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Authors

Cham, Heining
Gonzales, Nancy
White, Rebecca
et al.

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Pubertal Timing and Mexican-Origin Girls' Internalizing and Externalizing Symptoms: The Influence of Harsh Parenting

J. Deardorff, **H. Cham**, **NA. Gonzales**, **R.M.B. White**, **J.-Y. Tein**, **J. Wong**, and **M.W. Roosa**

Abstract

Early-maturing girls are at risk for internalizing and externalizing problems. Scarce research has examined pubertal timing and mental health among Mexican Americans, or examined the influence of parenting behaviors on these relations. This study addressed these gaps. This was a prospective examination of 362 Mexican-origin girls and their mothers using three waves of data. Measures included girls' self-report of pubertal development and girls' and mothers' report of maternal harsh parenting and daughters' mental health. Using structural equation modeling, we examined whether pubertal timing in 5th grade predicted girls' internalizing and externalizing outcomes in 10th grade. We also examined the mediating and moderating effects of harsh parenting on the relations between pubertal timing and internalizing and externalizing behaviors, as well as the influence of mothers' and daughters' nativity on these relations. Results differed depending on reporter and maternal nativity. Using daughters' report, Mexican American mothers' harsh parenting acted as a moderator. At high levels of harsh parenting, early pubertal timing predicted higher externalizing scores, while at low levels of harsh parenting, early timing predicted lower externalizing scores. For Mexican immigrant mothers, harsh parenting mediated the effects of pubertal timing on girls' internalizing and externalizing problems. There were no significant pubertal effects for mothers' report. Findings suggest that maternal harsh parenting plays a key role in the relations between early pubertal timing and behavioral and emotional outcomes among Mexican-origin girls.

Keywords

Mexican Americans; puberty; parenting; internalizing; externalizing; mediator; moderator; adolescence

Early-maturing girls are at greater risk for negative mental health outcomes compared to their on-time and later-developing peers (Mendle, Turkheimer, & Emery, 2007; Negriff & Susman, 2011). These negative outcomes include internalizing problems, such as depression, anxiety, and related symptoms (Deardorff et al., 2007; Graber, Lewinsohn, Seeley, & Brooks-Gunn, 1997; Kaltiala-Heino, Kosunen, & Rimpela, 2003), and externalizing problems, such as delinquency and conduct problems (Caspi, Lynam, Moffitt, & Silva, 1993; Lynne, Graber, Nichols, Brooks-Gunn, & Botvin, 2007). Girls' early pubertal timing has also been linked to lower self-esteem and body image issues which further influence risk for other mental health problems (Ge, Elder, Regnerus, & Cox, 2001).

Latinas are at greater risk for many of the aforementioned outcomes compared to non-Latino white youth (Knopf, Park, & Paul Mulye, 2008; Roberts, Roberts, & Chen, 1997; Twenge & Nolen-Hoeksema, 2002), yet few studies have examined associations between pubertal timing and Latina mental health. Moreover, in the U.S., Latinas of Mexican descent experience puberty earlier than non-Latino white girls (Sun et al., 2002; Wu, Medola, & Buck, 2002). Thus, an enhanced focus on pubertal timing and related outcomes among Mexican-origin girls is warranted. As such, the current study focuses specifically on Latinas of Mexican descent.

Pubertal Development and Context

Biological changes during the pubertal transition (e.g., height gain, skin changes, breast and pubic hair development, menarche) occur within family, cultural and social contexts that may profoundly influence how and whether pubertal timing is associated with negative mental health outcomes (Caspi et al., 1993; Ge, Brody, Conger, Simons, & Murry, 2002). Transactional developmental theory, the guiding framework for this study, proposes that biological and contextual factors mutually influence developmental processes (Cicchetti & Cohen, 2006). Contexts (e.g., parenting) can change in response to biological processes (e.g., puberty) and also play a role in shaping how those biological processes impact subsequent development.

Children of immigrants face unique challenges as they navigate the transition from childhood to adulthood. Often, they simultaneously manage the changes associated with puberty along with conflicting cultural values and familial stressors (Phinney, Ong, & Madden, 2000). For Mexican-origin youth in the U.S., cultural beliefs around family obligations and parenting may play a salient role in shaping parent-adolescent relationships and subsequently influence adolescent adjustment (Fuligni, Tseng, & Lam, 1999; Phinney et al., 2000). These influences are often embedded within larger contextual issues related to the immigrant experience, including limited access to social resources, financial and employment struggles, and discrimination. For immigrant families, the ability of the family system to manage these stressors and nurture the developing adolescent is particularly important to the success of the youth (Santisteban & Mitrani, 2002). Accordingly, this study takes a transactional developmental approach to examine the role of parenting behaviors in the association between Mexican-origin girls' early maturation and their adjustment, and examines whether these processes are influenced by immigrant status.

