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# Family Dynamics and Aggressive Behavior in Latino Adolescents

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**Objectives:** Despite high prevalence rates and evidence that acculturation is associated with adolescent behavioral and mental health in Latino youth, little research has focused on aggressive behavior for this population. The aim of the current study was to fill this research gap by examining the influence of several aspects of family functioning, including parent–adolescent conflict, parent worry, and parent marital adjustment, on aggression among Latino adolescents. **Method:** Data come from the Latino Acculturation and Health Project (LAHP), a longitudinal investigation of acculturation in Latino families in North Carolina and Arizona. Hierarchical linear modeling was used to estimate a longitudinal rater effects model of adolescent aggression as reported by 258 Latino adolescents each paired with 1 parent for a total of 516 participants across 4 time points over a span of 18 months. **Results:** Results indicated a general decline in aggression over the study window. In addition, parent–adolescent conflict and parent worry predicted higher adolescent aggression whereas parent marital adjustment predicted lower adolescent aggression. **Conclusions:** The salience of family risk factors for aggression among Latino adolescents is discussed.

**Keywords:** adolescent aggression, parent–child conflict, Latino families, anxiety, marital adjustment

Aggression appears to be a common experience among Latino adolescents. According to the Centers for Disease Control and Prevention's Youth Risk Behavior Surveillance System (CDC, 2014), 28.4% of Latino high school students reported being in a physical fight in the past 12 months. This prevalence is approximately equal to that among multiracial adolescents (28.5%) and notably higher than prevalence rates among White adolescents (20.9%). Further, compared with their White counterparts (5.8%), Latino adolescents (8.5%) were notably more likely to report being threatened or injured with a weapon (CDC, 2014). However, those racial/ethnic group comparisons were not adjusted for socioeconomic variables such as education and income.

Extant reviews indicate that acculturation is related to aggressive behavior in Latino youth (Smokowski, David-Ferdon, & Stroupe,

2009). The preponderance of evidence from studies on Latino youth indicates that higher levels of adolescent assimilation (i.e., measured by time in the United States, English language use, U.S. cultural involvement, or individualism scales) are a risk factor for youth violence. Beyond acculturation, however, Latino adolescents may experience unique risk factors for aggression that have received little research attention. Given the strong emphasis placed on family in the Latino culture (i.e., familism; Coohy, 2001; Vega, 1995), it is possible that familial risk factors play a particularly important role in adolescent behavior. Indeed, previous research on Latino adolescents has found that familism was negatively associated with youth disposition to deviance, which in turn, was associated with an increase in alcohol involvement (Gil, Wagner, & Vega, 2000). The impact of familism on Latino youth behavior suggests that additional characteristics of the family might serve as key risk factors for negative behavior, such as aggression, in this population. The goal of the current study was to examine the influence of several aspects of the family, including parent–adolescent conflict, parent worry, and parent marital adjustment, on aggression among Latino adolescents. The following is a review of the extant literature on adolescent aggression and, where available, adolescent aggression specific to Latino adolescents.

## Literature Review

### Family Coercion Theory of Childhood Aggression

Family coercion theory posits that the roots of adolescent conduct problems (e.g., aggression) reside in the family (Patterson,

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DeBaryshe, & Ramsey, 1989). According to this theory, negative family interactions lead to or exacerbate adolescent problem behaviors, often times resulting in increased aggression (Long, Edwards, & Bellando, 2009; Patterson, 1982). Poor parental discipline and monitoring lead to adolescent conduct problems and coercive behaviors, which adolescents then use in an attempt to escape additional negative interactions (Patterson et al., 1989). This pattern of behavior results in a bidirectional cycle of coercion between parent and child, which leads to increased deviant behavior (Crosswhite & Kerpelman, 2009). The consistent presence of dysfunction in the home, such as parent–adolescent conflict or marital discord, normalizes this behavior and thus aggression becomes part of the behavioral repertoire of many youth from families with high levels of dysfunction. Social science research provides some evidence substantiating coercion theory.

### **Risk Factors in Family Dynamics That Underpin Family Coercion Theory**

**Parent–adolescent conflict.** Parent–adolescent conflict has been identified as a risk factor for poor adolescent development. Given that the acculturation process and cultural involvement can exacerbate normative family conflict (Szapocznik & Williams, 2000), parent–adolescent conflict may be a particularly salient risk factor for foreign-born Latino adolescents. Indeed, researchers have confirmed a significant association between the acculturation process and parent–adolescent conflict (McQueen, Getz, & Bray, 2003; Smokowski & Bacallao, 2006). Parent–adolescent conflict, in turn, leads to aggression (Smokowski & Bacallao, 2006; Smokowski et al., 2009).

