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## Substance Use and Sexual Behavior among Recent Hispanic Immigrant Adolescents: Effects of Parent-Adolescent Differential Acculturation and Communication\*

Seth J. Schwartz<sup>1,\*\*</sup>, Jennifer B. Unger<sup>2</sup>, Sabrina E. Des Rosiers<sup>1</sup>, Shi Huang<sup>1</sup>, Lourdes Baezconde-Garbanati<sup>2</sup>, Elma I. Lorenzo-Blanco<sup>3</sup>, Juan A. Villamar<sup>1</sup>, Daniel W. Soto<sup>2</sup>, Monica Pattarroyo<sup>2</sup>, and José Szapocznik<sup>1</sup>

<sup>1</sup>University of Miami

<sup>2</sup>University of Southern California

<sup>3</sup>University of Michigan

### Abstract

**Objectives**—To ascertain the effects of parent-adolescent acculturation gaps, perceived discrimination, and perceived negative context of reception on adolescent cigarette smoking, alcohol use, sexual activity, and sexual risk taking. We used an expanded, multidimensional model of acculturation.

**Method**—A sample of 302 recently immigrated parent-adolescent dyads (152 from Miami and 150 from Los Angeles) completed measures of acculturation (Hispanic and American practices and identifications, and individualist and collectivist values) and parent-adolescent communication. Adolescents completed measures of recent cigarette smoking, alcohol use, sexual behavior, and sexual risk taking.

**Results**—Parent-adolescent gaps in American practices and ethnic identity, and perceptions of a negative context of reception, predicted compromised parent-adolescent communication. In Miami only, adolescent-reported communication negatively predicted odds of cigarette smoking, occasions of drunkenness, and number of sexual partners. Also in Miami only, parent-reported communication positively predicted these outcomes, as well as occasions of adolescent binge

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\*\*Seth J. Schwartz, Associate Professor, University of Miami, Epidemiology and Public Health, Leonard M. Miller School of Medicine, 1425 N.W. 10th Avenue, Miami, Florida 33136, UNITED STATES, S Schwartz@med.miami.edu.

#### Contributors

Dr. Schwartz is the principal investigator of the Miami site and conducted the statistical analyses. Dr. Unger is the principal investigator of the Los Angeles site and participated in manuscript preparation. Dr. Des Rosiers helped to supervise data collection at the Miami site and to prepare the data for analysis, and she also contributed to manuscript preparation. Dr. Huang helped to prepare the data for analysis and collaborated on the statistical analyses. Dr. Baezconde-Garbanati participated in manuscript preparation and advised on the cultural context of Los Angeles. Mrs. Lorenzo-Blanco participated in manuscript preparation. Mr. Villamar managed the data collection process at the Miami site. Mr. Soto managed the data collection process at the Los Angeles site. Ms. Pattarroyo helped to supervise data collection at the Los Angeles site. Dr. Szapocznik participated in manuscript preparation, advised on the cultural context of Miami, and served as a senior advisor for the study. All authors approved the submission of this manuscript.

#### Conflict of Interest

None of the authors have any conflicts of interest to report.

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drinking, drunkenness, number of sexual partners, and odds of unprotected sex. The only significant findings in Los Angeles were protective effects of parent-reported communication on frequency of alcohol use and of binge drinking. Mediational effects emerged only in the Miami sample.

**Conclusions**—Effects of parent-adolescent acculturation gaps vary across Hispanic groups and receiving contexts. The especially strong parental control in many Mexican families may account for these differences. However, other important differences between Hispanic subgroups and communities of reception could also account for these differences. Prevention efforts might encourage Hispanic youth both to retain their culture of origin and to acquire American culture.

## Keywords

Hispanic; acculturation; discrimination; alcohol use; recent immigrants

## 1. Introduction

Important health disparities exist between Hispanics and non-Hispanic White early and middle adolescents, including cigarette and alcohol use (Johnston et al., 2011) and sexual risk taking (CDC, 2011). Specifically, in 2010, 59% of Hispanic 10<sup>th</sup> graders, compared to 53% of White 10<sup>th</sup> graders, had used alcohol in the past year (Johnston et al., 2011); and 55% of Hispanic high school students, compared to 63% of Whites, reported using a condom at last sexual intercourse (CDC, 2011). Identifying cultural predictors of these disparities, and of the behaviors associated with them, could guide the development of prevention programs to reduce health disparities (Krieger, 2012).

### 1.1. Acculturation and Health Outcomes in Hispanics

Although the construct of acculturation has a long history, the majority of public health studies have used measures and models that do not reflect the lived reality of immigrants (Thomson and Hoffman-Goetz, 2009). As defined within cultural studies, acculturation is a bidimensional process, in which heritage-culture retention and American-culture acquisition represent separate dimensions (e.g., Berry, 1997). Previous studies vary in their conceptualization of the *domains* of acculturation, including attitudes (Berry, 1980), cultural practices such as language use, culinary preferences, media, and choice of friends (Szapocznik et al., 1980); and ethnic identity (Phinney, 2003). Cultural values (e.g., individualism, collectivism) are seldom included as indices of acculturation.

Schwartz et al. (2010) proposed an integrative, multidimensional perspective, positing cultural practices, values, and identifications as domains of acculturation; and heritage and receiving cultural streams as operating within each of these domains. For example, for U.S. Hispanics, acculturation includes Hispanic practices, American practices, collectivist values, individualist values, Hispanic identity, and American identity. Each process may be differently linked with substance use and sexual risk behavior, although retention of Hispanic cultural practices and values typically is considered protective (Schwartz et al., 2011).

Acculturation is especially challenging for recent immigrant families (Smokowski and Bacallao, 2011). Adolescents and parents may face discrimination and a hostile context of reception in their new homelands (Portes and Rumbaut, 2006). Moreover, recent-immigrant adolescents acculturate to the receiving society quickly, whereas parents do not (Schwartz et al., 2006b), leading to *differential acculturation*.