A Focus on Mexican-Origin Girls

Few studies have included Mexican-origin youth in sufficient numbers when examining puberty and mental health. Only two known studies have focused specifically on Mexican-origin youth in the U.S. (Bamaca-Colbert, Umana-Taylor, & Gayles, 2012; White, Deardorff, & Gonzales, 2012). This scarcity of research represents a serious gap in public health knowledge given that Latinos will constitute about 30% of the U.S. population by 2050 (U.S. Census Bureau, 2009) and Mexican Americans are the largest Latino subgroup in the country. The current study, therefore, focuses specifically on girls of Mexican descent.

Cultural and historical differences between the three largest Latino subgroups (Mexican, Puerto Ricans, and Cuban) in the U.S. (Marin & Marin, 1991) emphasize the importance of studying distinct subgroups rather than mixed Latino samples to improve validity of results. However, given the scarcity of studies conducted specifically with Mexican-origin girls, the literature review that follows draws on studies that include participants from multiple Latino subgroups. Few of these studies specified the number of participants who were of Mexican descent. Therefore, in the following review, we use the broader term Latino/a to describe the study participants unless the authors provided specific information about country of origin.

Pubertal Timing and the Family

In recognition of the complexity of pubertal events and the contexts within which they occur, the field has moved toward examining more sophisticated models to explain pubertal effects on mental health. Much of this research has begun to examine the potential mediating and/or moderating influences of various social and contextual variables (Negriff, Fung, & Trickett, 2011; Rudolph & Troop-Gordon, 2010; White et al., 2012). Until recently,

however, the role of the family, and in particular the role of parents, has been largely ignored.

A handful of studies have focused on family factors, and results indicate that parenting plays a role in determining whether early puberty affects girls' behaviors and emotions (Bamaca-Colbert et al., 2012; Ge et al., 2002; Ge, Conger, & Elder Jr., 1996; Haynie, 2003; Mrug et al., 2008; Negriff, Ji, & Trickett, 2011; Negriff & Trickett, 2010; Rudolph & Troop-Gordon, 2010; Westling, Andrews, Hampson, & Peterson, 2008). However, past studies have demonstrated methodological limitations. Some studies utilized age at menarche to measure pubertal timing (Ge et al., 1996; Mrug et al., 2008) although menarche occurs late in the pubertal process. Other studies began late in puberty and did not capture timing of onset (Bamaca-Colbert et al., 2012; Haynie, 2003; Rudolph & Troop-Gordon, 2010). The one known study that focused on Mexican Americans and examined parenting and girls' mental health did not measure pubertal timing, but instead examined pubertal development (pubertal status) in older girls (Bamaca-Colbert et al., 2012). Three studies were cross-sectional (Bamaca-Colbert et al., 2012; Ge et al., 2002; Mrug et al., 2008), therefore limiting causal inference, and although many were longitudinal, several followed children for only one year (Haynie, 2003; Negriff & Trickett, 2010; Rudolph & Troop-Gordon, 2010). Multiple reporters were often utilized, however, assessment of parenting behaviors often did not include both child and parent report (Bamaca-Colbert et al., 2012; Ge et al., 1996; Haynie, 2003; Westling et al., 2008). Moreover, the simultaneous examination of the potential mediating and moderating effects of parenting behaviors was not conducted.

The current study addresses these limitations. Using three waves of data from an ongoing longitudinal study of Mexican-origin youth and their families, we assessed pubertal timing and girls' internalizing and externalizing symptoms, while simultaneously examining the mediating and moderating roles of maternal parenting behavior. Given the nascent nature of the literature on puberty and parenting to date, consideration of the role of parents is warranted, and may be especially important in research with Mexican youth in light of the central role of the family in influencing adolescent behavior and mental health (Gonzales et al., 2008).

Pubertal Timing and Emotional and Behavioral Problems

The developmental readiness hypothesis posits that entering puberty earlier than one's peers may be psychologically daunting due to asynchrony between physical, cognitive and social-emotional developmental processes (Caspi & Moffitt, 1991; Ge et al., 1996). Puberty may be particularly challenging if physical maturity precedes cognitive and emotional maturation (Petersen & Taylor, 1980). Early-maturing girls attract attention from older same-sex peers and older males, which can lead to social situations that are challenging to navigate and prompt early initiation of behaviors for which the developing girl is emotionally and socially unprepared.

