspects of thriving and positive development (Dowling, Gestsdottir, Anderson, von Eye, & Lerner, 2003), whereas externalizing symptoms are predictive of negative outcomes such as delinquency, drug use, and sexual risk taking (Jessor et al., 2003). It is therefore important to map the relationships of ethnic identity and acculturation to these (and related) outcomes in Hispanic adolescents—as well as the mechanisms through which these associations may operate.

If ethnic identity and acculturation are found to relate to positive and negative psychosocial adjustment through different mechanisms, this may provide stronger evidence for discriminant validity between these two aspects of cultural identity. Specifically, if ethnic identity relates to academic grades, prosocial behavior, and externalizing symptoms through self-esteem, whereas acculturation relates to these same outcomes through acculturative stress, this may suggest that these two aspects of cultural identity operate somewhat differently from one another. Given the small but consistent association (r^2 values between .02 and .05) between ethnic identity and self-esteem (e.g., Phinney et al., 1997; Umaña-Taylor, 2004), and given the previously obtained relationship of self-esteem to academic grades (Lane, Lane, & Kyprianou, 2004), prosocial behavior (Smith, Walker, Fields, Brookins, & Seay, 1999), and externalizing symptoms (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005), we would expect the relationship of ethnic identity to psychosocial outcomes to operate through self-esteem. With respect to acculturation, given that acculturative stress represents negative side effects of acculturation such as trauma, anxiety, and disorientation (Finch & Vega, 2003), we contend that the relationships of acculturation—both retention of heritage-culture practices and acquisition of receiving-culture practices—to psychosocial adjustment may operate through acculturative stress. Such a proposition is especially tenable given arguments that immigrants may be criticized by their heritage-culture community for acquiring receiving-culture practices—and criticized by the receiving-culture community for retaining heritage-culture practices (Rudmin, 2003; S. J. Schwartz, Montgomery, & Briones, 2006). This may be most likely to occur in a community oriented largely toward the receiving culture and in which the immigrant group in question is fairly new to the area.

Importance of Studying Acculturation, Ethnic Identity, and Psychosocial Adjustment in Hispanic Adolescents in "New" Receiving Communities

In the present study, we analyzed a sample of Hispanic early adolescents from a midsized Midwestern community. In addition

to being the largest and fastest growing minority and immigrant group in the United States, Hispanics tend to experience a number of psychosocial challenges. For example, among U.S. ethnic groups, Hispanic youths are more likely to drop out of school (Greene & Forster, 2003), to use illicit drugs (Johnston, O'Malley, Bachman, & Schulenberg, 2006), and to engage in unsafe sex (Centers for Disease Control & Prevention, 2004). Cultural processes have been associated with all of these outcomes in Hispanics (e.g., Feliciano, 2001; Gil et al., 2000). Moreover, poor school performance and externalizing problems, which were assessed in this study, have been found to predispose young people to drug use and unsafe sex (French & Dishion, 2003; Tubman, Gil, & Wagner, 2004). On the other hand, prosocial or positive attitudes and behaviors, which were also assessed in this study, have been found to promote bonding to school and community service and to inhibit the development of substance use and sexual risk taking (Scales et al., 2005).

We focused on a midsized Midwestern community rather than a traditional gateway community such as Miami, New York, Chicago, or Los Angeles to further enrich our understanding of receiving contexts and their relevance to acculturation and ethnic identity. Recent census data indicate that more and more Hispanics have been immigrating to nontraditional destinations that were previously not home to large immigrant communities (Marotta & García, 2003). Acculturative stress may play a prominent role in a community that is not accustomed to receiving immigrants and in which relatively few supports are available for them (cf. Amason, Allen, & Holmes, 1999). Moreover, in more monocultural communities, acculturative stress may be important for second- and third-generation immigrants, especially those from visible minority groups and whose names or customs may identify them as belonging to a minority group (cf. Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005).

We also studied a sample of young adolescents. With the exception of early starter delinquents, who may already be using substances and engaging in high-risk sexual behavior (King, Iacono, & McGue, 2004), poor school performance and externalizing behaviors may be representative indicators of problematic development in young adolescents. Prosocial behavior, defined as volunteering or other altruistic actions for which no tangible reward is expected, may serve as an index of thriving (positive development) in this age group (Lerner et al., 2005).

Study Hypotheses

We tested two primary hypotheses in the present study. We hypothesized paths from cultural identity indices, through mediating mechanisms (self-esteem and acculturative stress), to positive and negative indices of psychosocial adjustment. Given the cross-sectional design used, we hypothesized paths in only one direction. First, given prior research, we hypothesized that ethnic identity would be related to academic performance (positively), prosocial behavior (positively), and externalizing symptoms (negatively) and that these relationships would all operate through self-esteem. Second, given the monocultural nature of the community in which these adolescents lived, we expected that U.S. orientation would be negatively associated with acculturative stress, whereas Hispanic orientation would be positively associated with acculturative stress, and that acculturative stress would be positively related to

externalizing symptoms and negatively related to academic performance and to prosocial behaviors. To the extent to which acculturation was directly related to psychosocial adjustment, above and beyond the mediating effect of acculturative stress, we expected that greater degrees of U.S. orientation would be positively associated with academic grades and with externalizing behavior. Conversely, we expected negative relationships of Hispanic orientation to these indices. Given the lack of relevant literature, we did not advance a specific hypothesis regarding the relationship of acculturation to prosocial behavior.

Method

Participants

The present sample consisted of 347 Hispanic students (170 boys, 163 girls, and 14 unidentified by gender) from a small city in western Michigan. Hispanics, particularly Mexican Americans, have resided in this area for at least three generations, although their prominence and visibility in the area (in the form of cultural events, restaurants, and the like) has increased in recent years. We recruited participants from the two middle schools that serve the city. Adolescents were in the sixth (31%), seventh (32%), or eighth (37%) grades. The majority (58%) of participants were of Mexican descent, with the remainder tracing their origins to Puerto Rico, Honduras, Chile, Cuba, and other countries in Central and South America. Eighty-six percent of adolescents, 58% of mothers, and 50% of fathers were born in the United States. The extremely high percentage of U.S.-born adolescents is consistent with the fact that most Hispanic immigrants to this area arrive as young adults or as couples without children, and their children are born subsequently.