**1.1.1. Differential Acculturation**—Because Hispanic children and adolescents attend school in the U.S., they typically gravitate toward U.S. culture, learning to function both in the receiving society and in their often traditionally-oriented families and communities (Padilla, 2006). Conversely, adults, especially those living in ethnic enclaves, may function well using their native languages and customs and may not “acculturate” much (e.g., Schwartz et al., 2006b). Consequently, as hypothesized by Szapocznik and colleagues (1978), parent-child acculturation gaps emerge. These gaps may be a function of both greater exposure to U.S. culture and greater cultural plasticity among children and adolescents than among adults (Cheung et al., 2011). Regardless of their source, cultural gaps can be measured as the parent-adolescent difference in a given acculturation-related variable (Telzer, 2010). Such an approach uses data from multiple reporters to create a gap score, as opposed to asking parents or adolescents to report on the “acculturation gap” in their families.

The effects of acculturation gaps on adolescent outcomes have received some empirical attention. Szapocznik and Kurtines (1980) found that Cuban families with troubled and substance abusing adolescents had large parent-adolescent acculturation gaps. These gaps were believed to exacerbate problems with parent-adolescent communication and other aspects of family functioning, which in turn would predict adolescent substance use and sexual risks (Szapocznik and Kurtines, 1993).

Studies have examined parts of this “differential acculturation hypothesis” (Telzer, 2011). Smokowski et al. (2008) found associations of acculturation gaps with compromised family adaptability and cohesion, but they did not investigate links with adolescent outcomes. Martinez (2006) found that differential acculturation predicted behavior problems and substance use, whereas Lau et al. (2005) did not. However, neither of these studies examined family processes as mediators. Unger et al. (2009) found that parent-adolescent discrepancies in American cultural practices predicted low family cohesion, which predicted adolescent substance use. However, parents’ acculturation was assessed via adolescents’ reports. Telzer (2011) concluded that families where adolescents are more acculturated toward the U.S. than their parents may be less problematic than families where adolescents lose their cultural heritage while parents retain it. Although most acculturation gap research has focused on cultural practices, we expected the pattern identified by Telzer (2011) to apply to cultural values and identifications as well.

## 1.2. Perceived Discrimination and Context of Reception

Perceived discrimination and negative perceived context of reception are additional cultural variables associated with health outcomes. Discrimination includes others’ actions that cause one to feel unwanted, stereotyped, or demeaned (Lee, 2005). Perceived discrimination may have long-term health consequences for Hispanics, including hypertension, depression, diabetes, cardiovascular illness, and other health problems (Finch and Vega, 2003; Todorova et al., 2010). Context of reception refers to immigrants’ opportunities in the U.S. A negative context of reception may be discouraging to immigrants (Portes and Rumbaut, 2006), especially if the receiving society systematically denies immigrants opportunities available to members of the dominant group (Leong, 2008; Steiner, 2009). Among Hispanics, Mexicans and Puerto Ricans are often marginalized, whereas Cubans generally fare well, especially in Miami (Stepick and Stepick, 2002). Unlike Mexicans, many of whom are undocumented and seek “under-the-table” positions (Henderson, 2011), and Puerto Ricans, many of whom migrate to the Northeast and South to escape poverty (Acosta-Belen and Santiago, 2006), many Cubans arrive in the U.S. as political refugees – though some do immigrate to escape poverty. The original cohort of Cubans settled in Miami and claimed positions of political and economic power (Stepick et al., 2003). Although Miami is also

home to many Central and South Americans, Cubans remain the dominant Hispanic group. Thus, the context of reception in Miami differs from that in other parts of the U.S. Multi-city comparisons between Miami and other U.S. cities – including Cubans as well as other Hispanic groups – may be useful in examining the effects of context of reception (e.g., Schwartz, Unger, et al., 2012).

One such city is Los Angeles, which is home to more than 2 million individuals of Mexican ancestry (Hayes-Bautista, 2004). Some Mexican-descent individuals in Los Angeles can trace their lineage to the Mexican territories that were annexed by the United States after the Mexican-American War, whereas others are recent or second-generation immigrants. Although the Los Angeles area already ranked second in Hispanic population size in 2000, this population grew by more than 20% between 2000 and 2010 (Ennis et al., 2011), due in part to immigration (Walters and Trevelyan, 2011). Some Mexican Americans are gaining power in Los Angeles, though the majority still live at or near the poverty level.

Miami and Los Angeles, as two very different receiving communities for Hispanic immigrants, served as contexts for the present study. Multisite studies of acculturation and health outcomes are important because acculturation may take different forms depending on the context to which individuals are acculturating (Alba and Nee, 2006). We examined multiple domains of acculturation (heritage and U.S. practices, values, and identifications) in relation to substance use, sexual activity, and unprotected sex in recently arrived Hispanic immigrant adolescents in these two cities. Given the importance of discrimination and context of reception for immigrant and minority health (Krieger, 2012), we also examined these cultural processes as predictors of substance use and sexual outcomes. Finally, in light of the role of family dynamics in the effects of cultural processes on health outcomes (Smokowski et al., 2008; Unger et al., 2009), we posited parent-adolescent communication as a mediating mechanism.

### 1.3. The Present Study

In the present longitudinal study, we sampled recent-immigrant parent-adolescent dyads from Miami and Los Angeles. Each parent-adolescent dyad completed measures of Hispanic and American cultural practices, values, and identifications; perceived discrimination; perceived negative context of reception; and parent-adolescent communication. We used parent-adolescent communication because it captures the affective valence of family interactions (Guilamo-Ramos et al., 2006). Adolescents completed measures of smoking, alcohol use, and sexual behavior and risk taking.

We hypothesized that both adolescent and parent reports of communication would negatively mediate the effects of acculturation gaps on adolescent-reported substance use, sexual activity, and unprotected sex (Figure 1). Specifically, Following Telzer (2011), we anticipated that (1) heritage-cultural gaps – those involving Hispanic practices, collectivist values, and ethnic identity – would be most strongly and negatively linked with parent-adolescent communication; and (2) adolescent and parent reports of communication would negatively predict substance use, sexual activity, and sexual risk taking. Because adolescent and parent reports of family processes tend to be only modestly intercorrelated (Schwartz et al., 2005), we included both adolescent and parent reports of communication as mediators. We analyzed data separately for the Miami and Los Angeles samples, because these Hispanic subpopulations differ in terms of social position within their receiving community (i.e., positions of power in Miami versus marginalized positions in Los Angeles; Hayes-Bautista, 2004; Stepick and Stepick, 2002). Indeed, as reported in Schwartz et al. (2012), in our sample, Los Angeles parents reported a significantly more negative context of reception – as well as lower levels of education – compared to Miami parents.