From a biological perspective, early maturers are exposed to higher levels of sex steroid hormones than their later-developing peers, and some of these hormonal differences persist throughout adolescence into adulthood (Apter, Reinila, & Vihko, 1989). Hormonal increases influence negative affect (Angold, Costello, & Worthman, 1998). In addition, hormonal changes may interact with contextual conditions to augment an early-maturing girl's emotional and behavioral responses to peer and family situations (Brooks-Gunn & Warren, 1989; Buchanan, Eccles, & Becker, 1992; Mendle et al., 2007). As such, multiple processes at the biological, social, and contextual level are believed to influence how a girl experiences the pubertal transition (Negriff & Susman, 2011).

Of the extant studies examining pubertal timing and internalizing problems, few included Latinas or Mexican Americans, and only a handful examined the contribution of ethnicity to these relations. Siegel et al. (1999) found that Latinas were equally vulnerable to the negative effects of early puberty on depressive symptoms when compared to other ethnic groups. In contrast, Hayward et al. (1999) found that early puberty was associated with higher depressive symptoms among Caucasian girls but not among Latinas or African American girls. Other studies have suggested that both early-maturing Latinas and non-Latino white girls are at greater risk for depressive symptoms compared to their on-time or later-maturing counterparts (Ge et al., 2001; Nadeem & Graham, 2005). One within-group study of girls in Mexico showed that early maturers had more depressive symptoms than later maturers (Benjet & Hernández-Guzmán, 2002). A longitudinal study of Mexican-origin girls found no main effect for pubertal timing but showed a significant interactive effect between timing and neighborhood context to predict depressive symptoms (White et al., 2012). Finally, a cross-sectional study of Mexican-origin girls found that advanced pubertal development was not associated with depressive symptoms, but pubertal timing (relative to same-age peers) was not examined (Bamaca-Colbert et al., 2012).

Far fewer studies have included Latinas in examinations of externalizing behaviors, and none focused on Mexican-origin youth. One study showed that African American and Latino girls who retrospectively perceived themselves to be early maturers exhibited more delinquency than those who perceived themselves as on-time or late (Lynne et al., 2007). Another study found no main effect for pubertal timing on violent behavior but showed an interactive effect with neighborhood context, such that early maturers were more likely to be violent if they lived in disadvantaged neighborhoods (Obeidallah, Brennan, Brooks-Gunn, & Earls, 2004).

The Influence of Parenting Behaviors

Consistent with transactional developmental theory, past studies support two ways in which parenting may impact an early-maturing girl's mental health. Parenting behaviors may *moderate* pubertal timing effects on outcomes, such that parents' strategies to manage youth behavior may buffer or amplify risk, or they may *mediate* the relation between pubertal timing and outcomes (i.e., operate in the causal pathway). In a recent longitudinal examination of predominantly non-Latino white youths, Rudolph et al. (2011) found that negative family environment amplified risk for depressive symptoms among early maturers. In another study, harsh and inconsistent parenting also appeared to amplify risk for externalizing behaviors among early-maturing African American girls (Ge et al., 2002). Conversely, a series of longitudinal investigations focused on African American and Latina youths did not yield significant effects when examining interactions between child maltreatment and pubertal timing (Negriff, Fung, et al., 2011; Negriff, Ji, et al., 2011; Negriff & Trickett, 2010). Early timing was directly related to delinquency and depressive symptoms, but there was no evidence for moderation.

A second way in which parenting may have an impact is that parenting behaviors may *mediate* the relation between pubertal timing and outcomes. A large body of research shows that girls' pubertal development precipitates changes in parenting behaviors, leading to more negative parent-child interactions. Researchers have long hypothesized that parent-child relationships may help explain the link between pubertal maturation and increased risk-taking behaviors (Paikoff & Brooks-Gunn, 1991; Steinberg, 1988). Only one known study has directly tested the parenting-as-mediator hypothesis. Using two waves of data from a nationally representative sample (Add Health), Haynie (2003) found that associations between pubertal timing and girls' delinquent behaviors were mediated by parent-child relationship characteristics.; early puberty lead to increased negativity, lower parental trust,

and increased autonomy, which in turn heightened risk for delinquency. Haynie also tested whether the parent-child relationship interacted with pubertal timing to predict delinquency, but found no support for moderation. However, causal inference was limited by the study design. The mean age at baseline, when pubertal timing was assessed, was 15.11 years old, which is late in the pubertal transition. Moreover, pubertal timing and parent-child relationship characteristics were assessed concurrently, therefore directionality could not be established.