The sample analyzed for this article is a subset of the sample collected, consisting only of those participants identifying themselves as Hispanic. The complete sample, consisting of the large majority of students in two of the middle schools that serve the city, is 41% non-Hispanic White, 28% Hispanic, 5% African American, 3% Asian, 17% mixed ethnicity, and 6% other. Although these figures are consistent with the ethnic distribution of the schools as a whole, the area in general is more than 75% non-Hispanic White (U.S. Census Bureau, 2000). This suggests that the younger generation is more diverse than the adult population residing in this area. Culturally, the area is more monocultural and less multicultural than large urban areas that serve as traditional immigrant destinations.

Procedures

The primary investigator (Lorna Hernandez Jarvis) and the school principal sent letters to the parents of students enrolled in both schools, explaining the study aims and procedures. Parents were asked to return the letter if they did not want their son or daughter to participate in the study ($n = 12$). Students whose letters were returned as undeliverable ($n = 16$) and those with very limited English proficiency ($n = 15$) were not included in the study. Data collection took place during one class period. Five students declined to participate in the study during the data collection phase. In addition, some students (28%) did not complete the entire survey. However, the vast majority of respondents completed the measures analyzed for this report.

Measures

Acculturation. We measured acculturation using the youth version of the Acculturation Rating Scale for Mexican Americans—II (Cuéllar, Arnold, & Maldonado, 1995). We changed the terms *Mexican* and *Mexican American* to *Hispanic/Latino* so as to apply to Hispanics from various national origins. This measure consists of 12 items, 6 of which assess Hispanic orientation (e.g., “I associate with other Hispanics/Latinos”) and 6 of which assess U.S. orientation (e.g., “I enjoy listening to English-language music”). Participants respond to each item using a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely often/always*). In this study, Cronbach’s alpha coefficients for scores on the U.S. and Hispanic orientation scales were .65 and .91, respectively.

Ethnic identity. We assessed ethnic identity using the Multi-group Ethnic Identity Measure (Roberts et al., 1999). This instrument assesses two aspects of ethnic identity: achievement (7 items; e.g., “I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs”), representing having considered the subjective meaning of one’s ethnicity, and affirmation (5 items; e.g., “I have a lot of pride in my ethnic group”), representing identifying with and valuing one’s ethnic group. We summed these two subscales to create a total ethnic identity score (Roberts et al., 1999). Participants indicate their responses on a 4-point scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). In the present sample, Cronbach’s alpha for this total score was .84.

Acculturative stress. We measured acculturative stress using the Process-Oriented Stress subscale from the Societal, Attitudinal, Familial, and Environmental Acculturative Stress Scale for Children (SAFE-C; Chávez, Moran, Reid, & López, 1997). The SAFE-C asks participants to indicate, on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), the extent to which they agreed with such statements as “I have a hard time understanding what others say when they speak” and “It bothers me that I have an accent.” Although researchers generally think of acculturative stress as applying largely to recent immigrants, measures of acculturative stress may be applicable to second-generation as well as first-generation immigrants (e.g., Hovey & King, 1996). The Cronbach’s alpha coefficient for SAFE-C scores in the present sample was .88.

Self-esteem. We used the Rosenberg (1965) Self-Esteem Scale to assess self-esteem in the present study. This measure consists of 10 items assessing overall self-esteem. Five items are worded positively (e.g., “On the whole, I am satisfied with myself”), and 5 are worded negatively (e.g., “I feel I do not have much to be proud of”). Participants indicate whether each statement is true or false, and the subscale score is the sum of “true” responses (with items reverse scored as appropriate). The Cronbach’s alpha coefficient was .80 in the current sample.

Externalizing behavior symptoms. We measured externalizing symptoms using the Oregon Adolescent Depression Project Conduct Disorder Screener (Lewinsohn, Rohde, & Farrington, 2000). This measure consists of six items assessing rule breaking at home, rule breaking at school, fighting, skipping school, running away from home, and lying or stealing. The response scale associated with each of these items ranged from 1 (*rarely or none of the time*) to 4 (*most or all of the time*). The Cronbach’s alpha coefficient was .80 in the current sample.

Prosocial behavior. We used the Prosocial Tendencies Measure (Carlo & Randall, 2002) to assess prosocial behavior. The Prosocial Tendencies Measure consists of 23 items tapping into six dimensions of prosocial behavior: anonymous, public, altruistic, emotional, compliant, and dire need. Participants used a 5-point response scale ranging from 1 (*does not describe me at all*) to 5 (*describes me greatly*) to answer each item. In the present sample, we summed the subscales to create a total score ($\alpha = .92$ in the current sample). Sample items include “I prefer to donate money anonymously,” “It is easy for me to help others who are in a dire situation,” and “Emotional situations make me want to help needy others.”

Academic grades. We assessed self-reports of academic grades using a single item (taken from Kerr, Beck, Shattuck, & Kattar, 2003) that asked “How would you describe your grades?” The response scale ranged from 0 (*mostly Fs*) to 9 (*mostly As*). As reported in a recent meta-analysis by Kuncel, Credé, and Thomas (2005), the correlation between self-reported and official academic grades has ranged between .50 and .70.

Results

Descriptive Statistics and Bivariate Correlations

Descriptive statistics and bivariate correlations among study variables are reported in Table 1. Significant mean differences by gender emerged for Hispanic orientation, academic grades, prosocial behavior, and externalizing symptoms. For all of these variables except externalizing symptoms, girls scored higher than boys. As a result, in our structural equation model gender was entered as a predictor of Hispanic orientation, academic grades, prosocial behavior, and externalizing symptoms.

To evaluate the extent to which our data met the assumptions of a normal distribution, we examined the skewness and kurtosis values of our study variables. Lei and Lomax (2005) specified that skewness and kurtosis values above 2.3 are problematic for maximum likelihood estimation, but that skewness and kurtosis values below 2.3 have little effect on fit indices or parameter estimates. Of our study variables, only externalizing symptoms was severely nonnormal (skewness = 1.84, kurtosis = 4.05). To reduce nonnormality in this variable, we applied a square-root transformation. The transformed externalizing symptoms scores approximated a normal distribution (skewness = 1.33, kurtosis = 1.88). We therefore used maximum likelihood estimation without corrections for nonnormality (cf. Lei & Lomax, 2005).