Some evidence underscores the importance of family processes in mediating the relationship between acculturation and adolescent behavior. Gonzales, Dearthoff, Formoso, Barr, and Barrera (2006) reported that family conflict was an important mediator, and linked acculturation to increased youth externalizing symptoms. The direct relationship between family linguistic acculturation and adolescent conduct problems was not significant; however, linguistic acculturation was associated with heightened family conflict, which in turn, was related to increased adolescent conduct problems. Similarly, another study demonstrated that the relationship between acculturation and problem behavior proneness was mediated by parental investment (Dinh et al., 2002). Controlling for problem behavior proneness, acculturation was inversely related to parental investment, which in turn, was negatively associated with problem behavior proneness (Dinh et al., 2002). Smokowski and Bacallao (2006) identified family processes (i.e., familism and parent–adolescent conflict) as mediators of acculturation conflicts on adolescent aggression. The risk pathway led from acculturation conflicts to increased parent–adolescent conflicts to higher levels of adolescent aggression. In contrast, adolescent culture-of-origin involvement and familism were inversely associated with adolescent aggression. Familism not only buffered the effect of acculturation conflicts but was associated with decreased adolescent aggression. In addition, an indirect effect was found for parent U.S. cultural involvement on aggression through lower parent–adolescent conflict. Similarly, in a multicultural sample of adolescents in Miami, adolescent culture-of-origin involvement and familism were inversely associated with adolescent aggression (Taylor, Biafora, Warheit, & Gil, 1997).

**Parent anxiety (worry).** Parent and adolescent mental health functioning are inextricably linked. A worried, fearful, and anxious parent might be unable to adequately care for an adolescent's physical and emotional needs, resulting in adolescent distress and anxiety. Indeed, the connection between parent and adolescent anxiety is well established (Biederman et al., 2006; Biederman, Rosenbaum, Bolduc, Faraone, & Hirshfeld, 1991; Burstein, Ginsburg, & Tein, 2010). However, less research has examined the relationship between parent anxiety and other adolescent mental health problems such as aggression (Burstein et al., 2010).

Existing research on the link between parent anxiety and adolescent aggression is lacking, especially for Latino families. One study of mostly White youth ages 6–14, found that parent anxiety was not significantly associated with children's aggression (Burstein et al., 2010). However, in another sample of 132 adolescents with traumatic brain injury, poor parent psychological functioning was significantly associated with increased aggression (Raj et al., 2014). In addition, Smokowski and Bacallao (2010) found that Latino adolescents were aware of their parent's anxiety in the acculturation process; this awareness of parent vulnerability increased adolescent anxiety. Clearly, additional research is needed to examine the relationship between parent worry and adolescent aggression, especially in Latino samples.

The relationship between parental anxiety and adolescent aggression might be impacted by family conflict. Poor parent mental health, such as anxiety, negatively impacts parent–adolescent interactions (see Lovejoy, Graczyk, O'Hare, & Neuman, 2000 for a review). Indeed, increased parental anxiety and depression were significantly associated with more punitive parenting practices and less parent involvement (Leinonen, Solantaus, & Punamaki, 2003). The increased stress caused by conflict ridden parenting styles negatively impacts adolescent mental health, possibly resulting in increased aggression. For example, in a predominantly White sample of youth ages 7–13, family conflict was significantly associated with proactive aggression for youth who reported high levels of anxiety (Tanaka, Raishevich, & Scarpa, 2010).

**Parent dyadic adjustment (parents' marital quality).** Along with poor parent mental health, marital conflict is another factor that can hinder the formation of a positive parent–adolescent relationship (see Erel & Burman, 1995 for a review), which, as mentioned above, is a risk factor for poor adolescent mental health outcomes such as aggression. For example, youth whose parents have high-conflict marriages are at risk for poor mental health outcomes such as depression and anxiety (Cummings & Davies, 2010; see Grych & Fincham, 1990 for a review). This trend might apply to other mental health outcomes, such as aggression. Indeed, in a sample of 3,718 Chinese females ages 11–19, marital quality was significantly correlated with aggression (Li, Guo, & Chen, 2012). In another study of 867 Swedish twin pairs, researchers found that exposure to low levels of marital quality was modestly associated with aggression (Schermerhorn et al., 2011). However, in a sample of 676 youth ages 6–16 diagnosed with attention-deficit/hyperactivity disorder, parents' level of happiness in their marriage was not associated with parent and teacher reports of youth aggression (Connolly & Vance, 2010). Marital satisfaction, also termed dyadic adjustment, is one way of gauging the level of conflict in a marriage. In a nationally representative sample of 3,316 adolescents ages 12–14, parental reports of poor marital quality were associated with decreased mental and physical health

and increased substance use for adolescents (Hair, Moor, Hadley, Kaye, & Orthner, 2009).

### Demographic Markers Associated With Family Dynamics and Adolescent Aggression

**Gender.** In general, compared with females, males display higher levels of aggression (Broidy et al., 2003; Frisell, Pawitan, Langstrom, & Lichtenstein, 2012; Peterson, Esbensen, Taylor, & Freng, 2007; Topitzes, Mersky, & Reynolds, 2012; Zheng & Cleveland, 2013). However, this research does not necessarily translate to Latino samples. For instance, in a previous study of Latino adolescents, females reported more aggressive behavior than their male counterparts (Smokowski, Rose, & Bacallao, 2009). Given a lack of research on gender differences in aggression among Latino adolescents, additional research is warranted.

**Age.** Aggression typically begins in early childhood and decreases throughout childhood and adolescence. This declining trajectory has been documented in several studies (e.g., Bongers, Koot, van der Ende, & Verhulst, 2003; Miner & Clarke-Stewart, 2008; Williams et al., 2009). Given previous findings that aggressive behavior serves as a coping strategy for acculturation stress (Gil et al., 2000), Smokowski, David-Ferdon, and Stroupe (2009) posited that Latino adolescents would experience a steady or increasing trajectory of aggressive behavior. However, this hypothesis was not supported; rather, a significant negative trend best characterized the trajectory of Latino adolescents in the study.