In two cross-sectional studies, pubertal development and parent-adolescent conflict were examined. In a study of predominantly Mexican-origin and non-Mexican white youth, advanced puberty was associated with increased mother-adolescent conflict, however, this result held only when girls' reports of conflict were used, not mothers' reports (Molina & Chassin, 1996). Pubertal development also was associated with maternal support, but only for mothers' reports, not girls' reports. These findings suggest that it is critical to assess multiple reporters or risk losing vital information. In a cross-sectional study of Mexican-origin girls, mother-daughter conflict was examined as a mediator of pubertal development on depressive symptoms but results were not significant (Bamaca-Colbert et al., 2012). However, conclusions about pubertal timing could not be drawn from either study as both focused on maturational status among older girls, rather than relative timing of pubertal development among younger girls. Furthermore, downstream mental health outcomes were not examined in the Molina study.

Mother and Child Nativity

Research documents a protective effect of recent immigration to the United States on health outcomes, also known as the "Immigrant Paradox" (Argeseanu Cunningham, Ruben, & Narayan, 2008; Hussey et al., 2007). For families of Mexican descent, mother's country of origin may operate as an important moderating variable to consider when examining the influence of pubertal timing and parenting on adolescent outcomes. Mothers are considered the "keepers" of a Mexican family's values, particularly in regard to their daughters' developing sexuality (Jean, Bondy, Wilkinson, & Forman, 2009). Thus, in the current study, we were interested in whether mothers who were born in Mexico (hereafter referred to as Mexican immigrant mothers) respond differently to their daughters' early maturation compared to mothers born in the U.S. (hereafter referred to as Mexican American mothers) thereby affecting daughters' mental health.

Research suggests that immigrant parents tend to support cultural norms that include harsher, more punitive parenting (Calzada, Fernandez, & Cortes, 2010; Hill, Bush, & Roosa, 2003) but that these parenting strategies may not necessarily result in negative sequelae. Due to traditional gender role expectations, particularly *marianismo*, which places a high value on females remaining modest, virtuous, and sexually abstinent (Marston, 2004), as well as traditional expectations of parental authority and control (Fuligni et al., 1999; Phinney et al., 2000), increased harsh parenting may be an expected response of immigrant parents (Calzada et al., 2010; Zayas & Rojas-Flores, 2002) as their daughters mature sexually. Mothers may impose harsh punishment to protect their daughters from negative influences (e.g., attention from older males). In turn, the downstream effects of restrictive or negative parenting may not necessarily be deleterious if perceived as culturally normative. If this were the case, we would expect immigrant mothers to respond more negatively to their daughter's early development (i.e., harsher parenting) but we would not expect this to lead to subsequent negative outcomes.

However, we acknowledge that an alternative hypothesis is equally plausible. Immigrant parents often face limited access to social resources and experience linguistic and financial

challenges, as well as issues related to discrimination and acculturation, which can increase individual and familial stress (Hernandez, Denton, Macartney, & Blanchard, 2012). The responses of immigrant parents to their daughter's early maturation, which poses an additional stressor, may be harsher than that of parents who have lived in the U.S. for longer periods of time. This might lead to mental health problems among daughters of immigrant parents. Either of these hypotheses is conceivable, i.e., that mother's immigrant status might augment risk for negative outcomes among early-maturing girls or may buffer against this risk. Thus, our examination of potential differences across Mexican immigrant versus Mexican American mothers tests these competing possibilities.

We anticipated that mother's nativity, as opposed to daughter's nativity, would be of primary importance. Research shows that Mexican immigrant mothers in the U.S. tend to maintain traditional parenting expectations (Fuligni et al., 1999), therefore we expected that children of Mexican immigrant mothers (1st and 2nd generation youth) would be raised with more similar parenting practices compared later generation youth (3rd generation and beyond) (Buriel, 1993). Because a central hypothesis of the current study was that pubertal effects on emotional and behavioral outcomes would operate through or be moderated by mother's parenting, we hypothesized these processes would vary as a function of mother's immigrant status. Although our primary objective was to examine mother's nativity, we also tested the effects of child nativity secondarily given youths' own potentially stressful experiences associated with immigration and acculturation.