## 2. Method

### 2.1. Sample

Participants were 302 parent-adolescent dyads from Miami ( $N=152$ ) and Los Angeles ( $N=150$ ). Each adolescent participated with a primary parent/caregiver. Although not all of the caregivers were the adolescents' biological parents, we use the term "parent" for simplicity. Participating parents were mothers (70%), fathers (25%), stepparents (3%), and grandparents/other relatives (2%). These data represent the first two assessment timepoints. Miami families were primarily Cuban (61%); Los Angeles families were primarily Mexican (70%). Adolescents were in or entering 9<sup>th</sup> grade (mean age=14.51 years,  $SD=0.88$ , range 14–17; 53% boys). Parents' mean age was 41.09 years ( $SD=7.13$ , range 22–64); 77% were married or cohabiting with a partner. Miami families were more recent immigrants (Mdn = 1 year in the U.S.), and Miami parents were more likely (69.8%) to have graduated high school, compared to Los Angeles families (Mdn = 3 years in the U.S. and 40.0% high school graduates). Table 1 provides significant demographic differences between the Miami and Los Angeles samples.

### 2.2. Procedures

**2.2.1. School Selection and Participant Recruitment**—Families were recruited from randomly selected schools in Miami-Dade and Los Angeles Counties. Because many Hispanic recent immigrants live in heavily Hispanic areas (Kasinitz et al., 2008; Stepick et al., 2003), we selected schools that were 75% Hispanic (10 schools in Miami and 13 in Los Angeles). The study was approved by the IRBs at the University of Miami and the University of Southern California, and by the participating school districts. We recruited students from English for Speakers of Other Languages (ESOL) classes and from the overall student body. Interested students provided their parent/guardian's phone numbers.

Study staff contacted parents to screen them for eligibility: adolescent lived in the US 5 years, adolescent in or entering 9<sup>th</sup> grade, and family planned to remain in South Florida or Southern California during the four years of the study. Families who met these inclusion criteria were consented and scheduled for evening or weekend assessment at convenient locations. Of the 632 families who provided phone numbers, 197 were unreachable (incorrect or disconnected numbers). Of the remaining 435 families, 302 (69%) participated. This participation rate does not include families whom we attempted to contact but were unable to reach, because we do not know how many of them would have been eligible to participate. Time 2 assessments occurred 6–8 months following the baseline assessments. Of the original sample of 302 families, 278 were reassessed. Although families were recruited from schools, we initiated follow-up contacts directly with parents. We did this so that adolescents who dropped out of school, or who switched schools, could still be retained in the sample.

**2.2.2. Assessment Procedures**—At baseline, due to closer proximity of families' homes to the research center and schools in Miami compared to Los Angeles, all Miami families were assessed at the research center (66%) or at their adolescent's school (34%). Most Los Angeles families were assessed in their homes (46%) or convenient community locations (36%). At Time 2, the number of home and community assessments increased at both sites, to 27% in Miami and 91% in Los Angeles. Each parent received \$40 at baseline and \$45 at Time 2. Adolescents received movie tickets at each timepoint. Before the baseline assessment, parents provided informed consent for themselves and their adolescents, and adolescents provided informed assent, in separate rooms. Assessments were completed on laptop computers (for adolescents) or on touch-screen tablet PCs (for parents). An audio computer-assisted interviewing (A-CASI) system (Turner et al., 1998; Cooley et

al., 2003) was used to administer surveys. Most parents (98%) and adolescents (84%) completed their baseline assessments in Spanish; 13% of adolescents (but no parents) switched languages at Time 2.

### 2.3. Measures – Predictors at Baseline

**2.3.1 Acculturation**—Hispanic and American *cultural practices* were measured using the Bicultural Involvement Questionnaire (Szapocznik et al., 1980), which includes 24 items, 12 assessing American practices and 12 assessing Hispanic practices. Cronbach's alphas for adolescents and parents, respectively, were .91 and .91 for American practices and .89 and .86 for Hispanic practices. Sample items include "I speak English at home" and "I enjoy Hispanic-oriented places."

Cultural values were assessed using a 16-item measure of individualism and collectivism (Triandis, 1995; Triandis and Gelfand, 1998). Sample items include "I'd rather depend on myself than on others" (individualism); and "Family members should stick together, no matter what sacrifices are required" (collectivism). Items are rated on a five-point Likert Scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Alpha coefficients for adolescents and parents, respectively, were: individualism, .73 and .74; and collectivism, .79 and .70.

Hispanic/ethnic and American identifications were assessed using parallel versions of the Multi-Group Ethnic Identity Measure (Roberts et al., 1999). In the American-identity version, we used "the United States" instead of "my ethnic group". Sample items include "I am proud to be a member of my ethnic group." Cronbach's alphas for adolescents and parents, respectively, were .88 and .88 for American identity and .91 and .89 for ethnic identity.

**2.3.2—Perceived discrimination** was assessed with seven items (Phinney et al., 1998) tapping into perceptions of unfair treatment based on ethnicity (e.g., "How often do teachers or employers treat you unfairly or negatively because of your ethnic background?"). The 5-point Likert scale ranges from 0 (*Not at all*) to 4 (*Almost always*). Cronbach's alphas were .89 for adolescents and .87 for parents.

**2.3.3—Perceived Negative Context of Reception** was assessed using a 6-item scale (Schwartz et al. 2012). Items assess the extent to which the opportunity structure (e.g., employment or grades) do not favor one's ethnic group. A sample item is "People from my country are not welcome here." Cronbach's alphas were .83 for adolescents and .88 for parents.

**2.3.4—Parent-adolescent communication** was assessed using the Parent-Adolescent Communication Scale (Barnes and Olson, 1982). The adolescent and parent versions each contain 20 items ( $\alpha=.94$  for adolescents and .85 for parents) measuring listening and trust. Adolescents were asked to report on their relationship with the parent figure in the study with them.