Tests of Study Hypotheses: Structural Equation Modeling

We tested the study hypotheses using structural equation models estimated in Mplus Release 4.1 (Muthén & Muthén, 2006), which is able to handle the relatively modest amounts of missing data in our dataset. Missing data are handled using full-information maximum likelihood estimation, which is appropriate as long as missingness can be assumed to be random (McKnight, McKnight, Sidani, & Figuredo, 2007). Although our sample size ($N = 347$) is appropriate for structural equation modeling (Jackson, 2003), we did not have adequate power to estimate a full structural equation model with each questionnaire item used as a separate indicator. Structural equation models tend to provide the most stable and

Table 1
Bivariate Correlations and Descriptive Statistics Among Observed Variables

Variable	1	2	3	4	5	6	7	8	Boys (M [SD])	Girls (M [SD])	F	Partial η^2
1. U.S. orientation	—	-.25***	-.11	.04	-.04	.26***	.05	.01	24.62 (3.15)	25.35 (3.08)	2.13	.01
2. Hispanic orientation		—	.23***	.35***	.07	.24***	-.08	.15**	14.23 (6.15)	17.34 (6.69)	9.07**	.06
3. Acculturative stress			—	.07	-.37***	.10	.25***	-.15**	20.83 (12.78)	22.71 (11.92)	0.91	.01
4. Ethnic identity				—	.15*	.25***	-.03	.12*	34.51 (7.02)	36.56 (6.36)	3.66	.02
5. Self-esteem					—	.02	-.36***	.29***	7.71 (2.41)	7.97 (2.29)	0.46	.00
6. Prosocial behavior						—	-.10	.16*	71.44 (14.54)	80.54 (12.73)	17.47***	.10
7. Externalizing symptoms							—	-.37***	9.70 (3.68)	8.52 (3.00)	4.95*	.03
8. Academic grades								—	5.96 (1.82)	6.73 (1.85)	6.89**	.04

* $p < .05$. ** $p < .01$. *** $p < .001$.

accurate estimates when the sample consists of at least 5–10 participants for each parameter estimated (Kline, 2006). As a result, we used a parceling technique, in which responses to adjacent items were summed to create aggregate indicators (known as parcels; Little, Cunningham, Shahar, & Widaman, 2002). We defined each study construct as a latent variable, with the parcels created from the corresponding items serving as indicators. Structural equation modeling with latent variables controls for measurement error, can handle cases with missing data, and permits examination of multiple mediating pathways within a single model (MacKinnon, Lockwood, & Williams, 2004).

We evaluated the model according to standard fit indices. The comparative fit index (CFI) indicates the degree to which the specified model provides a better fit to the data than a null model with no paths or latent variables. The root mean square error of approximation (RMSEA) indicates the extent to which the covariance structure specified in the model deviates from the covariance structure observed in the data. The chi-square statistic tests the null hypothesis of perfect fit to the data but is vulnerable to inflation in larger samples and in more complex models. Given the present sample size and the complexity of the present model, we report the chi-square but do not use it in interpretation.

Although the literature is mixed with regard to cutoff values for the CFI and RMSEA, we follow the guidance of Kline (2006) and Quintana and Maxwell (1999), who maintained that a CFI of .90 or above and a RMSEA of .08 or below is acceptable. We first tested the model reflecting our hypotheses, in which the relationship of acculturation to psychosocial adjustment is assumed to operate only through acculturative stress and the relationship of ethnic identity to psychosocial adjustment is assumed to operate only through self-esteem. This model provided an adequate fit to the data, $\chi^2(508) = 863.64, p < .001, CFI = .90, RMSEA = .045, 90\% CI = .040-.050$. The model, with path coefficients included, is displayed in Figure 1. Interestingly, although the bivariate correlation between observed measures of ethnic identity and self-esteem was .15, the path coefficient between latent variables for ethnic identity and self-esteem was .26. Latent variable results,

in which measurement error is controlled, may provide more accurate and trustworthy results than observed-level bivariate correlations.

We then tested for mediation in two steps. First, to ascertain whether there was any mediation at all, we used the asymmetric distribution of products test (MacKinnon et al., 2004). This test computes the product of the unstandardized path coefficients that make up the mediating pathway. If this product is significantly different from zero, then mediation is assumed. Second, we added direct paths from acculturation and ethnic identity to the indices of psychosocial adjustment. The absence of a significant direct path, in combination with a significant mediational pathway, provides even stronger evidence of mediation.

In the initial model, the relationships of ethnic identity to both academic grades ($\beta = 0.09, p < .01$) and externalizing symptoms ($\beta = -0.12, p < .01$) were mediated by self-esteem. Acculturative stress was not related to any of the psychosocial adjustment indices, and therefore it did not mediate the relationships of U.S. or Hispanic orientation to psychosocial adjustment. U.S. orientation was, however, negatively related to acculturative stress ($\beta = -0.41, p < .001$).

When we added the direct paths, none of the direct relationships of ethnic identity to indices of psychosocial adjustment were statistically significant, and self-esteem continued to mediate the relationships of ethnic identity to academic grades and prosocial behavior. Significant direct paths emerged from both U.S. orientation ($\beta = 0.34, p < .05$) and Hispanic orientation ($\beta = 0.35, p < .01$) to prosocial behavior.

