Published in final edited form as:

J Youth Adolesc. 2016 October ; 45(10): 2164–2177. doi:10.1007/s10964-016-0500-8.

A Longitudinal Test of the Parent–Adolescent Family Functioning Discrepancy Hypothesis: A Trend toward Increased HIV Risk Behaviors among Immigrant Hispanic Adolescents

David Cordova, Ph.D.¹, Seth J. Schwartz, Ph.D.², Jennifer B. Unger, Ph.D.³, Lourdes Baezconde-Garbanati, Ph.D., MPH³, Juan A. Villamar, M.S.Ed.⁴, Daniel W. Soto, MPH³, Sabrina E. Des Rosiers, Ph.D.⁵, Tae Kyoung Lee, Ph.D.², Alan Meca, Ph.D.², Miguel Ángel Cano, Ph.D., MPH⁶, Elma I. Lorenzo-Blanco, Ph.D.⁷, Assaf Oshri, Ph.D.⁸, Christopher P. Salas-Wright, Ph.D.⁹, Brandy M. Piña-Watson, Ph.D.¹⁰, and Andrea J. Romero, Ph.D.¹¹

¹University of Michigan

²University of Miami

³University of Southern California

⁴Northwestern University

⁵Barry University

⁶Florida International University

⁷University of South Carolina

⁸University of Georgia

⁹The University of Texas at Austin

¹⁰Texas Tech University

¹¹University of Arizona

Abstract

Corresponding author: David Cordova, Ph.D., cordovad@umich.edu, Phone: 734-763-6201, Fax: 734-763-3372.

Authors' Contributions: DC conceived of the study, participated in its design and coordination, performed statistical analysis, participated in interpretation of the data, and wrote the first draft of the manuscript; SJ participated in conception and design of study, data collection, statistical analysis and interpretation of the data; JU participated in conception and design of study, data collection; LBG participated in conception and design of study, and data collection; JV participated in conception and design of study, and data collection; DS participated in conception and design of study, and data collection; SDR participated in conception and design of study, and data collection; TKL participated in statistical analysis and interpretation of the data; AM participated in statistical analysis and interpretation of the data; MAC participated in conception and design of study and interpretation of the data; ELB participated in conception and design of study, and interpretation of the data; AO participated in statistical analysis and interpretation of the data; CSW participated in conception and design of study, and interpretation of the data; BPW participated in conception and design of study, and interpretation of the data; AR participated in conception and design of study, and interpretation of the data. All authors read, revised and approved the final manuscript.

Conflicts of Interest: The authors report no conflict of interests.

Compliance with Ethical Standards: Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

Parent-adolescent discrepancies in family functioning play an important role in HIV risk behaviors among adolescents, yet longitudinal research with recent immigrant Hispanic families remains limited. This study tested the effects of trajectories of parent–adolescent family functioning discrepancies on HIV risk behaviors among recent-immigrant Hispanic adolescents. Additionally, we examined whether and to what extent trajectories of parent-adolescent family functioning discrepancies vary as a function of gender. We assessed family functioning of 302 Hispanic adolescents (47% female) and their parent (70% female) at six time points over a three-year period and computed latent discrepancy scores between parent and adolescent reports at each timepoint. Additionally, adolescents completed measures of sexual risk behaviors and alcohol use. We conducted a confirmatory factor analysis to determine the feasibility of collapsing parent and adolescent reported family functioning indicators onto a single latent discrepancy variable, tested model invariance over time, and conducted growth mixture modeling (GMM). GMM yielded a three-class solution for discrepancies: *High-Increasing*, *High-Stable*, and *Low-Stable*. Relative to the *Low-Stable* class, parent–adolescent dyads in the *High-Increasing* and *High-Stable* classes were at greater risk for adolescents reporting sexual debut at time 6. Additionally, the *High-Stable* class was at greater risk, relative to the *Low-Stable* class, in terms of adolescent lifetime alcohol use at 30 months post-baseline. Multiple group GMM indicated that trajectories of parent-adolescent family functioning trajectories did not vary by gender. Implications for future research and practice are discussed.

Keywords

HIV; alcohol use; family functioning; discrepancies; adolescents

Introduction

HIV represents a major public health concern among adolescents in the U.S. (CDC, 2015). Adolescence is a developmental period of increased risk for HIV infection, and Hispanic youth disproportionately engage in HIV risk behaviors, including sexual risk and alcohol-related activities (Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2015; Kann et al., 2014), placing them at greater risk for HIV infection (Córdova et al. 2011; Tello, Cervantes, Córdova, & Santos, 2010). *Family functioning*, defined as the combination of parent–adolescent communication, family communication, parent support, parental monitoring of peers, family cohesion, and positive parenting, has been shown to offset risks for Hispanic adolescent HIV risk behaviors (Cano et al., 2016; Córdova et al., 2012). Researchers have also found that parent–adolescent family functioning discrepancies, defined as the gap (in either direction) between parent and adolescent reports of family functioning, are cross-sectionally associated with increased likelihood of Hispanic adolescent HIV risk behaviors (Córdova, Huang, Lally, Estrada, & Prado, 2014).

Because these findings are cross-sectional, however, little is known about developmental changes in parent–adolescent family functioning discrepancies and their effects on HIV risk behaviors among recently immigrated Hispanic adolescents, a population that may experience disruptions in family functioning as a result of immigration (Smokowski, Rose, & Bacallao, 2008). Over the next five decades, it is projected that newly arrived Hispanic

immigrants will account for 25% of U.S population growth (Pew Hispanic Research Center, 2015), underscoring the need for research on this population. Hispanics are also a young population, with approximately 40% under age 20 (Ennis, Ríos-Vargas, & Albert, 2011). Given these various research needs, our goal in the present study was to advance the literature on longitudinal changes in parent-adolescent discrepancies in reports of family functioning, and effects of these discrepancies on HIV risk behaviors, among recently arrived Hispanic adolescents and their parents. Specifically, the purpose of this study was to (1) examine longitudinal invariance in latent family functioning variables for both parents and their adolescents over time, (2) map trajectories of parent-adolescent family functioning discrepancies, and (3) ascertain whether, and to what extent, these trajectories predict HIV risk behaviors at Time 6 (2½ years post-baseline) among recently immigrated Hispanic adolescents. Additionally, we sought to examine whether and to what extent trajectories of parent-adolescent family functioning discrepancies vary as a function of the adolescent's gender.

Prevalence of HIV Risk Behaviors and HIV in Hispanic Adolescents

Hispanic youth disproportionately engage in a number of HIV risk behaviors, including sexual risk and alcohol-related activities. National surveillance data indicate that Hispanic 9th - 12th grade youth (6.4%) are more likely to report sexual debut, as compared to non-Hispanic White 9th - 12th grade adolescents (3.3%; Kann et al. 2014). When compared to Black 9th - 12th grade adolescents (35.3%), Hispanic 9th - 12th grade youth (41.7%) are more likely to report unprotected sex at last sexual intercourse (Kann et al. 2014). Beyond the risks posed by sexual risk behaviors, alcohol use is also prominent among Hispanic youth. Alcohol use can be considered as an HIV risk behavior because many episodes of unprotected sex with strangers or casual acquaintances occur under the influence of alcohol (Córdova et al., 2014). Relative to non-Hispanic White (65.9%) and Black 9th - 12th grade youth (63.4%), Hispanic 9th - 12th youth (72.4%) are more likely to report lifetime alcohol use (Kann et al. 2014). Hispanic 9th - 12th grade youth (37.5%) are also more likely to report current alcohol use when compared to non-Hispanic White (36.3%) and Black 9th - 12th grade adolescents (29.6%; Kann et al. 2014). Given that sexual risk and alcohol-related behaviors increase the risk for HIV infection, it is not surprising that Hispanics are disproportionately affected by HIV. Despite accounting for 17.4% of the total U.S. population (U.S. Census Bureau, 2014), Hispanics accounted for 23% of all HIV infections in 2013 (CDC, 2015).