### 2.4. Measures – Outcomes at Time 2

**2.4.1—Cigarette, Alcohol, and Illicit Drug Use** was assessed using an adaptation of the Monitoring the Future survey (Johnston et al., 2011). We asked about frequency of cigarette use, alcohol use, heavy drinking (binge drinking and largest number of drinks consumed in a day), drunkenness, and illicit drug use in the previous 90 days. Because illicit drug use was reported only by 8 adolescents at Time 2, we did not analyze this outcome.

**2.4.2 Sexual Risk Taking**—Using items from the Sexual Behavior Instrument (Jemmott et al., 1998), participants self-reported how many times in the previous 90 days they had engaged in oral, vaginal, and anal sex; unprotected oral, anal, or vaginal sex; and number of sexual partners. Because the mean age of the sample was 14.86 years at Time 2, sexual activity at this age can be considered precocious and risky (Dillon et al., 2010).

## 2.5. Analytic Plan

The analytic plan included three steps. First, we reported descriptive statistics for substance use and sexual behavior/risk taking. Second, we created parent-adolescent difference scores for each acculturation variable and modeled these difference scores, along with perceived discrimination and negative context of reception, as predictors of baseline parent-adolescent communication – which was then modeled as a predictor of substance use and sexual behavior/risks. Because we had observed measures for each of the acculturation dimensions, difference scores for each American acculturation dimension were created by subtracting the parent's score from the adolescent's score, and difference scores for each Hispanic dimension were created by subtracting the adolescent's score from the parent's score (Thomas and Zumbo, 2012). Therefore, the gap score would be positive (i.e., parents more highly endorsing Hispanic culture, and adolescents more highly endorsing American culture) for most families. Third, using structural equation modeling and mediation tests (MacKinnon, 2008), we examined the extent to which parent-adolescent communication mediated the effects of the differential acculturation variables and of perceived discrimination and context of reception on the outcomes. All of the predictors and outcomes were included in one structural equation model to avoid inflated Type I error. Each step was conducted separately for the Miami and Los Angeles sub-samples, because of important differences between these two receiving contexts (Rumbaut and Portes 2001; Schwartz et al., 2012). For all analyses other than descriptive statistics, the sandwich estimator (Kauermann and Carroll, 2001) was used to adjust standard errors for the effects of multilevel nesting (families within schools).

Number of occasions of alcohol use, largest number of drinks consumed in a single day, number of binge-drinking days, and occasions of drunkenness were entered into the model as count variables. Cigarette smoking was dichotomized because only 15 adolescents (6%) reported smoking in the previous 90 days.

## 3. Results

### 3.1 Descriptive Statistics

Table 2 displays baseline descriptive statistics for predictor variables. Miami adolescents (primarily of Cuban origin) scored higher than their Los Angeles (primarily of Mexican origin) counterparts on Hispanic practices, collectivist and individualist values, and ethnic and American identity. For parents, collectivist values and American identity were higher in Miami than Los Angeles.

Table 3 presents frequencies of outcome variables by site. Alcohol was the most frequently used substance at Time 2 (13.0% of Miami adolescents and 8.3% of Los Angeles adolescents reported drinking alcohol in the 90 days prior to the Time 2 assessment). By Time 2, 32% of Miami adolescents had engaged in vaginal, oral, or anal sex at least once, compared to 13% of Los Angeles adolescents. Nineteen percent of Miami adolescents, compared to 6% of Los Angeles adolescents, had been sexually active in the 90 days prior to Time 2. Follow-up analyses indicated that, in Miami, Cubans were more likely (37%) to report having initiated sex compared to adolescents from other countries (24%); whereas in

Los Angeles, Mexicans were less likely (10%) to report having initiated sex compared to adolescents from other countries (20%).

### 3.2. Hypothesis Tests: Differential Acculturation Predicting Health Behaviors, as Mediated by Parent-Adolescent Communication

**3.2.1 Estimating the Structural Equation Model**—The structural equation model (Figure 1) included baseline acculturation gaps and parent-adolescent communication, and Time 2 health outcomes. For each city, we estimated (a) effects of acculturation discrepancies on parent-adolescent communication at baseline; (b) effects of baseline parent-adolescent communication on Time 2 adolescent outcomes; and (c) mediated effects of acculturation discrepancies on adolescent outcomes through parent-adolescent communication. Attempts to add direct effects of acculturation discrepancies on adolescent outcomes to model (c) created multicollinearity (i.e., unusually large standard errors prevented sizeable regression coefficients from reaching statistical significance; Tabachnick and Fidell, 2007). We therefore examined only indirect effects of acculturation discrepancies on adolescent outcomes.

Standard structural equation modeling fit indices (e.g.,  $\chi^2$ , CFI, RMSEA) are not available for models with count variables (Muthén and Muthén, 2010). The results of the structural equation analyses are described below and in Figure 2<sup>1</sup>.

#### 3.2.2 Differential Acculturation Predicting Parent-Adolescent Communication

—Table 4 presents associations of differential acculturation variables with adolescent and parent reports of communication. In Miami, for both parents and adolescents, differential collectivism was significantly related to adolescent-reported communication (negatively for adolescents and positively for parents); and at both sites, parents' perceptions of negative context of reception were negatively related to their reports of communication with their adolescents. For adolescent reports, negative context of reception was a negative predictor of parent-adolescent communication in Miami, but perceived discrimination was a negative predictor of parent-adolescent communication in Los Angeles.

#### 3.2.3 Parent-Adolescent Communication Predicting Outcomes

—Table 5 presents patterns of longitudinal associations between parent-adolescent communication and outcomes. In Miami, adolescent-reported communication was protective against cigarette use, occasions of drunkenness, number of sexual partners, and number of oral sex partners. The effect for binge drinking days approached significance. In Los Angeles, adolescent-reported communication did not reach significance as a predictor of any of the outcomes, although the protective effect for cigarette smoking approached significance.

In Miami, parents' reports of communication with their adolescents were *positively* predictive of number of binge drinking days, occasions of drunkenness, number of sexual partners, number of oral sex partners, inconsistent condom use, and unprotected oral sex. In Los Angeles, the only significant finding for parent-reported communication was a negative effect on alcohol use occasions (the effect for binge drinking days approached significance).