By default, Mplus estimates correlations among all pairs of variables in the structural portion of the model (i.e., not including indicators used to define latent variables). The correlation between self-esteem and acculturative stress was large and significant ($r = -.43, p < .001$). As a result, as a post hoc endeavor, we estimated a path from acculturative stress to self-esteem, and we tested for double mediation in the relationships of U.S. orientation to psychosocial adjustment. U.S. orientation was indirectly related to both externalizing symptoms ($\beta = -0.07, p < .01$) and academic

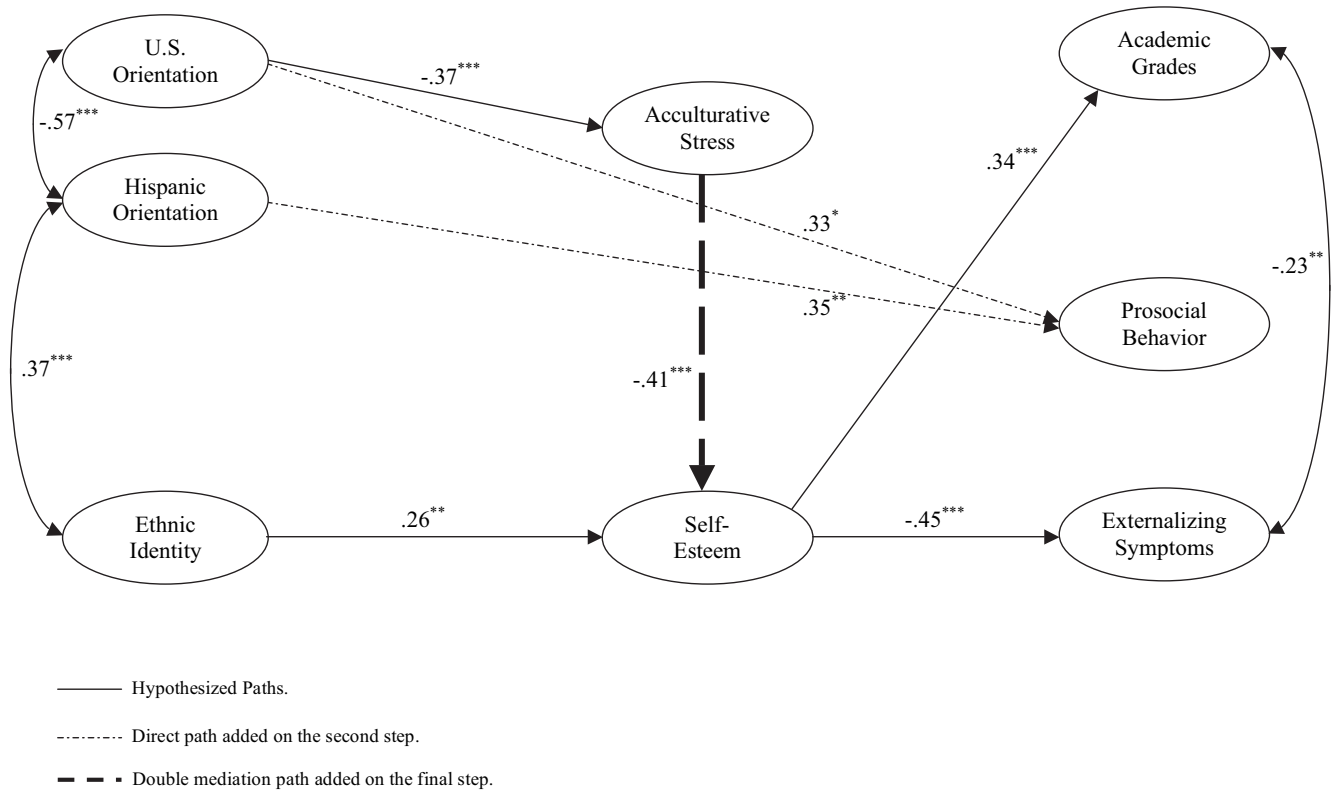


Figure 1. Structural equation model. Only significant paths are displayed.

grades ($\beta = 0.05, p < .02$) through acculturative stress and self-esteem.

Estimation of Competing Models

Because structural equation modeling is a confirmatory technique, fit indices are useful only for ascertaining the fit of a specific model to the data. They do not identify the best fitting model or rule out alternative models that may explain the data as well as (or better than) the specified model (Tomarken & Waller, 2003). As a result, it is important to evaluate models with different causal flow and demonstrate that these alternative models provide an inferior fit to the data than that of the model that the authors wish to retain. This is especially important in cross-sectional studies, where directionality cannot be empirically ascertained.

We estimated two competing models in the current set of analyses: (a) a model in which the direction of effects was completely reversed and (b) a model in which self-esteem and acculturative stress served as ultimate outcomes and in which academic grades, prosocial behavior, and externalizing symptoms served as mediators. The first model evaluated the directionality of the model as a whole, and the second model evaluated the directionality of the mediational process. Competing models are generally not nested, and as a result they must be compared using the Bayesian information criterion (BIC; G. Schwartz, 1978), where lower BIC values represent a better fitting model. Provided that these two competing models could be rejected as competing explanations of the data, we would be able to more confidently argue for the direction of effects that we have specified in our model.

Our specified model (BIC = 33,152.43) provided a better fit to the data than did either competing model A (BIC = 33,692.52) or competing model B (BIC = 33,700.69). As a result, we retained the model depicted in Figure 1.

Discussion

We designed the present study to examine the extent to which acculturation and ethnic identity are related to academic performance, externalizing symptoms, and prosocial behavior in a sample of Hispanic middle-school students, as well as the mediating role of acculturative stress and self-esteem in these associations. We conducted our study with Hispanic early adolescents residing in a midsized Midwestern community where Hispanic immigration is less widespread than in other parts of the country. This strategy permitted us to investigate the experiences of Hispanic adolescents living in more monocultural areas.

Consistent with our use of a community, rather than a clinical, sample, levels of externalizing behavior tended to be fairly low. Adolescents also reported being more oriented toward U.S. culture than toward Hispanic culture. Although this may be a function of the predominance of U.S.-born adolescents in the sample, studies have also found Hispanic immigrant adolescents in Miami (S. J. Schwartz, Pantin, Sullivan, Prado, & Szapocznik, 2006) and in Los Angeles (Unger et al., 2002) to score high on measures of U.S. cultural orientation. The fairly monocultural community in which the adolescents lived, along with their nativity, may account for their fairly low levels of Hispanic cultural orientation. However,

there was sufficient variability in Hispanic cultural orientation to support a significant relationship with prosocial behavior.