**Family income.** Family poverty has been associated with a host of negative developmental outcomes throughout childhood and adolescence, including aggression. For example, in a longitudinal study following children from birth through early childhood, family income significantly predicted a rising trajectory of high physical aggression (Tremblay et al., 2004). Another study examining within-child associations between family income and childhood externalizing problems found that children had fewer externalizing symptoms when their families' incomes were relatively high (Dearing, McCartney, & Taylor, 2006). The link between family income and aggressive behavior appears to apply to Latinos as well. Mistry, Vandewater, Huston, and McLoyd (2002) demonstrated support for a structural equation model that linked economic well-being to externalizing problems among Latino children. Specifically, economic well-being led to perceived economic pressure, which influenced parent psychological distress. Distressed parents, in turn, were less responsive and felt incapable of effective discipline, which impacted childhood aggression.

### Hypotheses for Current Study

Based on previous literature and family coercion theory, we made the following hypotheses: (H1) aggression would decrease over time; (H2) family income would be negatively associated with aggression; (H3) parent-adolescent conflict would be a significant risk factor for aggression; (H4) parent worry would be significantly and positively associated with aggressive behavior; and (H5) dyadic adjustment would be a significant promotive factor against aggression. Given the lack of research on gender differences in rates of aggression among Latino adolescents, no specific hypotheses were made for this risk marker.

## Method

### Recruitment and Data Collection Procedure

The current study uses data from the Latino Acculturation and Health Project (LAHP), a longitudinal investigation of acculturation in Latino families in North Carolina and Arizona (Smokowski & Bacallao, 2006; Smokowski, Rose, & Bacallao 2010). In depth, community-based interviews with Latino adolescents and their parents were conducted. In order to increase the sample heterogeneity, approximately equal proportions of Latino families residing in small towns (35%), metropolitan areas (30%), and rural areas (35%) were interviewed. The majority of the interviews (i.e., 67%) took place in North Carolina and others were conducted in areas surrounding Phoenix, Arizona. Participating families were recruited from churches, English as a Second Language programs, and Latino community events. As part of the recruitment process, families were informed that the purpose of the study was to help gain insight into how Latino adolescents and their parents adjust to life in the United States. In-person, structured, quantitative interviews were conducted in participants' homes and usually lasted about 2 hr per family. This study was approved by a behavioral science Internal Review Board.

The quantitative interview protocol consisted of frequently used psychosocial measures that assessed cultural involvement, discrimination, familism, parent-adolescent conflict, and parent and adolescent mental health issues (e.g., depression, anxiety, self-esteem). Bilingual research staff translated the measures from English to Spanish and then back-translated from Spanish to English to ensure accurate translation. The interviews were conducted in the participants' preferred language. Bilingual social work or public health graduate students who had spent time in Central or South America and/or Mexico interviewed adolescents and one of their parents. Interviewers received extensive training in interviewing skills and had weekly supervision sessions to ensure that the interview protocol was closely followed. Interviewers worked in pairs so that adolescents and their parent could be interviewed separately and simultaneously. All consent forms and interview protocols were read aloud to participants in order to minimize missing data and to standardize administration across a wide range of literacy levels. Interviews were conducted at four time points at intervals of approximately 6 months. Parents and adolescents received \$20 for each interview completed.

### Participants

The sample consisted of 258 Latino adolescents each paired with one parent for a total of 516 participants, 97% of whom were born outside of the United States. On average, participants had lived in the United States for 4.77 years with a range of 1 month to 17 years. Almost the entire sample (96%) attended school and ninth grade was the median grade. The majority of families (66%) were from Mexico, 21% were from South America, and 13% were from Central America. Additional participant demographic information is provided in Table 1.

### Measures

**Dependent variable: Aggression.** Adolescent aggression was measured using the Child Behavior Checklist (CBCL/4-18 com-

Table 1  
Participant Characteristics

Continuous		
	Mean	SD
Externalizing aggression (DV)	.28	.25
Conflict behavior (time-varying)	.21	.26
Parent age	39.39	6.46
Adolescent age	14.99	1.64
Family income (thousands of dollars)	26.24	18.46
Parent dyadic adjustment	3.98	.74
Parent worry	2.96	1.17
Years living in U.S.	9.43	5.6
Discrete		
	Proportion	N
Adolescent in school	.88	227
Adolescent has graduated	.08	21
Parent has elementary or no schooling	.31	80
Parents are married	.72	186
Lives in two-parent home	.72	186
Parent gender (1 = female)	.92	237
Adolescent gender (1 = female)	.60	155
Adolescent not born in U.S.	.62	160
Language spoken by parent		
English all of the time	.02	4
English most of the time	.03	8
English and Spanish most of the time	.37	85
Spanish most of the time	.29	68
Spanish all of the time	.29	67

pleted by parents and Youth Self-Report [YSR] completed by adolescents; Achenbach, 1991). This subscale consists of 17 Likert-type items, including "I argue a lot," "I destroy my own things," and "I get in many fights." Responses included not true, sometimes true, often true. The Cronbach's alpha reliability for adolescent aggression was 0.85 for adolescents and 0.89 for parents.