**3.2.4 Mediation Tests**—We tested whether parent-adolescent communication mediated the effects of differential acculturation on health outcomes, using the asymmetric distribution of products test (MacKinnon, 2008) and PRODCLIN software (MacKinnon et al., 2007). All but one of the significant mediated effects emerged in Miami. Four acculturation gap variables – differential American practices, differential ethnic identity, and

<sup>1</sup>Supplementary material can be found by accessing the online version of this paper at <http://dx.doi.org> and by entering doi:...



both adolescent and parent reports of negative context of reception – each indirectly predicted drunkenness, number of sexual partners, and number of oral sex partners (see Table 6 and Figure 2). In addition, cigarette use was indirectly predicted by differential American practices and by adolescent-reported negative context of reception; binge drinking days were predicted by differential ethnic identity and by parent-reported negative context of reception; and number of alcohol use occasions was predicted by parent-reported negative context of reception (in Los Angeles).

#### 4. Discussion

This study examined the differential acculturation hypothesis (Szapocznik and Kurtines, 1980, 1993) – that parent-adolescent acculturation gaps negatively influence family functioning (operationalized as parent-adolescent communication), which in turn predisposes Hispanic adolescents toward problematic behavior. Perceived discrimination and negative context of reception—two stressors confronting immigrant and minority individuals (e.g., Lee, 2005; Portes and Rumbaut, 2006) were also examined as predictors of adolescent outcomes through parent-adolescent communication.

This study represents a clear advance over past research. We included gaps in Hispanic and American practices, values, and identifications. Differential American practices, which was explicitly referenced by Szapocznik and Kurtines (1980), indirectly predicted cigarette- and alcohol-related outcomes through adolescent reports of communication with parents, but indirectly predicted sexual risk outcomes through parent reports of communication with adolescents. This pattern suggests that, at least in recently immigrated Hispanic adolescents in Miami, the effects of differential rates of Americanization on adolescent sexual risks may be more related to parents' communication styles than to adolescents' own perceptions of their relationships with their parents.

Gaps in ethnic identity predicted adolescent sexual outcomes through parent-reported communication in Miami, but this effect was in an unexpected direction. Differential ethnic identity *positively* predicted parent-reported communication, which in turn *positively* predicted adolescent sexual risk behaviors. Despite their apparent advantages, Miami adolescents were more likely (32% versus 13%) to have initiated sex by Time 2. There are many reasons that could account for these differences, including different peer and parent norms across sites, different nationalities, and potential differences in religiosity. Mexican families may be especially family-oriented and high on parental control (Halgunseth et al., 2006). Because we did not collect data on these variables (with the exception of nationality), it is not possible for us to support one interpretation over another. Perhaps the more positive context of reception in Miami permitted adolescents in our Miami sample to more quickly affiliate with U.S.-born peers. Specific correlates of sexual activity (e.g., early entry into romantic relationships) were not measured in the current study but may have accounted for the site differences that we found.

Interestingly, perceived context of reception, and not perceived discrimination, emerged as a negative predictor of parent-adolescent communication and of cigarette, alcohol, and sexual risk outcomes. Although prior studies (Kulis et al., 2009; Okamoto et al., 2009) have found discrimination to predict substance use in Hispanic adolescents, these studies did not measure context of reception. It is possible that more systematic hostility and lack of support in the receiving community is more harmful compared to specific discriminatory acts (see Krieger, 2012, for further discussion).

Another important feature of our study is the multisite design. Miami and Los Angeles represent different receiving contexts; the immigrant groups represented are quite different (primarily Cuban versus primarily Mexican); and the social position of Hispanics is

divergent between cities (powerful versus marginalized). Los Angeles parents reported a significantly more negative context of reception compared to Miami parents (Schwartz et al., 2012). However, these adolescents, who attend largely Hispanic schools, might be shielded from the negative context of reception. Moreover, research suggests that parenting practices may partially protect adolescents from the effects of negative social-contextual processes (e.g., Gonzales et al., 2011).

The fact that our findings differed, especially in terms of effects of parent-adolescent communication on adolescent outcomes, between the two populations/receiving contexts reinforces the contention that Hispanics are *not* a monolithic group and that their countries of origin, as well as the characteristics of the specific communities where they settle, may affect their health. Miami Hispanics, especially Cubans, are somewhat protected from discrimination and negative contexts of reception (Stepick and Stepick, 2002). Mexicans and Central Americans in Los Angeles do not enjoy such an advantage. Post-hoc tests in the Miami sample indicate that non-Cuban Hispanic parents reported a significantly more negative context of reception than did Cuban parents,  $F(1, 149)=19.36, p<.001, \eta^2=.12$ . Nonetheless, negative perceived context of reception emerged as a significant negative predictor of parent-reported communication with adolescents at both sites, and of adolescent-reported communication with parents in Miami.

#### 4.1 Limitations

Although we intended to recruit a random sample of recently immigrated adolescents from a randomly selected set of schools in both cities, refusal rates differed across cities. More families were unreachable, or declined to participate, in Los Angeles than Miami. The fact that Cubans become legal U.S. residents upon arrival may explain this difference. Anecdotal evidence suggests that many potentially undocumented families, including some Central American families in Miami, were suspicious of our data collection team and feared deportation. Stress related to immigration and to undocumented status may have led our Los Angeles families to more closely monitor their adolescents' activities. Further, the difference in time in the U.S. between cities may suggest that recently immigrated families in Los Angeles were least likely to be successfully engaged into the study.

Substance use and sexual behavior were assessed via self-report. Although self-reports and objective indicators of substance use converge well in Hispanic adolescents (Dillon et al., 2005), objective data on substance use and partner reports of sexual activity would likely have provided greater accuracy. Nonetheless, A-CASI increases honest responding regarding sensitive or illegal behavior (Cooley et al., 2003).

The present results provide some support for the differential acculturation hypothesis using an expanded model of cultural adaptation. In Miami, the most predictive gaps were in American practices and ethnic identity. In Los Angeles, however, few predictive effects emerged. Our findings indicate that the effects of acculturative processes on health outcomes vary by local context of settlement. Therefore, it is important to conduct research on acculturation and Hispanic health in multiple receiving contexts.