Indirect Relationships of Ethnic Identity and Acculturation to Psychosocial Adjustment

Self-esteem appeared to mediate the relationships of ethnic identity to academic grades and to externalizing symptoms. Ethnic identity was not related to these adjustment indices at the bivariate level, suggesting that its relationships to these indices is largely indirect and operates through self-esteem. Identifying with an ethnic group appears to increase positive feelings about oneself, which are then associated with positive psychosocial adjustment and inversely associated with negative psychosocial adjustment. Self-esteem also appeared to partially mediate the relationships of acculturation to academic grades and to externalizing symptoms in a complex way. This pattern of findings suggests that adopting U.S. customs decreases the likelihood of discrimination and other stressors related to acculturation—and that these stressors may interfere with self-esteem and with academic performance. These stressors may also be associated with acting-out behavior through reduced self-esteem. In short, orientation toward U.S. cultural practices may protect against externalizing symptoms and promote positive outcomes in Hispanic immigrants in new receiving communities.

Ethnic Identity and Acculturation: Overlapping or Distinct?

Earlier, we posed the question of whether ethnic identity and acculturation could be delineated from one another vis-à-vis academic grades, prosocial behavior, and externalizing symptoms. The present results suggest that although there is overlap between ethnic identity and acculturation, these variables can be considered somewhat distinct in the present sample. First, Hispanic orientation and ethnic identity were correlated only modestly. Second, U.S. orientation and ethnic identity, which would be considered polar opposites in the unidimensional model of cultural identity (cf. Flannery et al., 2001), were virtually uncorrelated, whereas U.S. and Hispanic acculturation orientations were negatively intercorrelated. Third, although both Hispanic and U.S. cultural orientations were directly related to prosocial behavior, over and above the double mediation effect through acculturative stress and self-esteem, ethnic identity was not directly related to any of the psychosocial adjustment indices. Third, although the low levels of Hispanic orientation may reflect the predominance of second- and third-generation immigrants in the sample, ethnic identity scores were fairly high. So, despite the strong conceptual overlap between ethnic identity and acculturation (cf. S. J. Schwartz, Montgomery, & Briones, 2006; Schwartz et al., 2007), these two components of cultural identity appear to possess discriminant validity vis-à-vis one another.

Conceptually, ethnic identity represents a set of cultural values, inasmuch as it refers to affinity for one's cultural group and exploration of its subjective meaning. On the other hand, the majority of acculturation measures focus on behaviors. It may be that behavioral components of cultural identity are more closely associated with behavioral outcomes (e.g., academic performance, prosocial behavior) than are value-based components of cultural

identity. Had we measured value-based outcomes, such as character and compassion, ethnic identity (as a value-based component of cultural identity) may have been more strongly and directly related. Future research should therefore examine these dimensions of ethnic identity and their relevance to a wider array of psychosocial outcomes among Hispanic adolescents.

It should also be noted that one can identify with a group without engaging in some of the behaviors characteristic of that group. For example, 39% of adolescents who spoke no Spanish and 58% of those who spoke Spanish "very little or not very often" nonetheless provided an average rating of "strongly agree" to items assessing Hispanic ethnic identity. As a result, we would conclude that ethnic identity and behavioral acculturation represent overlapping, but somewhat distinct, aspects of cultural identity. This finding is consistent with prior research with Hispanics in other parts of the United States (e.g., Zamboanga et al., 2006). Thus, later generation immigrants who have lost some of the behavioral components of acculturation may still identify strongly with the ethnic group and with its values.

Acculturation and Psychosocial Adjustment: Revisiting Associations From Past Studies

The relationship of U.S. cultural orientation to externalizing behavior, as obtained from the present results, appears to contradict those found in previous studies. Previous work has identified acculturation to U.S. cultural practices as a risk factor for behavior problems (Dinh et al., 2002) and substance use (Gil et al., 2000). However, many of the studies reporting this positive relationship were conducted in areas with high concentrations of Hispanics, such as Miami (Gil et al.) and the Southwest (Dinh et al.). In contrast, we conducted our study in a midsized, fairly monocultural community. It may be that among Hispanic adolescents, acculturation to U.S. cultural practices, coupled with relinquishment of Hispanic cultural practices, is hazardous to one's health only where there are other viable cultural options—such as adopting some U.S. practices while remaining connected to an established local Hispanic community. In contexts in which acculturation to U.S. cultural practices is the most feasible option (because the Hispanic community is less well established), such acculturation may actually be protective. It may also be that acculturation to U.S. cultural practices is less hazardous among later generation immigrants, especially those who do not belong to an established and prominent heritage-culture community.

The finding that both the Hispanic and U.S. orientations were associated with prosocial behavior is potentially important. What this may suggest is that connection to a cultural community—the receiving context, the family and other heritage-culture institutions, or both—is associated with positive behavior. Perhaps adopting receiving-culture practices while retaining some heritage-culture practices may be the most successful method of cultural adaptation for immigrants and their descendants (cf. Tadmor & Tetlock, 2006). Moreover, there is evidence that in some ethnic groups, heritage-culture practices may retain prominence into the second, third, and even fourth generations (Ponterotto et al., 2001). The fact that half of the parents, and most of the adolescents, in our study were U.S. born may thus not serve as an impediment to studying acculturation. Our findings reaffirm that aspects of the

heritage culture remain important for second-, third-, and later generation adolescents.

In summary, the present results suggest that to some extent, the relationships of cultural identity and adaptation to psychosocial adjustment may operate through self-perceptions. Ethnic identity appears to relate to academic grades and externalizing behaviors through self-esteem, whereas the U.S. and Hispanic orientations appear to relate to academic grades and externalizing behaviors through both acculturative stress and self-esteem. It is also important to study the extent to which other types of self-perceptions, such as self-concept and personal identity, also play a role in the link between cultural identity processes and psychosocial adjustment. Such future research will provide an estimate as to whether only self-esteem plays such a role or whether other self-processes do so as well. It is also important to ascertain the degree to which the present results would replicate with first-generation Hispanic immigrants or in more multicultural urban areas.