Antecedents of Hispanic Adolescent HIV Risk Behaviors

Family and developmental factors help to determine which Hispanic youth will engage in HIV risk behaviors. Indeed, scientists have consistently found that higher levels of family functioning, including parent-adolescent communication, family communication, parent support, parental monitoring of peers, family cohesion, and positive parenting, are associated with decreased likelihood of HIV risk behaviors in Hispanic adolescents (Farrelly et al., 2013; Malcolm et al., 2012). For example, Córdova et al. (2011) found that family functioning was inversely related to current alcohol use among Hispanic adolescents. Investigators have also demonstrated the ways in which parent-adolescent discrepancies in family functioning play an important role in adolescent mental health and risk taking

outcomes (Ohannessian, Lerner, Lerner, & von Eye, 2000; Schwartz et al., 2013). For example, discrepancies in parent–adolescent family functioning predict greater likelihood of alcohol use (Ohannessian, 2012), sexual debut, and unprotected sex (Córdova, Huang, et al., 2014) among youth.

Although the literature on family functioning discrepancies is growing and informative, it is generally not developmentally informed. The majority of studies are cross-sectional and do not permit developmental inferences to be drawn – and they do not provide information on how these discrepancies unfold. Within a very limited body of work, researchers have shown that parent–adolescent family functioning discrepancies represent a dynamic process that unfolds over time and are longitudinally linked to adolescent risk behaviors (De Los Reyes et al., 2010; Reynolds et al., 2011). For example, De Los Reyes and colleagues (2010) found that mother–adolescent parental monitoring discrepancies significantly predicted African American adolescent delinquency at two-year follow-up.

The notion that family functioning discrepancies are dynamic may be particularly true among Hispanic families – and especially among families who have recently immigrated. Specifically, Hispanic immigrated parents and adolescents not only may begin to differentially perceive how well the family functions, or not, as part of normal developmental processes, but also may experience acculturation discrepancies (Schwartz et al., in press; Unger, Ritt-Olson, Soto, & Baezconde-Garbanati, 2009). Given that, relative to their parents, adolescents are often provided more opportunities to integrate into U.S. culture (e.g., English speaking peers and American school system), they Americanize at levels that far outpace their parents. These parent-adolescent acculturation discrepancies have been associated with family functioning (Schwartz et al., 2015; Unger et al., 2009). For example, researchers have found that larger parent–adolescent Hispanicism discrepancies, defined as the difference between parents' and adolescents' orientation toward Hispanic cultural practices (e.g., comfort and use of language and traditions), were significantly related to lower adolescent reports of family functioning (Córdova et al., 2014).

Beyond acculturation discrepancies, gender may play an important role in parent-adolescent family functioning discrepancies (Ohannessian et al., 1995). Given that investigators have shown that child rearing practices among Hispanic families can vary by gender (Córdova, Ciofu, & Cervantes, 2014; Marsiglia, Nagoshi, Parsai, & Castro, 2014), it should not be surprising that the effects of parent-adolescent family-functioning discrepancies on Hispanic adolescent HIV risk behaviors vary as a function of gender (Córdova et al., 2014). For example, Córdova and colleagues (2014) found that, relative to males, the influence of family functioning discrepancies on lifetime alcohol use was stronger for females. However, this study was cross-sectional, and therefore only within-time associations between parent-adolescent family functioning discrepancies and Hispanic adolescent HIV risk behaviors can be inferred.

Whereas some investigators have demonstrated that, relative to their parents, youth perceive family functioning more negatively (Ohannessian, 2012), others have found adolescents to have more favorable views of family functioning (Schwartz et al., 2013). The effects of the specific *direction* of the discrepancy on risky behaviors are also not completely clear.

Whereas De Los Reyes et al (2010) found that families where parents reported higher levels of family functioning relative to their child's reports were associated with increased risk for delinquent behaviors, Schwartz et al (2013) found adolescents who perceived family functioning to be more positive than their parents to be at greater risk for unprotected sex.

Although our understanding of the role of family functioning on Hispanic adolescent HIV risk behaviors has advanced significantly over the last decade, several critical gaps remain in the empirical literature. First, researchers assessing family functioning have relied solely on either parent or adolescent reports of family functioning (De Los Reyes, 2011, 2013). Research on adolescent risk behaviors should utilize reports both from parents and from adolescents (Ohannessian, 2012) – and should examine discrepancies between them – which may provide a fuller understanding of family-level antecedents of risk behaviors. Second, although limited research has been conducted to examine the effects of parent-adolescent family functioning discrepancies on adolescent outcomes, even fewer studies have applied the parent–adolescent discrepancy approach to examine adolescent HIV risk behavior outcomes (Córdova, Huang, et al., 2014; Ohannessian, 2012). Third, a substantial proportion of research on family functioning discrepancies has been cross-sectional or short-term longitudinal (e.g., Ohannessian, 2012; Reynolds et al., 2011; Stuart & Jose, 2012). Longer-term longitudinal studies in this area have been extremely rare. Fourth, of the limited studies examining the longitudinal effects of family functioning on HIV risk behaviors, few have used both parent and adolescent reports *and* have used multiple indicators of family functioning (e.g. Schwartz et al., 2013; Smokowski et al., 2014). Fifth, studies that examine parent–adolescent family functioning discrepancies with Hispanic populations are limited (e.g. Córdova, Huang, et al., 2014). To the best of our knowledge, no study to date has tested the effects of discrepancies in adolescents' and parents' perceptions of multiple indicators of family functioning (i.e., family communication, parent–adolescent communication, family cohesion, parental monitoring of peers, parent support and parental involvement) on recent-immigrant Hispanic adolescent HIV risk behaviors over time.

An Ecodevelopmental and Discrepancy Framework to Test the Parent–Adolescent Family Functioning Discrepancy Hypothesis

Two central tenets of ecodevelopmental theory (Szapocznik & Coatsworth, 1999) guide our testing of the parent–adolescent family functioning hypothesis. First, ecodevelopmental theory—a risk and protective factors framework—affirms that the family is the most proximal system to youth development, and therefore may be the most influential in preventing HIV risk behaviors among Hispanic youth (Szapocznik & Coatsworth, 1999). Second, social interactions and developmental processes that unfold over time shape Hispanic adolescent HIV risk behaviors. Thus, youth influence, and are influenced by, the family system over time. Based on these notions, ecodevelopmental theory, including social-interactional and developmental processes, accounts for the trajectories of parent-adolescent family functioning discrepancies and their effects on adolescent HIV risk behaviors in several important ways. Parallel with ecodevelopmental theory, family is the most proximal and influential system and is the focus of the present study (i.e., parent-adolescent family functioning discrepancies). Furthermore, in line with social interaction theory, parent-adolescent family functioning discrepancies do not occur in isolation, but rather through

daily parent-adolescent social interactions whereby both parent and adolescents influence and are influenced by each other. Moreover, given that adolescents, relative to their parents, may begin to differentially perceive how well the family functions, incorporating a developmental framework into understanding parent-adolescent family functioning discrepancies is essential. Taken together, ecodevelopmental theory, including social interaction and developmental aspects, may provide a more systemic understanding of the effects of family functioning discrepancies on Hispanic adolescent HIV risk behaviors over time (De Los Reyes & Kazdin, 2005; Ohannessian, 2012). Ecodevelopmental theory has been strongly supported in studies with Hispanic adolescents and provides a robust framework for the present study.

The Present Study

Given the limitations of existing literature, in the present study we sought to (1) test model invariance of latent parent and adolescent family functioning variables over time, (2) model trajectories of parent-adolescent family functioning discrepancies, and (3) test whether, and to what extent, these trajectories predict HIV risk behaviors among recent-immigrant Hispanic adolescents. Given cross-sectional and short-term longitudinal findings that parent-adolescent family functioning discrepancies are linked with increased likelihood of HIV risk behaviors (Córdova, Huang, et al., 2014; Ohannessian, 2012), we hypothesized that trajectories involving large and increasing parent-adolescent family functioning discrepancies will be linked with increased likelihood of recent-immigrant Hispanic youth engaging in HIV risk behaviors. Additionally, we sought to examine whether, and to what extent, trajectories of parent-adolescent family functioning discrepancies vary as a function of the adolescent's gender.

Method

Data were taken from a longitudinal study on acculturation and health risk behaviors in Hispanic youth residing in Miami-Dade and Los Angeles Counties. The study was approved by the Institutional Review Boards at the University of Miami and the University of Southern California, and by the Research Review Committees at each of the respective participating school districts. Additional study details are reported in Schwartz et al. (2012, 2015).