#### 4.2 Implications for Intervention

The present results may have important implications for intervention. Given the effects of differential acculturation on parent-adolescent communication, family-based substance use and HIV prevention programs for Hispanics should incorporate acculturation-based modules to reduce cultural gaps between parents and adolescents. Such programs might involve dyadic or group interactions between or among parents and adolescents as a way of increasing parents' comfort with American culture and increasing adolescents' comfort with

their cultures of origin (e.g., Smokowski and Bacallao, 2011; Szapocznik et al., 1989). Such modules may help to facilitate adaptive parent-adolescent communication. At the policy level, school programs to encourage Hispanic youth both to retain their culture of origin and to acquire American culture could address these challenges at the population level.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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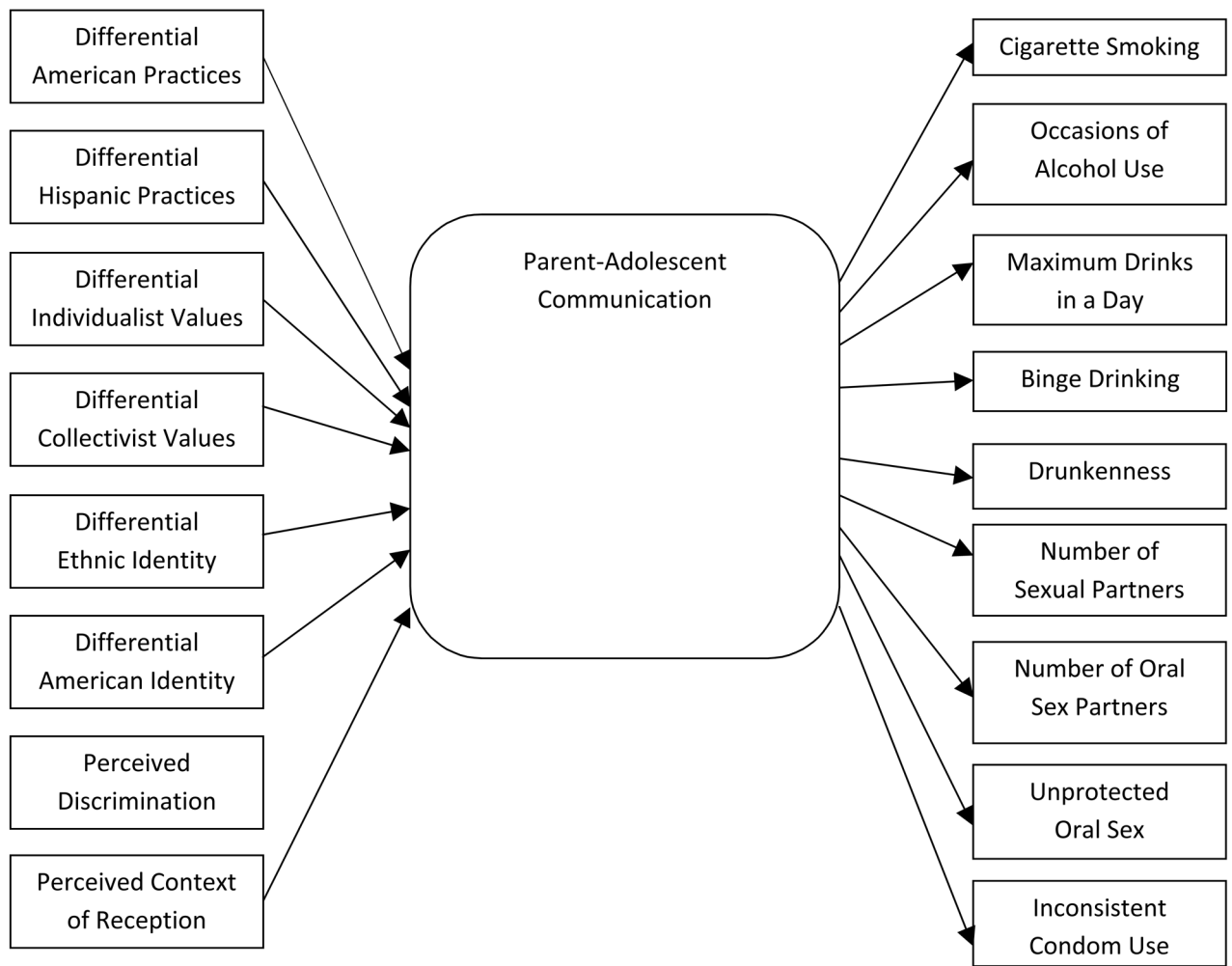
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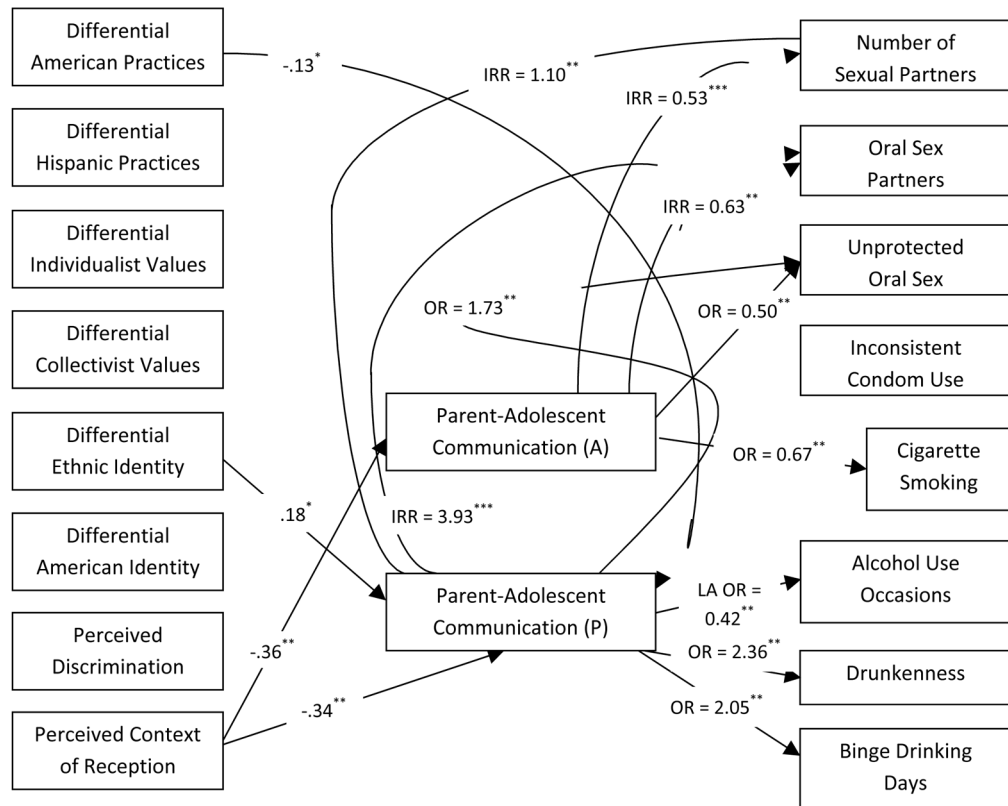
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**Figure 1.**  
Theoretical Model Guiding the Present Study