To the extent that the present results are applicable to new immigrants and their adolescent children, these results may be increasingly important as more and more Hispanics immigrate to monocultural communities that do not have established Hispanic populations. Although improving these areas' receptivity to immigrants is an important direction to take at the sociostructural level (S. J. Schwartz, Montgomery, & Briones, 2006), at the individual level it is important for Hispanic adolescents moving to or residing in monocultural communities to adopt U.S. cultural practices while still retaining Hispanic-culture practices and a sense of Hispanic ethnic identity. In states such as North Carolina, Kentucky, Tennessee, and Minnesota, where the Hispanic population has doubled or tripled since 1990 (Marotta & García, 2003), adolescents may serve as a bridge between their unacculturated parents and the monocultural communities in which they reside (Morales & Hanson, 2005), and many of their peers are likely to be non-Hispanic White or African American. Accordingly, both Hispanic and U.S. cultural practices are important in the lives of these adolescents.

Limitations and Conclusions

The present results should be considered in light of several limitations. First, although cross-sectional studies can be useful for mapping relationships among variables, and although we were able to reject two competing models as explanations of our data, cross-sectional studies do not provide empirical guidance regarding causality or sequentiality (Kraemer, Yesavage, Taylor, & Kupfer, 2000). Second, excluding participants with limited English ability did not allow us to study the full range of acculturation. Third, all of the measures we used were self-reports from the adolescents themselves. As a result, some of the results may have capitalized on shared method variance involved in using multiple variables drawn from the same reporter. Self-reports may also be vulnerable to socially desirable responding. In future studies on Hispanic adolescents in monocultural communities and in areas in which Hispanic immigration is a relatively new phenomenon, it may be useful to gather parent, peer, teacher, or observational reports of prosocial behavior and externalizing problems and to use official school reports of academic grades. Fourth, the lower than expected internal consistency estimate for the U.S. cultural orientation subscale on the Acculturation Rating Scale for Mexican Americans—II may have resulted from some students' lack of familiarity

with the word *Anglo*, which is embedded in many of the U.S.-culture orientation items. Fifth, we did not collect information regarding the reasons why these Hispanic families chose to settle in a midsized Midwestern community rather than in a large, multicultural urban area such as Miami, New York, Chicago, or Los Angeles. It is important to understand why immigrant families choose to settle in different areas of the United States and the ways in which these choices affect their cultural and psychosocial adjustment.

A sixth limitation concerns the heterogeneity subsumed under the panethnic term *Hispanic*. There is a great deal of variability among individuals of Spanish-speaking descent in terms of skin tone, national origin, socioeconomic status, and ability to fit into mainstream U.S. society. Skin tone, in particular, may determine the extent to which a Hispanic person will continue to be viewed as a minority even after mastering the language and customs of the United States (e.g., Espino & Franz, 2002). Moreover, it is possible that among later generation Hispanics, cultural heritage may be most important for those whose physical appearance identifies them as Hispanic. Only a small number of studies have taken this into account with regard to Hispanics. We did not ask about skin tone in the present study, but we would recommend that future research do so.

Despite these limitations, the present results help to shed light on the mechanisms through which cultural identity processes may be related to psychosocial adjustment. It appears that self-esteem, and perhaps other aspects of self, may be partly responsible for the link between cultural identity and adjustment. Moreover, the role of acculturative stress in psychosocial adjustment among Hispanic adolescents in largely monocultural communities appears to operate through self-esteem as well. This may or may not also be the case in more multicultural communities, and further research is warranted in this regard.

The distinction between traditional immigrant-receiving cities, regions, and communities and new or monocultural immigration destinations is worthy of increased empirical attention. S. J. Schwartz, Pantin, et al. (2006) suggested that the acculturation process operates differently in ethnic enclaves than in other types of receiving communities. It is possible that the acculturation process operates differently in largely monocultural immigration destinations than in other receiving communities. If this is the case, then receiving communities might be subdivided into ethnic enclaves, multicultural urban areas, and largely monocultural receiving communities. Replicating the present results, as well as those of other studies on acculturation, ethnic identity, and other aspects of cultural identity, in each of these types of contexts would permit us to ascertain the extent to which the relationships of cultural identity to indices of psychosocial adjustment are dependent on the community where the person resides.

References

- Amason, P., Allen, M. W., & Holmes, S. A. (1999). Social support and acculturative stress in the multicultural workplace. *Journal of Applied Communication Research, 27*, 310–334.
- Carlo, G., & Randall, B. A. (2002). The development and validation of a multidimensional measure of prosocial behavior. *Journal of Youth and Adolescence, 31*, 31–44.
- Centers for Disease Control & Prevention. (2004). *HIV/AIDS Surveillance*