**Time.** A variable occasions design for time was used (Snijders & Bosker, 1999). Time elapsed at each of the four waves was measured in years living in the United States, which anchored time to a common experience for all adolescents in the sample including both native-born adolescents (time since birth) and immigrant adolescents (time since immigration). For example, one youth was surveyed at 91, 333, 463, and 643 days living in the United States. The time span between the first and second waves in this case was actually 8 rather than 6 months. Overall, the actual time elapsed between the first wave and the 6-, 12-, and 18-month follow-ups varied; at the 6-month follow-up, it ranged from 4 to 12 months; at the 12-month follow-up, it ranged from 8 to 15 months; and at the 18-month follow-up, it ranged from 4 to 22 months. Using the actual time elapsed made it possible to be more precise. Further, the interpretation of the coefficient for time as the unit change in aggression per year is more intuitive than the rate of change between wave indicators. To interpret the random intercept, "zero" time was needed, and as none of the adolescents were ever observed at zero time living in the United States, time was centered on each adolescent's mean time living in the United States over the four measurement occasions.

Four measurement occasions were adequate to model both a linear and a quadratic term for time (time squared). In the presence

of the quadratic term, the linear term has a more complex interpretation. A benefit to centering time on adolescents' mean time living in the United States is that at this point, time is zero and the linear time coefficient can therefore be interpreted as the rate of change at the adolescents' mean time living in the United States. At all other time points, the linear time coefficient is interpreted as the instantaneous rate of change in aggression per year that the adolescent lived in the United States and the actual change per year is a function of both the linear and quadratic coefficients interpreted at a specific time point. The quadratic component measures change in the rate of change in aggression at all time points. A positive quadratic coefficient indicates that over time the slope of aggression with respect to time increases, and a negative coefficient that it decreases (whether aggression is increasing or decreasing over time).

**Adolescent characteristics.** Adolescent characteristics included gender (female = 1, male = 0), mean-centered age, and sample mean centered household annual income (in thousands of dollars). Adolescent characteristics were treated as time invariant and measured at baseline.

**Adolescent report of parent-adolescent conflict.** Parent-adolescent conflict was assessed using the Conflict Behavior Questionnaire-20 (CBQ-20; Robin & Foster, 1989). This scale consisted of *yes-no* items assessing both positive and negative parent-adolescent interactions that occur in nonconflictual and argumentative exchanges. Example items included: "My parent(s) don't understand me" and "My parent(s) put me down." The Cronbach's alpha reliability was .89 for adolescents in this sample. Conflict behavior was measured at four time points, and in the final model, was included as a time-varying variable. In other variations it was tested as a time-invariant variable using the initial condition (Time 1) reports.

**Parent report of parent worry.** Parents' level of worry was assessed using five items from the 16-item Penn State Worry Questionnaire (Meyer, Miller, Metzger, & Borkovec, 1990). A subset of items was chosen for brevity on a long interview. Items were rated on a 5-point Likert scale with anchors ranging from *strongly disagree* to *strongly agree*. Example items included: "My worries overwhelm me" and "I am always worrying about something." Cronbach's alpha reliability was .90 for the current sample. This variable was included as a time invariant variable using baseline scores.

**Parent report of Dyadic Adjustment Scale.** Dyadic adjustment assesses the quality of a marital relationship. Spanier's (1976) 19-item Dyadic Adjustment Scale was used to assess marital quality in the current sample. Items were rated on a 5-point Likert scale (*all the time, most of the time, sometimes, hardly ever, never*). Example items included: "How often have you considered divorce, separation, or terminating the relationship?" and "How often do you confide in your partner?" Cronbach's alpha reliability was .98 in the current sample. This variable was included as a time invariant variable using baseline scores.

### Analysis Strategy Hierarchical Linear Modeling

In this study, we used multilevel modeling to estimate a longitudinal rater effects model of adolescent aggression as reported by two raters, adolescents and one of their parents (HLM; Guo & Hussey, 1999; Raudenbush & Bryk, 2002). In households with



more than one adolescent, a parent–adolescent pair was randomly sampled. A sensitivity test was run comparing the analytic sample with the participants discarded via random sampling. The discarded records contained a higher percentage of boys ( $\chi^2 = 20.35$ ;  $p < .001$ ), adolescents with less time living in the U.S. ( $t = 3.52$ ;  $p < .001$ ), and adolescents whose parents were more educated ( $\chi^2 = 10.79$ ;  $p < .01$ ). However, there were no differences on dependent and independent variables. In addition, two single-rater cases, a case consisting of only an adolescent and another consisting only of a parent, were deleted.

Four waves originally planned for an 18-month period with 6-month intervals (0, 6, 12, and 18 months were collected from the adolescent–parent pairs. The time level consisting of these repeated measures was nested within each rater, and these pairs of raters were nested within individual adolescents, yielding three levels of data. The proportion of variation attributed to raters and adolescents, measured by the intraclass correlation (ICC), was 21% at the adolescent level in both fully unconditional models and unconditional linear growth models. These indicate that conventional linear modeling methods (such as ordinary least squares) would underestimate standard errors for variables at the adolescent level and that multilevel or hierarchical linear modeling would be preferred (HLM; Raudenbush & Bryk, 2002). In three-level multilevel models, aggression was regressed on variables at the time and individual level (no variables were entered at the rater level). An extensive fitting procedure was used for building the final model.