Participants

Participants were recruited between May and November 2010 from randomly selected public schools comprised of 75% Hispanic youth located in Miami-Dade ($k = 10$) and Los Angeles ($k = 13$) counties. To be eligible for this study, youth had to have (a) arrived in the US within five years of the baseline assessment, and (b) be either entering or finishing the 9th grade. The study sample consisted of 302 Hispanic parent-adolescent dyads. Among adolescents, 53% were boys, and the mean age was 14.51 years at baseline ($SD = 0.88$ years, range 14–17). Among parents, participants were primarily mothers (70%), followed by fathers (24.9%), stepfathers (2%), stepmothers (1.3%), 1% other, and grandmother and grandfather each at 0.3%, respectively. Participants reported mean annual household incomes of \$34,521 ($SD = \$5,398$) in Los Angeles and \$27,028 ($SD = \$13,454$) in Miami.

Relative to families in Los Angeles ($n = 150$; (Median = 3 years, interquartile range = 1–4 years), families in Miami ($n = 152$; Median = 1 year, interquartile range = 0–3 years) reported being in the United States for less time at baseline. Additionally, whereas Los Angeles families were primarily from Mexico (70%), El Salvador (9%), Guatemala (6%), and other Hispanic countries (15%), Miami families were predominantly from Cuba (61%), the Dominican Republic (8%), Nicaragua (7%), Honduras (6%), Colombia (6%), and other Hispanic countries (12%).

Procedures

Parents provided consent, adolescents assent and parental consent for adolescents <18 years of age, respectively, and were assessed six times over a three-year time period, corresponding to baseline and 6, 12, 18, 24, and 36 months post-baseline. Parent–adolescent dyads completed the assessment at the same time, in separate rooms, and in the language of their choice (i.e., English or Spanish) using an audio computer assisted self-interviewing (A-CASI) methodology. Parents received \$40 at baseline, with increments of \$5 at each subsequent time point, and adolescents were compensated for their participation with movie tickets at each time point. We retained 85% of the study sample (256 of 302 families) across the six time points.

Measures

Demographics—Parent–adolescent dyads completed a demographic form in which they provided information with regard to their country of origin, gender, and age.

Family functioning (measured time points 1–6)—We assessed family functioning using parent and adolescent reports of six indicators, including positive parenting, parental involvement, family cohesion, family communication, parental monitoring of peers, and parent–adolescent communication. Cronbach's alphas are provided as a range across time points 1–6.

Positive parenting: Positive parenting (9 items, parent $\alpha = .71-.78$, adolescent $\alpha = .83-.85$) was assessed using the corresponding subscale from the Parenting Practices Scale (Gorman-Smith et al. 1996). The positive parenting subscale measures parenting behaviors characterized by acknowledging and rewarding desirable adolescent behaviors. Sample questions from the parent-report scale includes, “When your child has done something that you like or approve of, do you give him or her a hug, a pat in the back, or a kiss for it?” and for the adolescent, “When you have done something that your parents like or approve of, how often does your mother give you a hug, a pat on the back, or a kiss for it?” The response choices ranged from “0 = Never” to “4 = Always.”

Parental involvement: Parental involvement (21 items, parent $\alpha = .80-.84$, 16 items, adolescent $\alpha = .86-.91$) was assessed using the corresponding subscale from the Parenting Practices Scale (Gorman-Smith et al. 1996). The parental involvement subscale includes a parent question such as, “In the past six months, about how often have you talked with your child about what he/she had actually done during the day?”, and for the adolescent, “How

often did your parent talk with you about what you had actually done during the day?”, with a response range of “0 = Never” to “4 = Always.”

Family cohesion: Family cohesion (6 items, parent $\alpha = .77-.82$, adolescent $\alpha = .76-.86$) was assessed using the corresponding subscale from the Family Relations Scale (Tolan, Gorman-Smith, Huesmann, & Zelli, 1997). A sample statements for both parents and adolescents includes, “Family members feel very close to each other.” Response choices ranged from “1 = not true at all” to “3 = true a lot.”

Family communication: Family communication (3 items, parent $\alpha = .62-.77$, adolescent $\alpha = .67-.78$) was assessed using the corresponding subscale from the Family Relations Scale (Tolan, Gorman-Smith, Huesmann, & Zelli, 1997). A sample statement for both parents and adolescents includes, “My family knows what I mean when I say something.” Response choices ranged from “1 = not true at all” to “3 = true a lot.”

Parental monitoring of peers: Parental monitoring of peers (five items, parent $\alpha = .83-.86$, adolescent $\alpha = .86-.90$) was assessed via the Parent Relationship with Peer Group Scale (Pantin 1996), which asks the extent to which parents supervise youths' friends, activities, and whereabouts. A five-point Likert-type scale, ranging from 1 (*Not at all*) to 5 (*Extremely well (often)*), was used to record responses. A sample parent question is “How often during a typical week do you supervise your child and his or her best friends spending time together?” and for youth, “How often during a typical week do your parents supervise you and your best friends spending time together?”

Parent-adolescent communication: Parent-adolescent communication (20 items, parent report $\alpha = .85-.88$, adolescent report $\alpha = .89-.91$) was assessed using the Parent-Adolescent Communication Scale (Barnes & Olson, 1985). A sample parent question is “I am very satisfied with how my child and I talk together,” and for adolescents, “I am very satisfied with how my mother and I talk together.” Response choices ranged from 1 (*Strongly disagree*) to 5 (*Strongly agree*).

Adolescent HIV risk behaviors (measured at time 6)—Youths' sexual debut was measured by one item that asked, “Have you ever had vaginal, anal, or oral sex?” Unprotected sex was measured by one item that asked, “Have you ever had vaginal or anal sex without using a condom?” Lifetime and current (90 days prior to the assessment) alcohol use were assessed using items from the *Monitoring the Future* survey (Johnston et al., 2015). For the purposes of this study, separate binary variables were created to assess each HIV risk behavior. These variables were coded as 1 if the youth had engaged in the behavior in question, and 0 otherwise.

Analytic Approach

Analyses were conducted using *Mplus* version 7 (Muthén & Muthén, 1998–2012). Missing data were handled using full information maximum likelihood (FIML), which is the default in *Mplus*. According to values suggested by Little (2013), good model fit is represented as

CFI = .95, RMSEA = .05, and SRMR = .06; and adequate fit is represented as CFI = .90, RMSEA = .08, and SRMR = .08.

The analytic approach proceeded in four steps. First, we computed descriptive statistics on the demographic and HIV risk variables, and for the parent and adolescent family functioning scores. We computed factor scores at each time point of family functioning using six indicators (i.e., parent–adolescent communication, family communication, parental monitoring of peers, family cohesion, parent involvement, and positive parenting) for both parent and adolescent. Additionally, using multivariate logistic regression models for both parents and adolescents, we conducted attrition analyses to predict attrition after time point 1. In all of the comparisons across aggregated classes, we included gender, family income, years in the United States, age, and site as covariates for both the parent and adolescent models.

Second, we conducted a longitudinal confirmatory factor analysis (LCFA) to ascertain the feasibility of collapsing six indicators of family functioning into single latent variables for parents and adolescents and sought to establish the extent to which the structure of the latent family functioning variables for parents and adolescents was equivalent over time. We compared three models: (a) configural invariance, which assumes that the same configuration of factors and indicators fits the data across time (with no other equality constraints applied), (b) metric invariance, where each factor loading is constrained equal across time, and (c) scalar invariance, which constrains factor loadings and intercepts of indicators over time (Little, 2013). We compared the configural and metric models, and the metric and scalar models, as nested model comparisons using the CFI (CFI < .010 represents invariance) and RMSEA (RMSEA < .010 represents invariance; Cheung & Rensvold, 2002, Little, 2013). We report the χ^2 index, but do not use this index to evaluate model fit because it tends to be overpowered, producing significant differences in fit even when such differences are small (Meade, Johnson, & Braddy, 2008). Then, we computed family functioning discrepancy scores at each time point from a multilevel modeling approach (Kim, Chen, Wang, Shen, Orozco-Lapray, 2013; Schwartz et al., in press). The discrepancy score for each family functioning indicator at each time point was computed as the latent difference between parent and adolescent scores on that indicator at the time point. This latent difference was computed by random slope models via a dyadic coding system by weighting parent reports .5 and adolescent reports -.5 (Kim et al., 2013; Schwartz et al., in press).