The Current Study

Consistent with transactional development theory, which supports that parenting may act as either a mediator or a moderator of the relations between pubertal timing and adolescent outcomes, the current study examined both simultaneously (see Figure 1). We focused on harsh parenting because it is a strong predictor of internalizing and externalizing outcomes (Conger et al., 2002; Keiley, Lofthouse, Bates, Dodge, & Pettit, 2003) and can be conceptualized as both a mediator and moderator of pubertal effects. We hypothesized that early-developing girls would be at higher risk for internalizing and externalizing outcomes in adolescence compared to their later-maturing peers and that these relations would be moderated by parenting, such that harsh parenting would amplify the negative effects of early maturation. We also expected that harsh parenting would mediate these relations, such that early timing would predict harsher parenting and lead to internalizing and externalizing problems. We also expected that harsh parenting in middle school would mediate relations between earlier harsh parenting and adolescent outcomes.

Consistent with the immigrant paradox and traditional notions of parental control, we expected that youth of Mexican American mothers would exhibit more detrimental outcomes associated with early timing and harsh parenting compared to those with immigrant mothers. However, we also acknowledged that an alternative hypothesis was equally plausible; Mexican immigrant mothers might respond more harshly to their daughters' early maturation due to multiple stressors, thus leading to harsher parenting and risk for negative outcomes.

Method

Participants

Data were from the first three waves (5th, 7th and 10th grades) of an ongoing longitudinal study examining the role of culture and context in the lives of Mexican-origin families in a large southwestern metropolitan area (Roosa et al., 2008). Participants were recruited from 5th grade rosters of schools that served ethnically and linguistically diverse communities.

Eligible families met the following criteria: (a) the target fifth grader attended a sampled school; (b) the participating mother was a biological parent, lived with the child, and self-identified as Mexican or Mexican-American; (c) the biological father was of Mexican origin; (d) the target child was not severely learning disabled; and (e) no step-father or mother's boyfriend was living with the child (unless the boyfriend was the biological father of the target child).

The original sample included 749 children (749 mothers, 467 fathers), 366 (48.7%) of whom were female. Four girls were 12 years old at baseline and were excluded from analyses because of their advanced age at pubertal assessment. The final sample included 362 mothers and their daughters. Of these 362 families, 344 were re-interviewed in 7^{th} grade and 311 in 10^{th} grade (5.0% and 14.1% missing, respectively). Missing data in 7^{th} and 10^{th} grades were handled with multiple imputation, therefore, analyses were based on 362 mothers and their daughters.

Procedure

Informed consent and assent were obtained from parents and children, respectively. Computer Assisted Personal Interviews were completed separately with each participating family member by trained interviewers in different locations at families' homes. Interviewers read each question and possible responses aloud in participants' preferred language. Families were paid $45, $50 and $55 per participating family member at the first, second and third waves, respectively. This study was approved by the university's institutional review board.

Measures

Pubertal timing—Girls' self-report of pubertal development was measured using the Pubertal Development Scale (PDS) (Petersen, Crockett, Richards, & Boxer, 1988), a widely used non-invasive measure with established reliability and validity (Dorn, Dahl, Woodward, & Biro, 2006). The PDS provides a composite measure based on height, weight, body hair, skin change, menarche, and breast development, using a four-point scale (1 = no to 4 = growth seems completed; menarche item: 1 = no and 4 = yes). For example, *"In the past three months, would you say that you had a growth spurt in height, that is, you grew much more than usual?".* Consistent with past research, the pubertal timing variable was created by averaging the six PDS items and then standardizing within each age; higher scores indicated earlier maturation (Ge, Brody, Conger, & Simons, 2006). We also computed pubertal status in 5^{th} grade by averaging the items (but not standardizing them). Given the young age of our sample, pubertal timing was strongly correlated with pubertal status among U.S. born ($r = 0.98$) and Mexico born ($r = 0.99$) children. Therefore, we focused on pubertal timing for the purposes of this study. (Note: all models also were run using pubertal status and results were equivalent.)

Maternal harsh parenting—Mothers and children separately completed an eight-item subscale from the Children's Report of Parent Behavior Inventory - Revised (CRPBI-R) (Knight, Virdin, & Roosa, 1994; Schaefer, 1965), which included items such as "*Your mother screamed at you when you did something wrong,"* and mothers' self-report version of the same items. Response choices were based on a five-point scale (1 = almost never or never to 5 = almost always or always) assessing behaviors during the past three months. The harsh parenting score was computed by averaging responses from the eight items. Internal consistencies for child report were $\alpha = 0.75$ (5^{th} grade) and $\alpha = 0.78$ (7^{th} grade), and for mother report were $\alpha = 0.68$ (5^{th} grade) and $\alpha = 0.69$ (7^{th} grade). Past research has shown equivalence across English and Spanish languages for the CRPBI (Nair, White, Knight, & Roosa, 2009).