**Fitting Procedure**

Models were examined for fit using the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) in order to determine (a) the appropriate independent variables; (b) whether the model should include a random slope for time; (c) the covariance structure, including the structure of the error terms at the time level; and (d) the proper form for conflict behavior (fixed or time varying) and interactions of conflict behavior with youth culture-of-origin involvement. In the first and last steps, maximum likelihood estimation was used to compare the fit of models with different fixed effects (Snijders & Bosker, 1999). After each step, the findings of the previous steps were retested and confirmed.

**Selected Model**

The first level of this multilevel model consisted of ratings of adolescent aggression ( $EXTS_{ij}$ ) regressed on adolescent mean-centered time ( $T_{ij} - T_{ij}$ ), quadratic time ( $(T_{ij} - T_{ij})^2$ ), and time-varying conflict behavior (CB):

$$EXTS_{ij} = \beta_{0ij} + \beta_{1ij}(T_{ij} - T_{ij}) + \beta_{2ij}(T_{ij} - \bar{T}_{ij})^2 + \beta_{3ij}CB_{ij} + r_{ij}$$

with  $[r_{ij} \sim N(0, \Sigma)]$ . (1)

$\Sigma$  is a general error covariance matrix with four variance parameters (one for each measurement occasion) and six covariance parameters (one for each combination of measurement occasions). In the second level the parameters of the first level were modeled on population averages for each individual with variance in the intercept ( $\beta_{0ij}$ ) and time parameters ( $\beta_{1ij}$ ; no random effect was

proposed for the coefficients on the quadratic term or conflict behavior). This level contained only averages and random effects pertaining to rater variation with no covariates.

$$\beta_{0ij} = \pi_{00j} + u_{0ij} \quad [u_{0ij} \sim N(0, \tau_0)] \quad (2.0)$$

$$\beta_{1ij} = \pi_{10j} + u_{1ij} \quad [u_{1ij} \sim N(0, \tau_1)] \quad (2.1)$$

$$\beta_{2ij} = \pi_{20j} \quad (2.2)$$

$$\beta_{3ij} = \pi_{30j} \quad (2.2)$$

In Model 3.0 and 3.1 in the third level, the random intercept ( $\pi_{_00j}$ ) and slope ( $\pi_{_10j}$ ) from Models 2.0 and 2.1 were regressed on a matrix of time-invariant predictors ( $X_{_j}$ ) including adolescent demographics, parent worry, and dyadic adjustment, as well as random effects arising from variation between adolescents. In addition, the rater-level means of acceleration (2.2) and conflict behavior (2.3) were then regressed on adolescent-level constants (3.2 and 3.3, respectively).

$$\pi_{00j} = \gamma_{000} + X_j\gamma_{001} + e_{00j} \quad [e_{00j} \sim N(0, \phi_0)] \quad (3.0)$$

$$\pi_{10j} = \gamma_{100} + X_j\gamma_{101} + e_{10j} \quad [e_{10j} \sim N(0, \phi_1)] \quad (3.1)$$

$$\pi_{20j} = \gamma_{200} \quad (3.2)$$

$$\pi_{30j} = \gamma_{300} \quad (3.2)$$

The coefficients reported in the results are the  $\gamma$  coefficients, representing participant-level means of all effects. The coefficients in the vector  $\gamma_{001}$  are interpreted as the expected difference in aggression between adolescents at the mean time in U.S. for a unit difference in the corresponding time-invariant predictor; the coefficients in  $\gamma_{101}$  are interpreted as the expected difference in aggression between adolescents in the instantaneous rate of change in aggression for a unit change in the corresponding time-invariant predictor. The coefficient  $\gamma_{100}$  is the sample grand mean on aggression at mean time in the United States; coefficients  $\gamma_{100}$  and  $\gamma_{200}$  estimate the change over time and the change-in-change over time in aggression; and the coefficient  $\gamma_{300}$  estimates the effect of parent–adolescent conflict behavior measured at each time point on the level of aggression at each time point.

**Missing Data**

Missing values due to attrition and scattered nonresponse were spread throughout the data. The dependent variable had nonresponse rates of 10% at Wave 1, 14% at Wave 2, 23% at Wave 3, and 27% at Wave 4. Nonresponse rates on the covariates and independent variables varied from less than 1% (for parent education, gender, age, and time living in the United States) to 50% (for parent dyadic adjustment). Parent dyadic adjustment, measured at Wave 2, but not at Wave 1, had a higher rate of nonresponse than scales measured at Wave 1. A chi-square test developed by Little (1988) demonstrated that the missing values were not completely random, and subsequently we used multiple imputation to address concerns regarding potential bias from these missing values (Schafer, 1997). An analysis informed the predictors in the imputation model as well as the number of imputations. Ten imputations were sufficient to minimize the impact of missing information on analysis; a diagnostic showed that additional imputations did not improve this measure. An imputation model consisted of more than 50 variables, including all variables used in

the regression as well as additional predictors used strictly for imputation. The additional predictors consisted of unused demographic variables and scales, including several measures that have been used and reported in other studies such as familism (e.g., Smokowski et al., 2010). All imputation and postestimation procedures were completed using SAS Proc MI and Proc MIAnalyze.