Third, we estimated growth mixture models (GMM) with maximum likelihood estimation to examine linear slopes to specify the number of class trajectories for parent–adolescent family functioning discrepancies (Jung & Wickrama, 2008). The Akaike Information Criteria (AIC), Bayesian Information Criterion (BIC), and sample-adjusted BIC were used to select the best model. Smaller values for all indices indicate a better fitting model (Li, Jaroszewski, & Godzik, 2001; Muthén, 2004). Entropy assesses how well people are classified into classes and ranges from 0 to 1, with > .80 indicating more distinct groups (Acocck, 2008, Muthén, 2004). The Vuong-Lo-Mendell-Rubin (VLMR) test provides a p-value indicating whether model fit is significantly improved by adding one more class (Tolvanen, 2007). To examine whether and the extent to which the classifications of family

functioning trajectories vary as a function of gender, we specified gender (0=Male, 1=Female) as a predictor of the class solution using the pseudoclass method (Wang, Brown, & Bandeen-Roche, 2005). The pseudoclass method randomly allocates individuals into pseudoclasses via a random draw based on the estimated conditional probabilities that the individual comes from each class, then examines the pseudoclass adjusted residuals relative to their null distributions (Wang et al., 2005). We interpreted the paths from gender to class membership as multinomial logistic analyses.

Fourth, we tested whether and to what extent the trajectories of parent–adolescent family functioning discrepancies predicted adolescent HIV risk behaviors (i.e., sexual debut, unprotected sex, lifetime and current alcohol use) at time point 6. We included covariates to account for group differences based on gender, age, years in the US, and site.

Results

Step 1: Descriptive Statistics

Descriptive analyses indicated that, at Time 6, 36.3% (87 out of 240) of youth (mean age = 17.5 years, $SD = 0.88$ years, range 17–20) reported sexual debut (lifetime oral, vaginal, or anal sex), and 51.7% (46 out of 89) reported lifetime unprotected sex (see Table 1). Approximately 25.3% (61 out of 241) reported lifetime alcohol use, and of these adolescents, 45.2% (28 out of 62) reported past-90-day alcohol use at Time 6. Parent and adolescent family functioning scores are reported in Table 2. Relative to adolescents, parents reported higher means on all indicators of family functioning across the six time points (see Table 2).

Multivariate logistic regression models for adolescents indicated no significant differences on demographic variables (i.e., gender, family income, years in the US, age, and site) between participants and non-participants after time point 1. Multivariate logistic regression models for parents suggest that parents who had resided in the US longer ($M = 4.95$ years) were more likely to drop out of the study after time point 1, as compared to parent participants who were retained throughout the study ($M = 3.38$ years).

Step 2: Measurement Model and Invariance Tests of Parent and Adolescent Family Functioning Over Time

Longitudinal Confirmatory Factor Analyses (LCFA) were conducted separately for adolescents and their parents. As shown in Table 3, the configural LCFA provided good model fit for both adolescents [$\chi^2(482) = 721.92$, $p < .001$; CFI = .960; RMSEA = .041; SRMR = .058] and their parents [$\chi^2(482) = 726.02$, $p < .001$; CFI = .958; RMSEA = .041; SRMR = .072] along with acceptable standardized factor loadings for all six family functioning indicators across all six time points (ranging from .51 to .81 for parent reports, and from .57 to .91 for adolescent reports). Building on these configural models, we sought to establish metric invariance, which constrains factor loadings to be equal across time. These constraints did not significantly decrease model fit for either adolescents [$\chi^2(25) = 31.93$, $p = .16$; CFI = .001; RMSEA = .001] or their parents [$\chi^2(25) = 30.94$, $p = .19$; CFI = .001; RMSEA = .001]. Finally, we sought to establish scalar invariance, which constrains

item intercepts (in addition to factor loadings) equal over time. Once again, there was no substantial decrease in model fit for either adolescents [$\chi^2(30) = 85.43, p < .001$; CFI = .001; RMSEA = .001] or their parents [$\chi^2(25) = 30.94, p = .191$; CFI = .001; RMSEA = .001] (see Table 3). We therefore concluded that both the adolescent and parent family functioning constructs were fully invariant across time.

Step 3: Identifying Number of Latent Classes

Growth mixture modeling (GMM) yielded a three-class solution. When compared to a two class solution (BIC = 12004.63, AIC = 11963.82, entropy = .85), the BIC and AIC decreased (BIC = 11694.34, AIC = 11642.40, entropy = .87) in the three class solution, indicating an improvement in model fit. Although some criteria suggested a model fit improvement in the two class solution relative to the three class solution (VLMR $p = .13$), selection of a class solution should not be based solely on fit indices, but also on interpretability and research question (Geiser, 2013; Jung & Wickrama, 2008). When compared to the two-class solution, the three-class solution included a relatively low parent-adolescent family functioning discrepancy class, thereby providing an opportunity to compare low versus high parent-adolescent family functioning classes. Therefore, we retained the three-class model as the most parsimonious model. Class 1, hereafter referred to as *Low-Stable Parent-Adolescent Family Functioning Discrepancy* (intercept = $-.38, p < .76$; slope = $.03, p = .78$), consisted of 51.7% ($n = 156$) of parent-adolescent dyads in the sample. Approximately 22.5% ($n = 68$) of parent-adolescent dyads were in class 2, referred to as *High-Increasing Parent-Adolescent Family Functioning Discrepancy* (intercept = $-7.67, p < .001$; slope = $-.49, p = .008$). Class 3 was composed of 25.8% ($n = 78$) of parent-adolescent dyads, and this class is referred to as *High-Stable Parent-Adolescent Family Functioning Discrepancy* (intercept = $7.38, p < .001$; slope = $.55, p = .07$). Whereas the *High-Stable* class was characterized by relatively higher parent reports of family functioning as compared to adolescents, and remained stable over time, the *High-Increasing* class was characterized by relatively higher adolescent reports of family functioning as compared to parents, and an increase in the discrepancy over time. The *Low-Stable* class was characterized by higher adolescent reports of family functioning as compared to parents, although the discrepancy remained relatively small and stable over time (see Figure 1).

Next, we examined whether and to what extent the classifications of family functioning trajectories vary as a function of gender. Findings indicate that gender did not predict membership in the High-Increasing ($b = .209, p = .516$; reference group = Low-Stable), High-Stable ($b = .564, p = .060$; reference group = Low-Stable), and Low-Stable ($b = .354, p = .324$; reference group = High-Increasing trajectory) trajectories, respectively. Because gender was not related to class membership, gender was not included in subsequent analyses.

Step 4: Latent Classes Predicting Adolescent HIV Risk Behaviors at Time Point 6

As shown in Table 4, the *High-Increasing* and *High-Stable* classes were more likely to report sexual debut as compared to the *Low-Stable* class ($OR = 1.29, p = .01$; and $OR = 1.69, p = .004$, respectively). Further, compared to the *High-Stable* class, the *High-Increasing* class was less likely to report sexual debut ($OR = 0.77, p = .01$). Relative to the *High-Stable* and

Low-Stable classes, the *High-Increasing* class was less likely to report lifetime alcohol use ($OR = 0.44, p = .04$ and $OR = 0.70, p = .03$, respectively). Compared to the *Low-Stable* class, the *High-Stable* class was more likely to report lifetime alcohol use ($OR = 1.61, p = .01$).

Alternate Model Analyses

For our alternate model analyses, we examined whether a quadratic slope term would be needed to accurately represent the change patterns in parent-adolescent family functioning discrepancy trajectories. To accomplish this, we estimated a latent growth curve model with quadratic slopes for parent-adolescent family functioning discrepancy trajectory. Findings indicate that the quadratic function in the growth curve model, which serves as the baseline model of latent class growth modeling, was non-significant (mean = $-.04, p = .29$). Therefore, we retained the linear slope trajectories.