- Report: Vol. 15. *Cases of HIV infection and AIDS in the United States, 2003*. Atlanta, GA: Department of Health & Human Services.
- Chávez, D. V., Moran, V. R., Reid, S. L., & López, M. (1997). Acculturative stress in children: A modification of the SAFE scale. *Hispanic Journal of Behavioral Sciences, 19*, 34–44.
- Chun, K. M., Organista, P. B., & Marín, G. (2003). *Acculturation: Advances in theory, measurement, and applied research*. Washington, DC: American Psychological Association.
- Cuéllar, I., Arnold, B., & González, G. (1995). Cognitive referents of acculturation: Assessment of cultural constructs in Mexican Americans. *Journal of Community Psychology, 23*, 339–356.
- Dinh, K. T., Roosa, M. W., Tein, J. Y., & López, V. A. (2002). The relationship between acculturation and problem behavior proneness in a Hispanic youth sample: A longitudinal mediation model. *Journal of Abnormal Psychology, 30*, 295–309.
- Donnellan, M. B., Trzesniewski, K. H., Robins, R. W., Moffitt, T. E., & Caspi, A. (2005). Low self-esteem is related to aggression, antisocial behavior, and delinquency. *Psychological Science, 16*, 328–335.
- Dowling, E. M., Gestsdottir, S., Anderson, P. M., von Eye, A., & Lerner, R. M. (2003). Spirituality, religiosity, and thriving among adolescents: Identification and confirmation of factor structures. *Applied Developmental Science, 7*, 253–260.
- Espino, R., & Franz, M. M. (2002). Latino phenotypic discrimination revisited: The impact of skin color on occupational status. *Social Science Quarterly, 82*, 612–623.
- Feliciano, C. (2001). The benefits of biculturalism: Exposure to immigrant culture and dropping out of school among Asian and Latino youths. *Social Science Quarterly, 82*, 865–879.
- Finch, B. K., & Vega, W. A. (2003). Acculturation stress, social support, and self-rated health among Latinos in California. *Journal of Immigrant and Minority Health, 5*, 109–117.
- Flannery, W. P., Reise, S. P., & Yu, J. (2001). A comparison of acculturation models. *Personality and Social Psychology Bulletin, 27*, 1035–1045.
- French, D. C., & Dishion, T. J. (2003). Predictors of early initiation of sexual intercourse among high-risk adolescents. *Journal of Early Adolescence, 23*, 295–315.
- Fulgini, A. J., Witkow, M., & García, C. (2005). Ethnic identity and the academic adjustment of adolescents from Mexican, Chinese, and European backgrounds. *Developmental Psychology, 41*, 799–811.
- Gil, A., Wagner, E., & Vega, W. (2000). Acculturation, familism and alcohol use among Latino adolescent males: Longitudinal relations. *Journal of Community Psychology, 28*, 443–458.
- González, N., Deardorff, J., Formoso, D., Barr, A., & Barrera, M., Jr. (2006). Family mediators of the relationship between acculturation and adolescent mental health. *Family Relations, 55*, 318–330.
- Greene, J. P., & Forster, G. (2003). *Public high school graduation and college readiness rates in the United States*. New York: Manhattan Institute for Policy Research.
- Helms, J., & Tallyrand, R. (1997). Race is not ethnicity. *American Psychologist, 52*, 1246–1247.
- Hovey, J. D., & King, C. A. (1996). Acculturative stress, depression, and suicidal ideation among immigrant and second-generation Latino adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 35*, 1183–1192.
- Huntington, S. P. (2004, March/April). The Hispanic challenge. *Foreign Policy, 30*–46.
- Jackson, D. L. (2003). Revisiting sample size and the number of parameters: Some support for the N:q hypothesis. *Structural Equation Modeling, 10*, 128–141.
- Jessor, R., Turbin, M. S., Costa, F. M., Dong, Q., Zhang, H., & Wang, C. (2003). Adolescent problem behavior in China and the United States: A cross-national study of psychosocial protective factors. *Journal of Research on Adolescence, 13*, 329–360.
- Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2006). *Monitoring the future: National results on adolescent drug use—Overview of key findings 2005*. Bethesda, MD: National Institute on Drug Abuse.
- Kerr, M. H., Beck, K., Shattuck, T. D., & Kattar, C. (2003). Family involvement, problem and prosocial behavior outcomes of Latino youth. *American Journal of Health Behavior, 27*, 55–65.
- King, S. M., Iacono, W. G., Jr., & McGue, M. (2004). Childhood externalizing and internalizing psychopathology in the prediction of early substance use. *Addiction, 99*, 1548–1559.
- Kline, R. B. (2006). *Principles and practices of structural equation modeling* (2nd ed.). New York: Guilford Press.
- Kraemer, H. C., Yesavage, J. A., Taylor, J. L., & Kupfer, D. (2000). How can we learn about developmental processes from cross-sectional studies, or can we? *American Journal of Psychiatry, 157*, 163–171.
- Kuncel, N. R., Credé, M., & Thomas, L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature. *Review of Educational Research, 75*, 63–82.
- Lane, J., Lane, A. M., & Kyprianou, A. (2004). Self-efficacy, self-esteem, and their impact on academic performance. *Social Behavior Perspectives, 32*, 247–256.
- Lara, M., Gamboa, C., Kahramanian, M. I., Morales, L. S., & Bautista, D. E. H. (2005). Acculturation and Latino health in the United States: A review of the literature and its sociopolitical context. *Annual Review of Public Health, 26*, 367–397.
- Lei, M., & Lomax, R. G. (2005). The effect of varying degrees of nonnormality in structural equation modeling. *Structural Equation Modeling, 12*, 1–27.
- Lerner, R. M., Lerner, J., Almerigi, J. B., Theokas, C., Phelps, E., Gestsdottir, S., et al. (2005). Positive youth development, participation in community youth development programs, and community contributions of fifth grade adolescents: Findings from the first wave of the 4-H study of positive youth development. *Journal of Early Adolescence, 25*, 17–71.
- Lewinsohn, P. M., Rohde, P., & Farrington, D. P. (2000). The OADP-CDS: A brief screener for adolescent conduct disorder. *Journal of the American Academy of Child & Adolescent Psychiatry, 39*, 888–895.
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling, 9*, 151–173.
- López, E., Ehly, S., & García-Vázquez, E. (2002). Acculturation, social support, and academic achievement of Mexican and Mexican American high school students: An exploratory study. *Psychology in the Schools, 39*, 245–257.
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research, 39*, 99–128.
- Marotta, S. A., & García, J. G. (2003). Latinos in the United States in 2000. *Hispanic Journal of Behavioral Sciences, 25*, 13–34.
- Marsiglia, F. F., Kulis, S., Hecht, M. L., & Sills, S. (2004). Ethnicity and ethnic identity as predictors of drug norms and drug use among preadolescents in the U.S. Southwest. *Substance Use and Misuse, 39*, 1061–1094.
- McKnight, P. E., McKnight, K. M., Sidani, S., & Figuredo, A. J. (2007). *Missing data: A gentle introduction*. New York: Guilford Press.
- Morales, A., & Hanson, W. E. (2005). Language brokering: An integrative review of the literature. *Hispanic Journal of Behavioral Sciences, 27*, 471–503.
- Muthén, L. K., & Muthén, B. O. (2006). *Mplus 4.1 user's guide*. Los Angeles: Author.
- Phinney, J. S. (1990). Ethnic identity in adolescents and adults: Review of research. *Psychological Bulletin, 108*, 499–514.
- Phinney, J. S. (2003). Ethnic identity and acculturation. In K. M. Chun,