### Robustness, Diagnostics, and Model Details

After obtaining the final fitted model using the procedure described in the previous section, we retested covariate selection by running a version of the final model containing all covariates. Several diagnostics were also performed. Collinearity of the models was assessed using a variance inflation factor (VIF), with values approaching 10 indicating a high level of collinearity. Particular attention was paid to the relationship between age and time living in the United States, as these are the same for the adolescents born in the United States. Normality diagnostics were assessed on the dependent variable and on the predicted values and residuals from the final model using kernel density functions and normal probability plots. The kernel density functions showed that the dependent variable and residuals had a slightly left or positive skewed distribution, which is typical of aggression. However, the normal probability plot SAS version 9.1 Proc Mixed with restricted maximum likelihood was used to estimate all multilevel models. Standardized coefficients were calculated for conflict behavior, parent dyadic adjustment, and parent worry.

## Results

### Trends in Aggression and Conflict Behavior

Figure 1 and 2 show trends in aggression over the four measurement occasions as reported by adolescents and parents (see Figure 1) and by the level of reported parent–adolescent conflict behavior at each time point (see Figure 2). Figure 1 shows an overall downward trend in aggression, with a plateau for both parents and adolescents and with parents' reports an average of 0.14 to 0.16 below adolescents' reports. Figure 2 also shows a general downward trend. However, it also shows that adolescents with parent–adolescent conflict behavior reports below the median

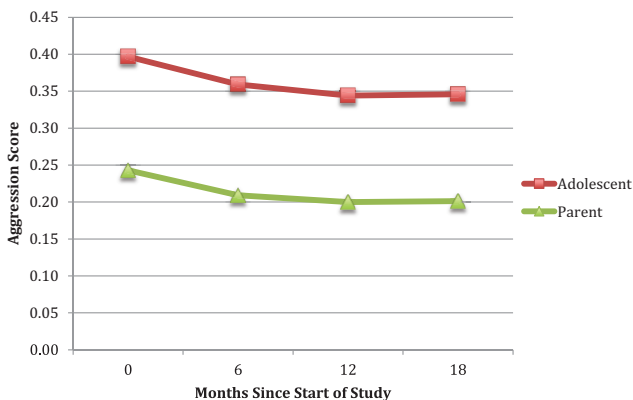


Figure 1. Trend in average aggression. See the online article for the color version of this figure.

had aggression scores 0.19–0.21 below adolescents at or above the median level on parent–adolescent conflict behavior. However, those below the median conflict behavior show a slight leveling off from 12 to 18 months in the reduction (improvement) in aggression scores. Figure 3 demonstrates that the level of conflict behavior, which is entered in the final model as a time-varying covariate, varies over the duration of the study, particularly between 12 and 18 months, with conflict behavior dropping.

### Hierarchical Linear Model

Table 2 contains the fixed and random effects estimates from the fitted HLM. Although the linear time coefficient was not significant, the quadratic term was ( $g = 0.051$ ;  $p < .01$ ). Time-varying parent–adolescent conflict behavior was significantly predictive of higher aggression ( $g = 0.309$ ;  $p < .001$ ;  $gstd = 0.316$ ).

Among the fixed effects modeled on the random intercept, parent dyadic adjustment was significantly predictive of lower aggression ( $g = -0.051$ ;  $p < .01$ ;  $gstd = -0.24$ ). Parent worry was significantly predictive of higher aggression ( $g = 0.4$ ;  $p < .001$ ;  $gstd = 0.114$ ). None of the covariates on the random intercept were significant; none of the predictors on the random slope were significant.

As described above, an extensive model fitting process selected this final model, and the selected model was best fitting on a variety of criteria. However, the findings for conflict behavior, parent dyadic adjustment, and parent worry are robust to all variations on random slope, covariance structure, and quadratic time, and are robust to most variations on the set of covariates selected for modeling, with only the effect for parent dyadic adjustment varying sufficiently in some models to render it non-significant.

## Discussion

Overall, findings indicate that various aspects of the family significantly predict adolescent aggressive behavior. Specifically, parent–adolescent conflict, parent worry, and marital quality impacted adolescent aggression. These findings highlight the utility of viewing the development of adolescent aggression in the context of family coercion theory.

### Aggression Over Time: Development Trajectories

Youth aggression declined over time. With a slope of  $-0.02$  per year at the average time in the United States, this decline was statistically significant, but modest. However, this decline varied over time, with the slope becoming shallower as indicated by the 0.051 coefficient for quadratic time. Figure 4 plots the predicted average trend in youth-reported aggression. At 1 year prior the mean time in the United States, the average rate of change in aggression would be  $-0.071$  per year ( $-0.02$  minus  $0.051$  times 1 year); and at 1 year after the mean time, it would actually be expected to rise slightly ( $0.031 = -0.02 + (0.051)(1)$ ).

The declining trajectory found in this sample confirms previous research on adolescent development (e.g., Bongers et al., 2003; Miner & Clarke-Stewart, 2008; Smokowski et al., 2009; Williams et al., 2009). As they age, adolescents may develop positive coping strategies that serve as alternatives to aggression. Aggression may

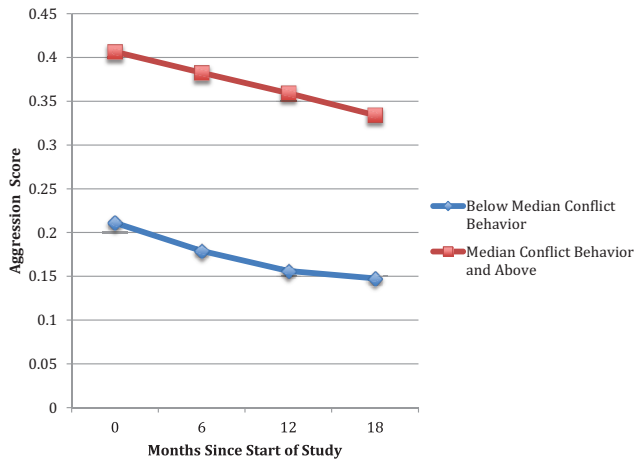


Figure 2. Trend in average aggression by parent–adolescent conflict behavior. See the online article for the color version of this figure.

also be less acceptable in maturing peer groups and with dating partners. It is also plausible that coercive family dynamics decrease as the adolescent ages, decreasing the impetus for aggressive behavior.