Note: Path coefficients are from the Miami sample unless otherwise noted.

$^{\S}p < .10$      $^*p < .05$      $^{**}p < .01$      $^{***}p < .001$

**Figure 2.**  
Study Results

**Table 1**

## Demographic Differences between the Miami and Los Angeles Samples

Variable	Miami	Los Angeles	Difference
Primary Countries of Origin	Cuba (61%), Dominican Republic (8%), Honduras (6%), Colombia (6%), Other (19%)	Mexico (70%), El Salvador (9%), Guatemala (6%), Other (15%)	N/A
Percentage of Families Arriving Together	83%	67%	$\chi^2(1) = 9.76^{**}$ , $\phi = .19$
Duration of Separation (years) <sup>a</sup>	2.72 (1.65)	2.28 (1.67)	$t(66) = 1.06$ , $d = 0.28$
Years in the US at Baseline	<i>Mdn</i> = 1 ( <i>IQR</i> = 0–3)	<i>Mdn</i> = 3 ( <i>IQR</i> = 1–4)	Wilcoxon $Z = 6.39^{***}$
Annual Household Income	\$27,028 ( <i>SD</i> \$13,454)	\$34,521 ( <i>SD</i> \$5,398)	$t(178) = 6.09^{***}$ , $d = 0.73$
Less than 9 Years of Education	13.8%	40.0%	$\chi^2(1) = 26.37^{***}$ , $\phi = .30$
High School Graduate or Higher	69.8%	40.6%	$\chi^2(1) = 26.37^{***}$ , $\phi = .30$

<sup>a</sup>Includes only families who reported an immigration-related separation.

\*  
 $p < .05$

\*\*  
 $p < .01$

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

**Table 2**

## Descriptive Statistics for Predictor Variables at Baseline

Variable	Miami <i>M</i> ( <i>SD</i> )	Los Angeles <i>M</i> ( <i>SD</i> )	<i>t</i> -value
<i>Acculturation</i>			
American Practices (A)	46.43 (16.23)	48.82 (16.14)	1.29
Hispanic Practices (A)	59.48 (13.83)	54.15 (15.77)	3.12**
Individualist Values (A)	20.78 (4.77)	18.60 (4.81)	3.96***
Collectivist Values (A)	25.68 (3.85)	23.23 (3.93)	5.48**
American Identity (A)	28.57 (8.05)	25.48 (8.38)	3.26**
Ethnic Identity (A)	33.22 (7.85)	30.79 (7.82)	2.70**
American Practices (P)	31.55 (13.37)	30.24 (15.31)	0.79
Hispanic Practices (P)	59.64(12.25)	57.08 (13.63)	1.71
Individualist Values (P)	21.06 (4.71)	20.35 (4.47)	1.34
Collectivist Values (P)	24.88 (3.04)	23.53 (3.35)	3.59***
American Identity (P)	30.99 (6.20)	26.70 (7.41)	5.41***
Ethnic Identity (P)	34.08 (5.14)	33.81 (6.15)	0.41
<i>Receiving Context</i>			
Perceived Discrimination (A)	5.54 (5.68)	5.35 (5.33)	0.30
Perceived Negative Context of Reception (A)	8.55 (4.96)	8.91 (4.52)	0.67
Perceived Discrimination (P)	6.07 (5.24)	7.66 (5.00)	2.70**
Perceived Negative Context of Reception (P)	9.00 (4.22)	12.39 (4.78)	6.51***
<i>Parent-Adolescent Communication</i>			
Parent-Adolescent Communication (A)	52.38 (12.94)	48.57 (12.61)	2.50**
Parent-Adolescent Communication (P)	56.60 (9.17)	53.97 (9.31)	2.48*

Note: A = Adolescent; P = Parent.

\*  $p < .05$

\*\*  $p < .01$

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

**Table 3**

Descriptive Statistics for Substance Use and Sexual Behaviors at Time 2

Behavior	Miami N (%)	Los Angeles N (%)	$\chi^2$
<i>Substance Use (Last 90 Days)</i>			
Cigarette Smoking	9 (6.2%)	7 (5.3%)	0.10
Any Alcohol Use	19 (13.0%)	11 (8.3%)	1.58
5+ Drinks in a Day	9 (6.2%)	4 (3.0%)	1.53
Binge Drinking At Least Once	15 (10.3%)	10 (7.6%)	0.62
Drunk At Least Once	9 (6.2%)	8 (6.1%)	0.001
<i>Sexual Behavior (Last 90 Days)</i>			
Initiated sex (lifetime)	46 (31.9%)	17 (12.9%)	14.21 ***
Any oral/anal/vaginal sex	28 (19.2%)	8 (6.1%)	10.58 **
Unprotected vaginal/anal sex	13 (8.9%)	3 (2.3%)	5.62 *
Unprotected oral sex	14 (9.6%)	4 (3.0%)	4.93 <sup>§</sup>

<sup>§</sup>  
 $p < .10$

\*  
 $p < .05$

\*\*  
 $p < .01$

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

**Table 4**

Differential Acculturation, Perceived Discrimination, and Perceived Negative Context of Reception as Predictors of Parent-Adolescent Communication at Baseline