Discussion

Although our understanding of the role of parent-adolescent family functioning discrepancies on adolescent problem behaviors has advanced significantly over the last decade, several critical gaps in the empirical literature exist, including studies that have longitudinal designs (e.g., Ohannessian, 2012; Reynolds et al., 2011; Stuart & Jose, 2012), adolescent HIV risk behavior outcomes (Córdova, Huang, et al., 2014; Ohannessian, 2012), used multiple indicators of family functioning (e.g. Schwartz et al., 2013; Smokowski et al., 2014), and included Hispanic populations (e.g. Córdova, Huang, et al., 2014). The present study is among the first to examine the effects of parent-adolescent family functioning discrepancy trajectories on HIV risk behaviors among recent-immigrant Hispanic adolescents, and to incorporate longitudinal data at six points in time. In general, our findings indicate that greater parent-adolescent family functioning discrepancies – regardless of whose report was higher – predicted greater risk of sexual debut and lifetime alcohol use at Time 6. Findings support the assertion that family functioning discrepancies provide meaningful information with respect to adolescent health outcomes over time.

Modeling developmental changes in family functioning discrepancies advances our understanding of the dynamic nature of how parents and adolescents view how well, or not, the family functions over time. Notably, in our descriptive analyses of parent and adolescent family functioning scores, our findings are consistent with previous studies that indicate that, relative to adolescents, parents perceive more favorable views of family functioning (Ohannessian et al., 1995). Our multilevel modeling approach to developing discrepancy scores (Kim et al., 2013; Schwartz et al., in press) and growth mixture models (Jung & Wickrama, 2008), however, indicated that two classes (i.e., *Low-Stable* and *Low-Increasing*) were characterized by adolescents perceiving more favorable views of family functioning as compared to parents. These findings underscore the potential that advanced methodological approaches may have in identifying subgroups that may not be identified otherwise.

Studies have affirmed that parent-adolescent family functioning discrepancies provide meaningful information on the antecedents of adolescent HIV risk behaviors (Ohannessian, 2012; Reynolds et al., 2011). In fact, investigators should only accept the notion that

discrepancies do not play an essential role on adolescent risk behaviors when such data exist to support this null position (De Los Reyes, 2011). Similar to previous longitudinal research on family functioning discrepancies and adolescent outcomes (De Los Reyes et al., 2010; Ohannessian, 2012; Reynolds et al., 2011), our findings suggest that greater parent–adolescent family functioning discrepancies increase the risk of two prominent HIV risk behaviors—sexual debut and lifetime alcohol use—among recent-immigrant Hispanic adolescents over time. Our hypothesis that the magnitude of the discrepancy would be meaningful in predicting HIV risk behaviors was partially supported. For example, relative to both the *High-Increasing* and *High-Stable* classes, the *Low-Stable* class was less likely to report sexual debut. However, relative to the *High-Increasing* class, which was characterized by adolescents perceiving family functioning as more favorable than their parents, the *High-Stable* class (with parents reporting more favorable family functioning) was at greater risk of sexual debut and lifetime alcohol use despite the slightly lesser discrepancy in family functioning. It is possible that discrepancies where adolescents are less positive about their families than parents may be more detrimental for adolescent HIV risk behaviors. At the same time, given that, in this sample, the prevalence of HIV risk behaviors was relatively low as compared to national surveillance data, future research should examine whether our findings hold true among higher-risk Hispanics.

From a theoretical perspective, our findings advance ecodevelopmental theory (Szapocznik & Coatsworth, 1999) in at least two important ways. First, although ecodevelopmental theory posits that adolescent HIV risk behaviors are shaped by the family system over time, longitudinal studies testing this notion have been fairly scarce. Our findings indicate that reports from both parents and adolescents, and the discrepancies between them, may provide a systemic perspective of how the family perceives itself and the ways in which this perception unfolds over time. Second, the present findings suggest that greater discrepancies predict increased HIV risk behaviors over time. This implies that integrating aspects of family stress theory (in addition to a discrepancy approach) into an ecodevelopmental framework may be helpful (Patterson, 2002). Developmentally, parents and adolescents may begin to differentially perceive the family system, which can increase family stress (Ohannessian, 2012). This family stress process may be more pronounced among Hispanic youth, many of whom also face the challenges associated with parent–adolescent acculturation discrepancies (Schwartz et al., in press). Therefore, as developmental and acculturation discrepancies increase between Hispanic parents and youth, stress on the family becomes greater, and so culturally specific interventions should be considered. It is possible that parent–adolescent acculturation discrepancies contribute to discrepancies in perceptions of family functioning, although this hypothesis remains to be tested empirically.

Specifically, our findings suggest potential areas for the development and refinement of family-based interventions. Indeed, family-based interventions have been shown to be among the most efficacious in preventing and reducing Hispanic adolescent HIV risk behaviors (Córdova et al., 2012; Huang et al., 2014). Although researchers have demonstrated that family functioning represents a primary mechanism through which family-based interventions reduce Hispanic adolescent HIV risk behaviors (Prado et al., 2012, 2013), to the best of our knowledge, empirically guided interventions targeting parent–adolescent family functioning discrepancies are nonexistent. Because parents have

been positioned as the change agents in preventing HIV risk behaviors among Hispanic youth, family-based intervention scientists have, for the most part, focused their efforts on parent-centered approaches aimed at improving family functioning through the parent. Although the overall goal of family-based interventions may still include a focus on improving family functioning, our findings extend the literature and suggest that including modules targeting both the parent and the adolescent aimed at ameliorating parent–adolescent family functioning discrepancies may yield favorable adolescent health outcomes (Córdova, Huang, et al., 2014; De Los Reyes, 2011). Now that the family functioning discrepancy hypothesis has been tested in a longitudinal design, examining the effects of a family-based preventive intervention on family functioning discrepancies represents a next logical step.

The present findings should be interpreted in light of several important limitations. First, the sample was comprised of recent-immigrant Hispanic families from Miami and Los Angeles and is not representative of the recent-immigrant Hispanics in other parts of the US, especially those settling in “new-receiving” cities and states. In Miami, participants were primarily of Cuban-origin, and Los Angeles participants were primarily of Mexican-origin. Therefore, our findings may not be generalizable to all U.S. Hispanic families. Second, the use of self-report measures to assess adolescent HIV risk behaviors is a limitation. It is possible that adolescents may over- or under-report HIV risk behaviors. A third limitation is that the majority of parent reports were from mothers (i.e., 70%). Although this is consistent with research utilizing both parent and adolescent reports (e.g. Ohannessian, 2012), future studies should work to engage more fathers. Relatively few studies on parent-adolescent family functioning discrepancies that have examined both father–adolescent and mother–adolescent differences exist (e.g., Leung & Shek, 2014; Ohannessian et al., 1995) and this seems like an important area for future research.

Conclusion

Our findings advance the state of youth and adolescence science in several important ways. Although investigators have demonstrated the important role that parent-adolescent family functioning discrepancies play in the development of adolescent problem behaviors, longitudinal research with minority populations and HIV risk behaviors are lacking (Córdova et al., 2014; De Los Reyes et al., 2010; Ohannessian, 2012). Our findings provide important contributions to the study of adolescence in general, and specifically to the body of literature focused on parent-adolescent family functioning discrepancies by demonstrating that parent–adolescent family functioning discrepancies are dynamic, and that meaningful changes unfold over time. Furthermore, findings contribute to the state-of-the-science in adolescence and indicate that parent–adolescent family functioning discrepancies predict HIV risk behaviors among recent-immigrant Hispanic adolescents in important ways. A next important step is to apply this basic science to the development or refinement of family-based HIV preventive interventions, which could include modules focused on attenuating discrepancies in how parents and adolescents view how well their family functions. Ultimately, this line of research should be aimed at reducing and eliminating HIV health disparities experienced by the Hispanic population.

Acknowledgments

Funding: This study was funded by the National Institute on Drug Abuse, co-funded by the National Institute on Alcohol Abuse and Alcoholism (Grant DA026594; Seth J. Schwartz, PI; Jennifer B. Unger, Co-PI). Preparation of this manuscript was supported in part by grants from the National Institute of Mental Health (Grant R25 MH067127; Torsten B. Neilands) and National Institute on Minority Health and Health Disparities Loan Repayment Program (Grant L60 MD006269; PI, David Cordova).

Author Affiliations and Research Interests

Dr. David Cordova is Assistant Professor of Social Work at the University of Michigan, Ann Arbor, Michigan. He received his doctorate in Human Development and Family Studies from Michigan State University, Lansing, Michigan. His major research interests include drug abuse, HIV/STI, prevention, community-based participatory research, adolescents, and health disparities.