### Individual Characteristics

Gender, age, and family income were not significant predictors of aggression. This finding suggests that, for Latino adolescent aggression, factors in the family environment overshadow individual characteristics, which might be emblematic of the power that the family unit holds in Latino culture (Coohey, 2001).

### Parent–Adolescent Conflict

As hypothesized, parent–adolescent conflict was a significant risk factor for aggression. This finding is in line with family coercion theory, which posits that deviant youth behavior is increased by negative family interactions (Long et al., 2009; Patterson, 1982). Indeed, previous research found that parent–adolescent conflict was one of the most robust predictors of high adolescent aggression (Smokowski, Cotter, Robertson, & Guo, 2013). The current study extends past research by establishing this connection for Latino adolescents using longitudinal data from multiple raters. Parent–adolescent conflict erodes attachment, which according to social control theory, often results in aggressive behavior (Hirschi, 1969). This theory posits that attachments to others (e.g., parents) constrain deviant behavior such as aggression. However, the presence of conflict weakens these social bonds and they become less effective in constraining aggression.

Familism refers to the close-knit attitudes, behaviors, and family structures within a family system; this concept is particularly salient for Latino families (Coohey, 2001). The presence of familism is indicative of family cohesion, a family characteristic highly valued in Latino culture (Leidy, Guerra, & Toro, 2010). Familism is a protective factor associated with decreased aggression (Smokowski & Bacallao, 2006). The presence of parent–adolescent conflict erodes family cohesion, destabilizing the fa-

miliar homeostasis that is valued by Latino families, which might result in youth problem behaviors (Smokowski & Bacallao, 2010).

### Parent Anxiety (Propensity to Worry)

Parent worry was another significant risk factor for adolescent aggression, which is in line with Hypothesis 4. Many of the immigrant families in the current sample were likely undocumented and many of the parents spoke only Spanish. The constant threat of deportation, coupled with a limited ability to communicate outside of the Latino community, likely contributed to high levels of fear, worry, and anxiety among parents. Parent worry could be further exacerbated by acculturation stress and the fear that American culture might weaken the bonds of familism. Fearful and worried parents likely restrict adolescents' social freedom in order to keep them close to home to provide assistance navigating difficult situations (e.g., translating) and to maintain the strong family bond (Smokowski & Bacallao, 2010).

These strict limits imposed by worried parents might severely limit adolescent autonomy, which could result in aggressive behavior (i.e., adolescents acting out from frustration). The ultimate outcome of adolescent autonomy is the ability to make cautious decisions and to consider self in relation to individual, family, and societal needs (Spear & Kulbok, 2004). If the opportunity for autonomy development is hindered due to high levels of parent worry, adolescents might lack the ability to think through difficult situations. Thus, rather than relying on decision making skills, adolescents might resort to aggressive behavior.

Parent worry and parent–adolescent conflict often coexist. In this sample, the correlation between parent worry and parent–adolescent conflict was 0.39 ( $p < .01$ ), according to parent reports, and 0.31 ( $p < .01$ ), according to adolescent reports. This moderate, positive correlation shows that the two risk factors often come together in a toxic family atmosphere, with both individually predicting adolescent aggression as a result. Parents may become concerned over adolescent behavior and confront them, leading to an argument. Regardless of whether the parent's worry is well intentioned (i.e., concern over the adolescent's well being and health may make the parent anxious) or is a function of parent stress from some other source (i.e., worry about

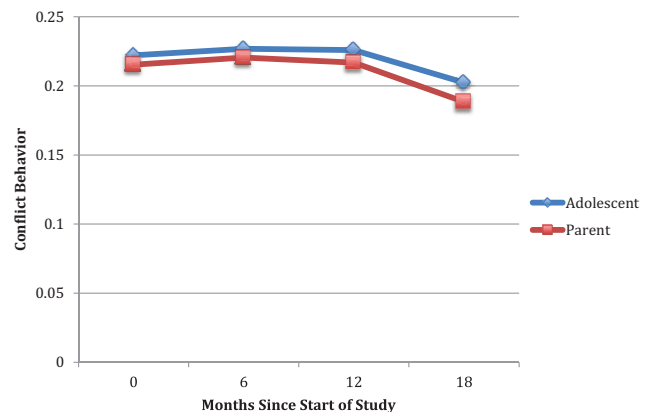


Figure 3. Trend in parent–adolescent conflict behavior. See the online article for the color version of this figure.