- P. B. Organista, & G. Marín (Eds.), *Acculturation: Advances in theory, measurement, and applied research* (pp. 63–82). Washington, DC: American Psychological Association.
- Phinney, J. S., Cantu, C. L., & Kurtz, D. A. (1997). Ethnic and American identity as predictors of self-esteem among African American, Latino, and White adolescents. *Journal of Youth and Adolescence, 26*, 165–185.
- Phinney, J. S., Romero, I., Nava, M., & Huang, D. (2001). The role of language, parents, and peers in ethnic identity among adolescents in immigrant families. *Journal of Youth and Adolescence, 30*, 135–153.
- Ponterotto, J. G., Rao, V., Zwiig, J., Rieger, B. P., Schaefer, K., Michalakou, S., et al. (2001). The relationship of acculturation and gender to attitudes toward counseling in Italian and Greek American college students. *Cultural Diversity & Ethnic Minority Psychology, 7*, 362–375.
- Portes, A., & Rumbaut, R. G. (2001). *Legacies: The story of the immigrant second generation*. Berkeley: University of California Press.
- Quintana, S. M., & Maxwell, S. E. (1999). Implications of recent developments in structural equation modeling for counseling psychology. *Counseling Psychologist, 27*, 485–527.
- Ramírez, R. R., & de la Cruz, G. P. (2003). *The Hispanic population in the United States: March 2002* (Current Population Report P20–545). Washington, DC: U.S. Census Bureau.
- Roberts, R. E., Phinney, J. S., Mase, L. C., Chen, Y. R., Roberts, C. R., & Romero, A. (1999). The structure of ethnic identity in young adolescents from diverse ethnocultural groups. *Journal of Early Adolescence, 19*, 301–322.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rudmin, F. W. (2003). Critical history of the acculturation psychology of assimilation, separation, marginalization, and integration. *Review of General Psychology, 7*, 3–37.
- Ryder, A. G., Alden, L. E., & Paulhus, D. L. (2000). Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self identity, and adjustment. *Journal of Personality and Social Psychology, 79*, 49–65.
- Scales, P. C., Foster, K. C., Mannes, M., Horst, M. A., Pinto, K. C., & Rutherford, A. (2005). School-business partnerships, developmental assets, and positive outcomes among urban high school students: A mixed-methods study. *Urban Education, 40*, 144–189.
- Schwartz, G. (1978). Estimating the dimension of a model. *Annals of Statistics, 6*, 461–464.
- Schwartz, S. J., Montgomery, M. J., & Briones, E. (2006). The role of identity in acculturation among immigrant people: Theoretical propositions, empirical questions, and applied recommendations. *Human Development, 49*, 1–30.
- Schwartz, S. J., Pantin, H., Sullivan, S., Prado, G., & Szapocznik, J. (2006). Nativity and years in the receiving culture as markers of acculturation in ethnic enclaves. *Journal of Cross-Cultural Psychology, 37*, 345–353.
- Schwartz, S. J., Zamboanga, B. L., Rodriguez, L., & Wang, S. C. (2007). The structure of cultural identity in an ethnically diverse sample of emerging adults. *Basic and Applied Social Psychology, 29*, 157–173.
- Smith, E. P., Walker, K., Fields, L., Brookins, C. C., & Seay, R. C. (1999). Ethnic identity and its relationship to self-esteem, perceived efficacy, and prosocial attitudes in early adolescence. *Journal of Adolescence, 22*, 867–880.
- Sullivan, S., Schwartz, S. J., Prado, G., Pantin, H., Huang, S., & Szapocznik, J. (in press). A bidimensional model of acculturation for examining differences in family functioning and behavior problems in Hispanic immigrant adolescents. *Journal of Early Adolescence*.
- Supple, A. J., Ghazarian, S. R., Frabutt, J. M., Plunkett, S. W., & Sands, T. (2006). Contextual influences on Latino adolescent ethnic identity and academic outcomes. *Child Development, 77*, 1427–1433.
- Tadmor, C. T., & Tetlock, P. E. (2006). Biculturalism: A model of the effects of second culture exposure on acculturation and integrative complexity. *Journal of Cross-Cultural Psychology, 37*, 173–190.
- Tomarken, A. J., & Waller, N. G. (2003). Potential problems with “well-fitting” models. *Journal of Abnormal Psychology, 112*, 578–598.
- Tubman, J. G., Gil, A. G., & Wagner, E. F. (2004). Co-occurring substance use and delinquent behavior during early adolescence: Emerging relations and implications for intervention strategies. *Criminal Justice and Behavior, 31*, 463–488.
- Umaña-Taylor, A. J. (2004). Ethnic identity and self-esteem: Examining the role of social context. *Journal of Adolescence, 27*, 139–146.
- Umaña-Taylor, A. J., Yazedjian, A., & Bámaca-Gómez, M. (2004). Developing the ethnic identity scale using Eriksonian and social identity perspectives. *Identity: An International Journal of Theory and Research, 4*, 9–38.
- Unger, J. B., Gallagher, P., Shakib, S., Ritt-Olson, A., Palmer, P. H., & Johnson, C. A. (2002). The AHIMSA acculturation scale: A new measure of acculturation for adolescents in a multicultural society. *Journal of Early Adolescence, 22*, 225–251.
- U. S. Census Bureau. (2000). *Quickfacts for the Grand Rapids, MI area*. Retrieved May 16, 2007, from <http://quickfacts.census.gov/qfd/states/26/2638640.html>
- Worrell, F. C., & Gardner-Kitt, D. L. (2006). The relationship between racial and ethnic identity in Black adolescents: The Cross Racial Identity Scale and the Multi-Group Ethnic Identity Measure. *Identity: An International Journal of Theory and Research, 6*, 293–315.
- Zamboanga, B. L., & Carlo, G. (in press). Applying aspects of problem behavior theory to Latino youth: Theoretical, methodological, and sociocultural considerations. In A. G. Mata (Ed.), *High-risk communities, families and youth: Implications for drug abuse intervention and prevention*. Lewiston, NY: Mellen Press.
- Zamboanga, B. L., Raffaelli, M., & Horton, N. J. (2006). Acculturation status and heavy alcohol use among Mexican American college students: An investigation of the moderating role of gender. *Addictive Behaviors, 31*, 2188–2198.