Dr. Seth J. Schwartz is Associate Professor of Public Health Sciences at the University of Miami Miller School of Medicine, Miami, Florida. He received his doctorate in Psychology from Florida International University, Miami, Florida. His major research interests include identity (broadly defined), immigration, acculturation, and cultural identity, adolescence and emerging adulthood, drug and alcohol use/abuse, delinquent behavior, family functioning/parenting, and well-being/thriving/positive development.

Dr. Jennifer B. Unger is Professor of Preventive Medicine at the University of Southern California Keck School of Medicine, Los Angeles, California. She received her doctorate in Preventive Medicine from the University of Southern California, Los Angeles, California. Her research interests include acculturation, adolescents, substance use, health disparities, psychosocial and cultural predictors of adolescent health-risk and health-protective behaviors.

Dr. Lourdes Baezconde-Garbanati is Associate Professor at the University of Southern California Keck School of Medicine, Los Angeles, California. She received her doctorate in Public Health from the University of California, Los Angeles, California. Her research interests include community-based participatory research, health disparities, and role of culture in health behaviors.

Juan A. Villamar is **Executive Coordinator at the Center for Prevention Implementation Methodology (Ce-PIM) at the** Northwestern University Feinberg School of Medicine. He received his Master's of Science in Education in Mental Health Counselling and Research Methods from the University of Miami, Miami, Florida. His research interests include prevention, behavioral interventions, and health disparities.

Daniel W. Soto is Program Manager at University of Southern California, Los Angeles, California. He received his Master's in Public Health from the University of Southern California, Los Angeles, California. His research interests include community-based participatory research, health disparities, and role of culture in health behaviors.

Dr. Sabrina E. Des Rosiers is Assistant Professor of Psychology at Barry University, Miami, Florida. She received her doctorate in Developmental Psychology from Florida

International University, Miami, Florida. Her research interests include adolescent/youth development, risk and protective factors, acculturation, alcohol expectancies, family processes, underage drinking, substance use, and health disparities.

Dr. Tae Kyoung Lee is Senior Research Associate at the University of Miami in Public Health Sciences, Miami, Florida. He received his doctorate in Human Development and Family Science from the University of Georgia, Athens, Georgia. His major research interests include advanced quantitative statistical methods for the prevention science field and the study of adolescent psychopathology.

Dr. Alan Meca is Postdoctoral Associate in the Department of Public Health Sciences at the University of Miami Miller School of Medicine, Miami, Florida. He received his doctorate in Applied Developmental Psychology from Florida International University, Miami, Florida. His research interests include personal and cultural identity, immigration and acculturation, health risk behaviors, and promoting positive and progressive developmental change during adolescence and emerging adulthood.

Dr. Miguel Ángel Cano is Assistant Professor in the Department of Epidemiology at Florida International University, Miami, Florida. He received his doctorate in Psychology from Texas A & M University, College Station, Texas. His research interests include ethnocultural and social determinants of psychiatric disorders and health risk behaviors (smoking and alcohol use) associated with chronic disease, syndemic interactions of affective symptoms/disorders and health behavior, and development of evidence-based health promotion interventions for underserved ethnic groups.

Dr. Elma I. Lorenzo-Blanco is Assistant Professor of Psychology at the University of South Carolina, Columbia, South Carolina. She received her doctorate in Psychology and Women's Studies from the University of Michigan, Ann Arbor, Michigan. Her research interests include Latino/a mental health and substance use, experiences of multi-racial/multi-ethnic families, and culture, gender, immigration, mental health, and substance use.

Dr. Assaf Oshri is Assistant Professor of Human Development and Family Science at the University of Georgia, Athens, Georgia. He received his doctorate in Developmental Psychology from Florida International University. His research interests include chronic stress in childhood, adolescent health risks, resilience, prevention, and youth development.

Dr. Christopher P. Salas-Wright is Assistant Professor in the School of Social Work at The University of Texas at Austin, Texas. He received his doctorate from Boston College School of Social Work, Chestnut Hill, Massachusetts. His research interests include etiology of adolescent alcohol and drug use, the intersection of substance use and HIV risk behavior, the examination of the dynamics of youth violence and juvenile delinquency, and the role of religiosity and spirituality in positive youth development.

Dr. Brandy M. Piña-Watson is Assistant Professor of Counseling Psychology at Texas Tech University, Lubbock, Texas. She received her doctorate in Counseling Psychology from Texas A&M University, College Station, Texas. Her research interests include resilience,

mental health disparities, and how individual factors, family dynamics, culture and society impact Latina/o adolescent and emerging adult depression, suicidality and well-being.

Dr. Andrea J. Romero is Associate Professor in Family Studies & Human Development at the University of Arizona, Tucson, Arizona. She received her doctorate in Social Psychology from the University of Houston, Houston, Texas. Her research interests include culture, health disparities, and sources of resiliency found in ethnic identity, families, and low-income neighborhoods.

References

- Acock, A. Summer Institute on Research Methodology. Corvallis, OR: 2008. Latent growth curve modeling using Mplus.
- Barnes HL, Olson DH. Parent-adolescent communication and the Circumplex Model. *Child Development*. 1985; 56:438–447. <http://doi.org/10.2307/1129732>.
- Cano MA, Schwartz SJ, Castillo LG, Unger JB, Huang S, Zamboanga BL, et al. Szapocznik J. Health risk behaviors and depressive symptoms among Hispanic adolescents: Examining acculturation discrepancies and family functioning. *Journal of Family Psychology*. 2016; 30:254–65. DOI: 10.1037/fam0000142 [PubMed: 26301514]
- Centers for Disease Control and Prevention. HIV Surveillance Report, 2013. 2015; 25 Retrieved from <http://www.cdc.gov/hiv/library/reports/surveillance/>.
- Cheung GW, Rensvold RB. Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling*. 2002; 9:233–55.
- Córdova D, Ciofu A, Cervantes R. Exploring culturally based intrafamilial stressors among Latino adolescents. *Family Relations*. 2014; 63:693–706. [PubMed: 25530653]
- Córdova D, Heinze J, Mistry R, Hsieh HF, Stoddard S, Salas-Wright CP, Zimmerman MA. Family functioning and parent support trajectories and substance use and misuse among minority urban adolescents: A latent class growth analysis. *Substance Use & Misuse*. 2014; 49:1908–1919. <http://dx.doi.org/10.3109/10826084.2014.935792>. [PubMed: 25033377]
- Córdova D, Huang S, Arzon M, Freitas D, Malcolm S, Prado G. The role of attitudes, family, peer and school on alcohol use, rule breaking and aggressive behavior in Hispanic delinquent adolescents. *The Open Family Studies Journal*. 2011; 4(Suppl 1–M4):38–45. [PubMed: 22473467]
- Córdova D, Huang S, Lally M, Estrada Y, Prado G. Do parent-adolescent discrepancies in family functioning increase the risk of Hispanic adolescent HIV risk behaviors? *Family Process*. 2014; 53:348–363. <http://dx.doi.org/doi:10.1111/famp.12067>. [PubMed: 24617745]
- Córdova D, Huang S, Pantin H, Prado G. Do the effects of a family intervention on alcohol and drug use vary by nativity status? *Psychology of Addictive Behaviors*. 2012; 26:655–60. <http://dx.doi.org/10.1037/a0026438>. [PubMed: 22141423]
- De Los Reyes A. Introduction to the special section: More than measurement error: Discovering meaning behind informant discrepancies in clinical assessments of children and adolescents. *Journal of Clinical Child & Adolescent Psychology*. 2011; 40:1–9. <http://dx.doi.org/10.1080/15374416.2011.533405>. [PubMed: 21229439]
- De Los Reyes A. Strategic objectives for improving understanding of informant discrepancies in developmental psychopathology research. *Development and Psychopathology*. 2013; 25:669–82. <http://dx.doi.org/10.1017/S0954579413000096>. [PubMed: 23880384]
- De Los Reyes A, Goodman KL, Kliwer W, Reid-Quinones K. The longitudinal consistency of mother-child reporting discrepancies of parental monitoring and their ability to predict child delinquent behaviors two years later. *Journal of Youth and Adolescence*. 2010; 39:1417–1430. <http://dx.doi.org/10.1007/s10964-009-9496-7>. [PubMed: 20020188]
- De Los Reyes A, Kazdin AE. Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin*. 2005; 131:483–509. <http://dx.doi.org/10.1037/0033-2909.131.4.483>. [PubMed: 16060799]