Internalizing and externalizing symptoms—Mothers and children separately completed the Diagnostic Interview Schedule for Children (C-DISC – 4.0) (Bravo et al., 2001; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), which is based on the Diagnostic Statistical Manual, Fourth Edition. Symptoms were assessed based on the past 12 months. Internalizing symptoms summed anxiety, major depression and dysthymia symptoms. Externalizing symptoms summed conduct problems and oppositional defiant symptoms. For children's report of internalizing and externalizing symptoms, scores ranged from (0 to 67) and (0 to 35) across 5^{th} to 10^{th} grade, respectively. For mothers' report of internalizing and externalizing symptoms, scores ranged from (0 to 68) and (0 to 30) across 5^{th} to 10^{th} grade, respectively.

Nativity—At baseline, mothers reported on their nativity and their daughters' nativity. We refer to individuals born in the U.S. as "Mexican American" and those born in Mexico as "Mexican immigrant" although we acknowledge that this may not be how participants would necessarily define themselves. There were 263 Mexican American daughters, 99 Mexican immigrant daughters, 87 Mexican American mothers and 275 Mexican immigrant mothers.

Covariates—Covariates were assessed at baseline and were included in all models: child's age (in months), mother's highest level of education (less than high school, high school, college or higher), annual family income (from 1 to 20 = < $5,000 to > $95,001 in $5,000 increments).

Analytic Strategy

Figure 1 illustrates the theoretical model, which includes the mediation and moderation effects of pubertal timing × harsh parenting in 5^{th} grade on internalizing and externalizing symptoms in 10^{th} grade, through harsh parenting in 7^{th} grade. The direct moderation effects on internalizing and externalizing symptoms in 10^{th} grade were also included. Mothers' reports of harsh parenting, internalizing and externalizing symptoms were examined in one model; children's reports on those same variables were examined in a separate model. Children's age and two socioeconomic status (SES) variables (mother's education level, annual family income) in 5^{th} grade were included as covariates of harsh parenting in 7^{th} grade and internalizing and externalizing symptoms in 10^{th} grade. Internalizing and externalizing symptoms in 5^{th} grade were included as covariates of internalizing and externalizing symptoms in 10^{th} grade. We fit the hypothesized model separately by mothers' nativity and, secondarily, children's nativity.

Missing data were handled using multiple imputation, which assumes data aremissing completely at random or missing at random(Enders, 2010). The missing data rate of the analyzed variables and auxiliary variables ranged from 0% to 13.8% (median = 2.62%). Little's missing completely at random test (Little, 1988) showed that the missing data patterns did not differ from the complete data pattern; therefore, the assumption of missing completely at random was not violated. We conducted multiple imputation using IVEware Version 0.2 (Raghunathan, Solenberger, & Van Hoewyk, 2010). Pubertal status in 5^{th} and 7^{th} grade, pubertal timing in 7^{th} grade, internalizing and externalizing symptoms in 7^{th} grade were included as auxiliary variables. Pubertal timing × harsh parenting was included in the imputation process (von Hippel, 2009). The imputation process was conducted separately across Mexican immigrant and Mexican American children and mothers (Enders & Gottschall, 2011; von Hippel, 2009). Thirty datasets were imputed.

M*plus* 6.12 (Muthén & Muthén, 1998–2010) was used to test the hypothesized path models using the imputed datasets. Because the internalizing and externalizing variables are count

variables, Poisson regression was used. Maximum likelihood estimation with robust standard errors using a sandwich estimator was used. First, multi-group SEM was conducted to examine the equivalence of the hypothesized model across mothers' (or daughters') nativity using the multivariate Wald test. If results were significant, then the path model was presented separately by nativity, otherwise nativity was ignored. To explore any significant moderation effects, we probed the simple effects of pubertal timing on harsh parenting in 7th grade or on internalizing or externalizing symptoms in 10th grade at the mean and +/−1 standard deviation of the mean as average, high, and low levels of harsh parenting in 5th grade (Aiken & West, 1991), respectively. If none of the combined moderation and mediation effects or the direct moderation effects were significant, then the models were simplified by omitting the moderation effects. If some but not all of the combined moderation and mediation effects and/or the direct moderation effects were significant, then the non-significant moderation paths were constrained to zero.