Table 2  
Results of Hierarchical Linear Model

Fixed effects	Est.	SE	<i>t</i> value	<i>p</i> value	Std. effect
<b>Random slope for linear time and covariance is unstructured</b>					
Intercept	.273	.027	10.005	.000***	
Calendar time (family mean centered)	-.020	.029	-.687	.492	
Calendar time squared	.051	.019	2.675	.008**	
TV adolescent report of parent-adol. conflict behavior	.309	.024	12.618	.000***	.316
<b>Random intercept fixed effects</b>					
1 = elementary or no schooling, 0 = higher	-.018	.024	-.742	.458	
Adol. gender (0 = boy, 1 = girl)	.003	.023	.120	.904	
Adolescent age at beginning of study	-.010	.006	-1.526	.127	
Family income (thousands of dollars)	.000	.003	-.069	.945	
Parent dyadic adjustment	-.051	.018	-2.796	.007**	-.240
Parent worry	.040	.010	3.949	.000***	.114
<b>Random slope fixed effects</b>					
Adol. gender (0 = boy, 1 = girl)	-.025	.017	-1.433	.156	
Adolescent age at beginning of study	-.005	.005	-.988	.324	
1 = elementary or no school	-.022	.018	-1.232	.220	
Family income (thousands of dollars)	.000	.004	.075	.941	
<b>Random effects/fit</b>					
un(2,1) id	-.001	.001			
un(2,2) id	.003	.001			
un(1,1) id	.009	.003			
un(1,1) raterid	.043	.004			
un(2,1) raterid	.028	.003			
un(2,2) raterid	.043	.003			
un(3,1) raterid	.028	.003			
un(3,2) raterid	.034	.003			
un(3,3) raterid	.050	.004			
un(4,1) raterid	.027	.003			
un(4,2) raterid	.028	.003			
un(4,3) raterid	.031	.004			
un(4,4) raterid	.052	.004			
-2LogL	-1222.932				
parms	13.000				
AIC	-1196.932				
BIC	-1222.932				

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

deportation causing the parent to restrict the adolescent's activities outside the home), parent anxiety often occurs with parent-adolescent conflict, eroding the positive relationship between the parent and the

adolescent. The resulting conflict and adverse parent-adolescent relationship is a significant risk factor connected to adolescent aggressive behavior.

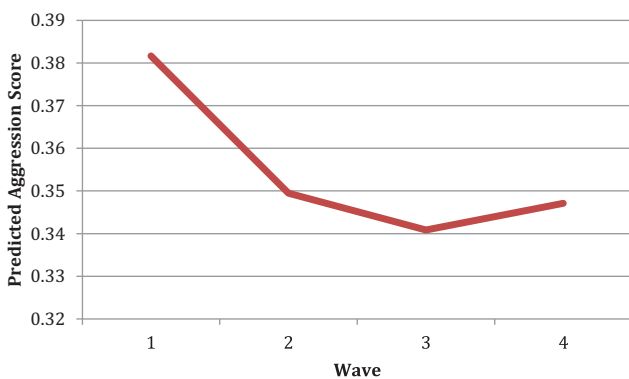


Figure 4. Predicted average trend in aggression, youth. See the online article for the color version of this figure.

### Dyadic Adjustment (Marriage Quality)

Affirming Hypothesis 5, marriage quality was a significant promotive factor, associated with decreased aggressive behavior. High quality marriages are characterized by mutuality, effective conflict resolution, and supportive interactions. Adolescents exposed to these positive relational behaviors replicate them in their social interactions. According to social learning theory, youth imitate behaviors to which they are repeatedly exposed (Bandura, 1973). Social learning theory is often applied to parental behaviors that children witness at home. The marital relationship provides a constant source of socialization for youth in terms of what is appropriate in social interactions. The youth, in turn, might internalize this positive behavior and display positive social behaviors, marked by low levels of aggression. Further, a high quality marriage is likely indicative of positive family functioning in general. Parents who treat each other with care and respect also likely

treat their children with care and respect. This mutuality circumvents the cycle of coercion described in family coercion theory and increases the likelihood of youth behaving in a prosocial, nonaggressive manner.

## Limitations

Despite many strengths of the current study, including a unique sample and rigorous longitudinal analyses, a few limitations should be noted. The analyses were based on a nonrandom, community-based sample of Latino families living in North Carolina or Arizona. Therefore, results should be cautiously generalized to other Latino communities. Latinos are a heterogeneous group that includes individuals from several countries. It therefore would have been ideal to conduct subgroup analysis by country of origin. However, due to inadequate, subgroup sample sizes, this refined analysis was not possible. Finally, although the current study is noteworthy for examining longitudinal trajectories of aggression, it would have been optimal to have an increased number of data points for analysis.

## Conclusion

The current study addressed a significant gap in the literature and examined family factors that predict Latino adolescent aggression. Findings highlight the salience of family risk and protective factors for aggression among Latino adolescents. Using family coercion theory as a lens, results revealed that parent-adolescent conflict and parent anxiety were significant risk factors for, and parent dyadic adjustment was a significant promotive factor protecting against, Latino adolescent aggression. These were the strongest factors in the longitudinal model, suggesting that parent worry and parent-adolescent conflict often combine to create a negative home environment that adolescents aggressively act out against. At the same time, healthy marriages model prosocial behavior and warmth where interpersonal respect is paramount and aggression is not needed. In the context of this nurturing environment, adolescents are less aggressive. Prevention and intervention program designers should integrate family risk and protective factors in their plans for decreasing aggressive behavior in Latino adolescents.

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