- Ennis, S.; Rios-Vargas, M.; Albert, N. The Hispanic Population: 2010. 2010 Census Briefs. 2011. <http://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf>
- Farrelly C, Córdoba D, Huang S, Estrada Y, Prado G. The role of acculturation and family functioning in predicting HIV risk behaviors among Hispanic delinquent youth. *Journal of Immigrant and Minority Health*. 2013; 15:476–483. <http://dx.doi.org/10.1007/s10903-012-9627-1>. [PubMed: 22532299]
- Geiser, C. Data analysis with Mplus. New York, NY: The Guilford Press; 2013.
- Gorman-Smith D, Tolan PH, Zelli A, Huesmann LR. The relation of family functioning to violence among inner-city minority youths. *Journal of Family Psychology*. 1996; 10:115–129. <http://dx.doi.org/10.1037/0893-3200.10.2.115>.
- Huang S, Córdoba D, Estrada Y, Brincks AM, Asfour LS, Prado G. An application of the complier average causal effect analysis to examine the effects of a family intervention in reducing illicit drug use among high-risk Hispanic adolescents. *Family Process*. 2014; 53:336–347. <http://dx.doi.org/10.1111/famp.12068>. [PubMed: 24611528]
- Johnston, LD.; O'Malley, PM.; Miech, RA.; Bachman, JG.; Schulenberg, JG. Monitoring the future national results on adolescent drug use: Overview of key findings. Ann Arbor, MI: Institute for Social Research, The University of Michigan; 2015.
- Jung T, Wickrama K. An introduction to latent class growth analysis and growth mixture modeling. *Social and Personality Psychology Compass*. 2008; 2:302–317. <http://dx.doi.org/10.1111/j.1751-9004.2007.00054.x>.
- Kann L, Kinchen S, Shanklin SL, Flint KH, Kawkins J, Harris WA, et al. Zaza S. Youth risk behavior surveillance—United States, 2013. *Morbidity and Mortality Weekly Report Surveillance Summaries*. 2014; 63(SS04):1–168. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/24918634>.
- Kim SY, Chen Q, Wang Y, Shen Y, Orozco-Lapray D. Longitudinal linkages among parent–child acculturation discrepancy, parenting, parent–child sense of alienation, and adolescent adjustment in Chinese immigrant families. *Developmental Psychology*. 2013; 49:900–912. DOI: 10.1037/a0029169 [PubMed: 22799587]
- Leung JT, Shek DT. Parent–adolescent discrepancies in perceived parenting characteristics and adolescent developmental outcomes in poor Chinese families. *Journal of Child and Family Studies*. 2014; 23:200–213. [PubMed: 24482569]
- Li W, Jaroszewski L, Godzik A. Clustering of highly homologous sequences to reduce the size of large protein databases. *Bioinformatics*. 2001; 17:282–283. [PubMed: 11294794]
- Little, TD. Longitudinal structural equation modeling. New York: Guilford Press; 2013.
- Malcolm S, Huang S, Córdoba D, Freitas D, Arzon M, Jimenez GL, et al. Prado G. Predicting condom use attitudes, norms, and control beliefs in Hispanic problem behavior youth: The effects of family functioning and parent-adolescent communication about sex on condom use. *Health Education & Behavior*. 2012; 40:384–391. <http://dx.doi.org/10.1177/1090198112440010>. [PubMed: 22561377]
- Marsiglia FF, Nagoshi JL, Parsai M, Castro FG. The effects of parental acculturation and parenting practices on the substance use of Mexican-heritage adolescents from Southwestern Mexican neighborhoods. *Journal of Ethnicity in Substance Abuse*. 2014; 13:288–311. [PubMed: 25176121]
- Meade AW, Johnson EC, Braddy PW. Power and sensitivity of alternative fit indices in tests of measurement invariance. *The Journal of Applied Psychology*. 2008; 93:568–592. DOI: 10.5465/AMBPP.2006.27182124 [PubMed: 18457487]
- Muthén, B. Latent variable analysis: Growth mixture modeling and related techniques for longitudinal data. In: Kaplan, D., editor. *Handbook of Quantitative Methodology for the Social Sciences*. Thousand Oaks, CA: SAGE Publications; 2004. p. 345-368.
- Muthén, LK.; Muthén, BO. Mplus User's Guide. 7th. Los Angeles, CA: Muthén & Muthén; 1998–2012. Retrieved from <http://www.webcitation.org/6eJVvEGlw>
- Ohannessian CM. Discrepancies in adolescents' and their mothers' perceptions of the family and adolescent externalizing problems. *Family Science*. 2012; 3:135–140. <http://dx.doi.org/10.1080/19424620.2012.704596>. [PubMed: 23139847]

- Ohannessian CM, Lerner RM, Lerner JV, Von Eye A. Adolescent-parent discrepancies in perceptions of family functioning and early adolescent self-competence. *International Journal of Behavioral Development*. 2000; 24:362–372. <http://dx.doi.org/10.1080/01650250050118358>.
- Ohannessian CM, Lerner RM, Lerner JV, von Eye A. Discrepancies in adolescents' and parents' perceptions of family functioning and adolescent emotional adjustment. *Journal of Early Adolescence*. 1995; 15:490–516. <http://dx.doi.org/10.1177/0272431695015004006>.
- Pantin, H. Ecodevelopmental measures of support and conflict for Hispanic youth and families. Miami, FL: University of Miami School of Medicine; 1996.
- Patterson JM. Integrating family resilience and family stress theory. *Journal of Marriage and Family*. 2002; 64:349–360.
- Pew Research Center. Modern immigration wave brings 59 million to U S, driving population, growth and change through 2065: Views of immigration's impact on U S society mixed. Washington, D.C: 2015. Retrieved from <http://www.pewhispanic.org/2015/09/28/modern-immigration-wave-brings-59-million-to-u-s-driving-population-growth-and-change-through-2065/>
- Prado G, Córdova D, Huang S, Estrada Y, Rosen A, Bacio GA, et al. McCollister K. The efficacy of Familias Unidas on drug and alcohol outcomes for Hispanic delinquent youth: Main effects and interaction effects by parental stress and social support. *Drug and Alcohol Dependence*. 2012; 125(SUPPL.1):S18–S25. <http://dx.doi.org/10.1016/j.drugalcdep.2012.06.011>. [PubMed: 22776441]
- Prado G, Huang S, Córdova D, Malcolm S, Estrada Y, Cano N, et al. Brown CH. Ecodevelopmental and intrapersonal moderators of a family based preventive intervention for Hispanic youth: A latent profile analysis. *Prevention Science*. 2013; 14:290–299. <http://dx.doi.org/10.1007/s11121-012-0326-x>. [PubMed: 23408280]
- Reynolds EK, MacPherson L, Matusiewicz AK, Schreiber WM, Lejuez CW. Discrepancy between mother and child reports of parental knowledge and the relation to risk behavior engagement. *Clinical Child and Adolescent Psychology*. 2011; 40:67–79. <http://dx.doi.org/10.1080/15374416.2011.533406>.
- Schwartz SJ, Unger JB, Baezconde-Garbanati L, Benet-Martínez V, Meca A, Zamboanga BL, et al. Szapocznik J. Longitudinal trajectories of bicultural identity integration in recently immigrated Hispanic adolescents: Links with mental health and family functioning. *International Journal of Psychology*. 2015; 50:440–50. DOI: 10.1002/ijop.12196 [PubMed: 26212218]
- Schwartz, SJ.; Unger, JB.; Baezconde-Garbanati, L.; Zamboanga, BL.; Córdova, D.; Lorenzo-Blanco, EI.; et al. Szapocznik, J. Testing the parent-adolescent acculturation discrepancy hypothesis: A five-wave longitudinal study. *Journal of Research on Adolescence*. In press <http://dx.doi.org/10.1111/jora.12214>
- Schwartz SJ, Unger JB, Des Rosiers SE, Lorenzo-Blanco EI, Zamboanga BL, Huang S, et al. Szapocznik J. Domains of acculturation and their effects on substance use and sexual behavior in recent Hispanic immigrant adolescents. *Prevention Science*. 2013; 15:385–396. DOI: 10.1007/s11121-013-0419-1 [PubMed: 23828449]
- Schwartz SJ, Unger JB, Des Rosiers SE, Huang S, Baezconde-Garbanati L, Lorenzo-Blanco EI, et al. Szapocznik J. Substance use and sexual behavior among recent Hispanic immigrant adolescents: Effects of parent-adolescent differential acculturation and communication. *Drug and Alcohol Dependence*. 2012; 125 Suppl:S26–34. <http://dx.doi.org/10.1016/j.drugalcdep.2012.05.020>. [PubMed: 22699094]
- Smokowski PR, Rose R, Bacallao ML. Acculturation and Latino family processes: How cultural involvement, biculturalism, and acculturation gaps influence family dynamics*. *Family Relations*. 2008; 57:295–308.
- Smokowski PR, Rose Ra, Evans CBR, Cotter KL, Bower M, Bacallao M. Familial influences on internalizing symptomatology in Latino adolescents: An ecological analysis of parent mental health and acculturation dynamics. *Development and Psychopathology*. 2014; 26:1191–1207. DOI: 10.1017/S0954579414000960 [PubMed: 25422955]
- Stuart J, Jose PE. The influence of discrepancies between adolescent and parent ratings of family dynamics on the well-being of adolescents. *Journal of Family Psychology*. 2012; 26:858–868. <http://dx.doi.org/10.1037/a0030056>. [PubMed: 23066676]