Predictor	Parent-Adolescent Communication			
	Adolescent Report		Parent Report	
	Miami	Los Angeles	Miami	Los Angeles
Differential American Practices	-.13*	-.01	.06	-.09
Differential Hispanic Practices	-.04	.13 <sup>§</sup>	-.04	.08
Differential Individualist Values	-.06	-.14*	-.06	-.15
Differential Collectivist Values	-.13 <sup>§</sup>	-.07	.15 <sup>§</sup>	.01
Differential American Identity	.21 <sup>§</sup>	-.09	.12	.08
Differential Ethnic Identity	.04	-.21*	.18***	.03
Perceived Discrimination	-.02	-.21*	.00	-.06
Perceived Negative Context of Reception	-.36***	-.07	-.34***	-.27**

<sup>§</sup>  $p < .10$

\*  $p < .05$

\*\*  $p < .01$

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

Table 5

## Effects of Baseline Parent-Adolescent Communication on Time 2 Health Outcomes

Health Outcome	Parent-Adolescent Communication			
	Adolescent Report		Parent Report	
	Miami	Los Angeles	Miami	Los Angeles
Cigarette Use (Yes/No)	0.67 <sup>**</sup> (0.50–0.86)	0.39 <sup>§</sup> (0.15–1.05)	0.51 (0.17–1.50)	0.72 (0.43–1.23)
Alcohol Use Occasions (Count)	0.86 (0.59–1.25)	1.31 (0.94–1.82)	1.00 (0.81–1.22)	0.42 <sup>**</sup> (0.25–0.73)
Maximum Drinks in a Day (Count)	0.83 (0.52–1.35)	0.73 (0.50–1.07)	0.93 (0.72–1.20)	0.95 (0.49–1.82)
Binge Drinking Days (Count)	0.55 <sup>§</sup> (0.29–1.04)	1.00 (0.68–1.46)	2.05 <sup>***</sup> (1.74–2.41)	0.47 <sup>§</sup> (0.22–1.02)
Drunkenness Occasions (Count)	0.32 <sup>**</sup> (0.12–0.85)	0.81 (0.34–1.97)	2.36 <sup>***</sup> (2.11–2.63)	1.37 (0.33–5.70)
Number of Sexual Partners (Count)	0.53 <sup>***</sup> (0.36–0.77)	0.96 (0.50–1.86)	1.10 <sup>**</sup> (1.03–1.17)	0.74 (0.48–1.14)
Number of Oral Sex Partners (Count)	0.63 <sup>**</sup> (0.48–0.83)	1.07 (0.44–2.58)	3.93 <sup>***</sup> (2.68–5.77)	0.74 (0.49–1.13)
Inconsistent Condom Use (Yes/No)	0.89 (0.37–2.00)	0.72 (0.21–2.47)	1.26 <sup>***</sup> (1.23–1.30)	0.96 (0.57–1.64)
Unprotected Oral Sex (Yes/No)	0.73 (0.31–1.73)	0.85 (0.30–2.48)	1.72 <sup>*</sup> (1.07–2.76)	0.99 (0.65–1.51)

Note: Effects of parent-adolescent communication on adolescent outcomes are reported as odds ratios (*OR*) for dichotomous outcomes and as incidence rate ratios (*IRR*) for count outcomes. The *OR* represents the multiplicative increase in the predicted odds of event occurrence given a 1 *SD* increase in the predictor variable in question. The *IRR* represents the multiplicative increase in the predicted frequency of event occurrence given a 1 *SD* increase in the predictor variable in question.

<sup>§</sup>  $p < .10$

<sup>\*</sup>  $p < .05$

<sup>\*\*</sup>  $p < .01$

<sup>\*\*\*</sup>  $p < .001$

Table 6

## Significant Mediated Effects

Predictor	Mediator	Outcome	Point Estimate	95% CI
<i>Miami</i>				
Differential American Practices	Parent-Adolescent Communication (A)	Cigarette use	1.05	1.01 to 1.12
Differential American Practices	Parent-Adolescent Communication (A)	Drunkenness	1.17	1.01 to 1.48
Differential American Practices	Parent-Adolescent Communication (P)	Number of Sexual Partners	1.08	1.01 to 1.20
Differential American Practices	Parent-Adolescent Communication (P)	Number of Sexual Partners (oral sex)	1.06	1.01 to 1.14
Differential Ethnic Identity	Parent-Adolescent Communication (P)	Binge Drinking	1.14	1.02 to 1.29
Differential Ethnic Identity	Parent-Adolescent Communication (P)	Drunkenness	1.17	1.02 to 1.34
Differential Ethnic Identity	Parent-Adolescent Communication (P)	Number of Sexual Partners	1.18	1.01 to 1.48
Differential Ethnic Identity	Parent-Adolescent Communication (P)	Number of Sexual Partners (oral sex)	1.28	1.03 to 1.64
Perceived Negative Context of Reception (A)	Parent-Adolescent Communication (A)	Cigarette use	1.15	1.04 to 1.29
Perceived Negative Context of Reception (A)	Parent-Adolescent Communication (A)	Drunkenness	1.54	1.09 to 2.36
Perceived Negative Context of Reception (A)	Parent-Adolescent Communication (A)	Number of Sexual Partners	1.24	1.08 to 1.48
Perceived Negative Context of Reception (A)	Parent-Adolescent Communication (A)	Number of Sexual Partners (oral sex)	1.17	1.06 to 1.33
Perceived Negative Context of Reception (P)	Parent-Adolescent Communication (P)	Binge Drinking	0.78	0.69 to 0.87
Perceived Negative Context of Reception (P)	Parent-Adolescent Communication (P)	Drunkenness	0.74	0.65 to 0.84
Perceived Negative Context of Reception (P)	Parent-Adolescent Communication (P)	Unprotected oral sex	0.83	0.68 to 0.98
Perceived Negative Context of Reception (P)	Parent-Adolescent Communication (P)	Number of Sexual Partners	0.73	0.55 to 0.91
Perceived Negative Context of Reception (P)	Parent-Adolescent Communication (P)	Number of Sexual Partners (oral sex)	0.62	0.48 to 0.79
<i>Los Angeles</i>				
Perceived Negative Context of Reception (P)	Parent-Adolescent Communication (P)	Alcohol Use Occasions	1.25	1.06 to 1.56

Note: A = Adolescent; P = Parent