According to Baron and Kenny (1986), three conditions are necessary to establish mediational pathways: (a) the total effect of the independent variable to the outcome must be significant, (b) the independent variable should predict the hypothesized mediator, and (c) the mediator should predict the outcomes after controlling for the independent variable. However, there are limitations related to these causal steps (MacKinnon, 2008). MacKinnon and colleagues showed that the most important conditions for mediation are conditions (b) and (c) above (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002) and that mediation effects for Poisson distributed count outcomes are more properly estimated as the product of path coefficients, e.g., product of the path from the independent variable and the path from the mediator to the outcome variable (Coxe & MacKinnon, 2010). We followed these guidelines and also calculated the distribution of product confidence intervals (CI) for mediation effects using RMediation software (Tofighi & MacKinnon, 2011).

Results

Sample Characteristics

Children's ages in 5th grade ranged from 9 to 11 ($M = 10.4$, $SD = 0.5$). Mother's mean age was 36.0 ($SD = 5.7$) years. Maternal educational attainment varied based on nativity [$\chi^2(2) = 43.5$, $p < 0.001$]. For mothers born in Mexico, the highest education level was more likely to be less than high school (56%) compared to those born in the U.S. (16%). Mothers born in the U.S. were more likely to have completed high school (36%) or college or higher (48%) as their highest education, compared to those born in Mexico (high school = 22% and college or higher = 22%). Across the three waves (5th, 7th, and 10th grades), 70%, 71%, 68% of mothers completed interviews in Spanish. For daughters, 18%, 15%, 5% completed interviews in Spanish.

Attrition analyses compared baseline demographic and study variables between families who participated at all waves and those who did not participate in wave 2 or wave 3. Differences were found in children's nativity [$\chi^2(1) = 8.02$, $p = 0.01$] and mother's nativity [$\chi^2(1) = 4.83$, $p = 0.03$]. Mexican American participants were more likely to complete follow up interviews (mothers' completion: 87.8% Mexican American versus 75.8% Mexico immigrant; children's completion: 92% Mexican American versus 82.2% Mexico immigrant).

Tables 1 and 2 show the means, standard deviations, and zero-order correlations of study variables. Pubertal timing in 5th grade showed either weak or no associations with internalizing and externalizing symptoms in 10th grade, regardless of reporter or nativity. Mexican immigrant girls reported higher internalizing and externalizing symptoms in 10th grade compared to their Mexican American counterparts and exhibited higher variability in

their symptom scores. There were no apparent differences in symptoms scores based on mother nativity.

Child Report Models

For models using child report of harsh parenting and internalizing and externalizing symptoms, the multivariate Wald test showed that the paths of the combined mediation and moderation effects and the direct effects of pubertal timing on internalizing and externalizing symptoms in 10th grade were significantly different across mother's nativity [$\chi^2(11) = 48.85$, $p < 0.001$] but not children's nativity [$\chi^2(11) = 16.00$, $p = 0.14$]. Thus, we reported Mexican American (Figure 2a) and Mexican immigrant (Figure 2b) mothers' results separately.

Harsh parenting as a moderator—For daughters with Mexican American mothers (Figure 2a), only the direct moderation effect on externalizing symptoms in 10th grade was significant ($b = 0.59$, $SE = 0.13$, $p < 0.001$) and this effect was not mediated by harsh parenting in 7th grade (effect = −0.04, 95% CI = [−0.13, 0.02]). Therefore, non-significant moderation effects were constrained to zero. Figure 3 illustrates the pattern of this moderation effect. At high levels of harsh parenting, there was a positive association between pubertal timing and externalizing symptoms, such that girls with earlier pubertal timing (note: higher scores indicate earlier timing) exhibited higher levels of externalizing symptoms. At low levels of harsh parenting, there was a negative association between pubertal timing and externalizing symptoms, such that girls with earlier pubertal timing had lower externalizing symptoms. For daughters with Mexican immigrant mothers, no moderation effects were significant (Figure 2b).

Harsh parenting as a mediator—For daughters with Mexican American mothers (Figure 2a), pubertal timing was not associated with harsh parenting in 7th grade ($b = -0.04$, $SE = 0.07$, $p = 0.55$) and the direct effect of pubertal timing in 5th grade on internalizing symptoms in 10th grade was not significant ($b = -0.003$, $SE = 0.08$, $p = 0.97$). Harsh parenting did not act as a mediator between pubertal timing and outcomes (effect = −0.01, 95% CI = [−0.08, 0.02]).