- Szapocznik, J.; Coatsworth, JD. An ecodevelopmental framework for organizing the influences on drug abuse: A developmental model of risk and protection. In: Glantz, MD.; Hartel, CR., editors. Drug abuse: Origins & interventions. Washington, DC: American Psychological Association; 1999. p. 331-366.
- Tello J, Cervantes RC, Córdoba D, Santos SM. Joven noble: Evaluation of a culturally focused youth development program. *Journal of Community Psychology*. 2010; 38:799–811. DOI: 10.1002/jcop.20396
- Tolan PH, Gorman-Smith D, Huesmann LR, Zelli A. Assessment of family relationship characteristics: A measure to explain risk for antisocial behavior and depression among urban youth. *Psychological Assessment*. 1997; 9:212–223. <http://dx.doi.org/10.1037/1040-3590.9.3.212>.
- Tolvanen, A. Latent growth mixture modeling: A simulation study. Koskela, P., editor. Finland: University of Jyväskylä; 2007. Retrieved from <http://urn.fi/URN:ISBN:951-39-2971-8>
- Unger JB, Ritt-Olson A, Wagner KD, Soto DW, Baezconde-Garbanati L. Parent-child acculturation patterns and substance use among Hispanic adolescents: A longitudinal analysis. *Journal of Primary Prevention*. 2009; 30:293–313. DOI: 10.1007/s10935-009-0178-8 [PubMed: 19384604]
- U.S. Census Bureau. U S Census Quick Facts: United States. 2014. Retrieved from <http://www.webcitation.org/6eJOgCRPv>
- Wang CP, Hendricks Brown C, Bandeen-Roche K. Residual diagnostics for growth mixture models: Examining the impact of a preventive intervention on multiple trajectories of aggressive behavior. *Journal of the American Statistical Association*. 2005; 100(471):1054–1076.

Figure 1.
Parent-adolescent family functioning discrepancies trajectories.

Table 1

Adolescent HIV Risk Behaviors at Time Point Six

Risk Behaviors	Adolescents (n = 302)		Class 1: Low-Stable (n = 157)		Class 2: High-Increasing (n = 66)		Class 3: High-Stable (n = 79)	
	n	%	n	%	n	%	n	%
Sexual debut								
No	153	63.7	68.4		62.7		56.3	
Yes	87	36.3	31.6		37.3		43.7	
Lifetime unprotected sex								
No	43	48.3	46.7		53.0		47.3	
Yes	46	51.7	53.3		47.0		52.7	
Lifetime alcohol use								
No	180	74.7	76.1		82.0		66.5	
Yes	61	25.3	23.9		18.0		33.5	
Past-90 days alcohol use								
No	34	54.8	65.6		47.4		43.3	
Yes	28	45.2	34.4		52.6		56.7	

Table 2
Family Functioning Discrepancy Scores Over Time

Family Functioning Indicator	Parent Reports	Adolescent Reports
Family cohesion		
Time 1	14.24 (2.52)	13.61 (3.19)
Time 2	15.56 (2.60)	13.22 (3.48)
Time 3	13.97 (2.73)	13.01 (3.56)
Time 4	14.44 (2.62)	12.89 (3.66)
Time 5	13.81 (2.72)	12.88 (3.92)
Time 6	14.30 (2.71)	12.99 (3.95)
Parent–adolescent communication		
Time 1	55.28 (9.30)	49.79 (13.15)
Time 2	55.72 (9.15)	49.13 (13.59)
Time 3	55.72 (9.16)	48.89 (13.51)
Time 4	56.27 (9.55)	49.84 (13.73)
Time 5	56.04 (9.22)	49.76 (13.91)
Time 6	56.14 (9.50)	50.36 (13.85)
Peer relations		
Time 1	10.33 (4.24)	9.38 (5.04)
Time 2	10.57 (4.06)	9.78 (5.06)
Time 3	10.78 (3.87)	10.18 (4.86)
Time 4	10.99 (3.90)	9.95 (5.11)
Time 5	11.28 (3.93)	10.68 (4.92)
Time 6	11.52 (3.58)	11.18 (4.83)
Family communication		
Time 1	6.71 (1.56)	6.52 (1.90)
Time 2	6.99 (1.53)	6.31 (2.07)
Time 3	6.75 (1.73)	6.31 (2.08)
Time 4	6.94 (1.58)	6.28 (2.09)
Time 5	6.57 (1.72)	6.38 (2.13)
Time 6	6.89 (1.56)	6.37 (2.18)
Positive parenting		
Time 1	23.34 (4.77)	23.17 (7.07)
Time 2	23.30 (4.63)	22.82 (6.83)
Time 3	23.38 (5.03)	22.47 (6.77)
Time 4	23.59 (4.86)	22.80 (7.07)
Time 5	23.42 (5.22)	22.56 (7.56)
Time 6	23.84 (5.41)	22.49 (7.49)
Involvement		
Time 1	59.02 (8.30)	38.98 (10.88)
Time 2	58.98 (8.98)	39.47 (11.41)
Time 3	59.24 (8.66)	39.45 (11.51)

Family Functioning Indicator	Parent Reports	Adolescent Reports
Time 4	59.65 (8.40)	40.05 (11.00)
Time 5	59.47 (8.99)	40.32 (12.55)
Time 6	59.20 (9.34)	40.47 (11.68)

Note. Standard deviations are in parenthesis.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Table 3
Measurement Invariance in a Longitudinal Confirmatory Factor Analysis

Model	χ^2 (df)	χ^2 (df)	CFI	CFI	RMSEA	RMSEA	SRMR
<i>Parent Model</i>							
Configural Invariance	726.016 (482) *		.958		.041	.072	.072
Metric Invariance	757.947 (507) *	31.931 (25)	.957	.001	.040	.075	.075
Scalar Invariance	828.599 (537) *	70.652 (30) *	.950	.007	.042	.078	.078
<i>Adolescent Model</i>							
Configural Invariance	721.921 (482) *		.960		.041	.058	.058
Metric Invariance	752.861 (507) *	30.940 (25)	.959	.001	.040	.061	.061
Scalar Invariance	838.289 (537) *	85.428 (30) *	.950	.009	.043	.065	.065

Note.

* $p < .05$.

Table 4**Adolescent HIV Risk Behavior Outcomes at Time Point Six**

	<i>Lifetime Alcohol Use</i>		<i>Past 90-day Alcohol Use</i>		<i>Sexual Debut</i>		<i>Lifetime Unprotected Sex</i>	
	OR (SE)	<i>p</i>	OR (SE)	<i>p</i>	OR (SE)	<i>p</i>	OR (SE)	<i>p</i>
High-Stable compared to Low-Stable	1.61 (0.62)	.01*	2.51 (1.51)	.10 ⁺	1.68 (0.21)	.004**	0.98 (0.58)	0.08 ⁺
High-Increasing compared to Low-Stable	0.70 (0.33)	.03*	2.13 (1.83)	.25	1.29 (0.5)	.01*	0.78 (0.51)	0.13
High-Stable compared to High-Increasing	2.29 (0.21)	.04*	1.18 (0.75)	.26	1.31 (0.30)	.01*	1.25 (0.49)	0.10 ⁺