For daughters with Mexican immigrant mothers (Figure 2b), pubertal timing was significantly related to harsh parenting in 7th grade ($b = 0.26$, $SE = 0.06$, $p < 0.01$), which in turn was significantly related to internalizing ($b = 0.30$, $SE = 0.08$, $p < 0.001$) and externalizing ($b = 0.43$, $SE = 0.10$, $p < 0.001$) symptoms in 10th grade. Harsh parenting acted as a mediator of the effects of pubertal timing on internalizing (effect = 0.05, 95% CI = [0.01, 0.09]) and externalizing symptoms (effect = 0.07, 95% CI = [0.02, 0.13]). Harsh parenting in 7th grade also mediated the effects of harsh parenting in 5th grade on internalizing symptoms (effect = 0.08, 95% CI = [0.03, 0.13]) and externalizing symptoms (effect = 0.11, 95% CI = [0.05, 0.18]) in 10th grade. Harsh parenting in 5th grade had a direct effect on externalizing problems in 10th grade ($b = -0.16$, $SE = 0.08$, $p = 0.04$). Pubertal timing was not directly related to internalizing ($b = 0.05$, $SE = 0.05$, $p = 0.35$) or externalizing symptoms ($b = -0.03$, $SE = 0.09$, $p = 0.76$) in 10th grade.

Mother Report Models

For mother report, the combined mediation and moderation effects and the direct effects of pubertal timing on the symptom variables in 10th grade were not significantly different across mother's nativity [$\chi^2(11) = 15.25$, $p = 0.17$] nor children's nativity [$\chi^2(11) = 6.50$, $p = 0.84$]. Therefore, the combined model, which ignored nativity, was examined (Figure 4).

Harsh parenting as a moderator—No combinations of mediation and moderation or direct moderation effects were significant. Thus, the model was reduced by omitting moderation.

Harsh parenting as a mediator—As shown in Figure 4, daughters' pubertal timing in 5th grade was not significantly related to harsh parenting in 7th grade ($b = 0.004$, $SE = 0.03$, $p = 0.88$). Harsh parenting did not act as a mediator between pubertal timing and symptoms (effect for internalizing = 0.002, 95% CI = [−0.03. 0.04]; effect for externalizing = 0.003, 95% CI = [−0.04, 0.05]). However, harsh parenting in 5th grade was significantly related to harsh parenting in 7th grade ($b = 0.57$, $SE = 0.05$, $p < 0.001$), and in turn, harsh parenting in 7th grade predicted internalizing ($b = 0.59$, $SE = 0.25$, $p < 0.05$) and externalizing ($b = 0.79$, $SE = 0.29$, $p < 0.01$) symptoms in 10th grade. Harsh parenting in 7th grade mediated the associations between harsh parenting in 5th grade and internalizing symptoms (effect = 0.33, 95% CI = [0.05, 0.62]) and externalizing symptoms (effect = 0.45, 95% CI = [0.13, 0.78]) in 10th grade. The direct effects of pubertal timing in 5th grade on internalizing ($b = -0.03$, $SE = 0.08$, $p = 0.71$) and externalizing ($b = 0.04$, $SE = 0.08$, $p = 0.60$) symptoms in 10th grade were not significant.

Discussion

This is the first known study to examine maternal harsh parenting as both a mediator and a moderator to explain relations between girls' pubertal timing and their externalizing and internalizing outcomes. This longitudinal study builds on the relatively few past studies that have examined pubertal timing effects among Latinas and represents one of the first known studies to focus exclusively on Mexican-origin youth, a large and rapidly growing portion of the United States population. Contrary to prior studies conducted with other ethnic groups or with ethnically diverse samples, early pubertal timing did not show consistent negative effects. Rather, accordant with developmental transactional theory, results differed depending on conditions within the family and cultural context, specifically harsh parenting and maternal immigrant status, and the interplay among biology (i.e., pubertal maturation) and context over time.

Mothers' harsh parenting behavior played an important role in determining whether and how pubertal timing impacted girls' outcomes. In the absence of the moderating and mediating roles of harsh parenting, there were no significant effects of early timing for this sample. Only when harsh parenting was included, did pubertal timing influence adolescent outcomes. Moreover, girls' perceptions of parenting appeared to be important. When child report was used, harsh parenting significantly influenced the relationship between early timing and girls' symptoms. Conversely, there were no significant effects when mother report was used.

Harsh Parenting as a Moderator of Pubertal Effects

For daughters of Mexican American mothers, pubertal timing interacted with child report of harsh parenting to predict externalizing symptoms in adolescence. These findings confirm and extend past research documenting a "contextual-amplification" effect, whereby harsh and inconsistent parenting augment risk for violent behavior among early-maturing girls (Ge et al., 2002). Our findings differed from previous studies of amplification that have shown pubertal timing effects on externalizing outcomes to be consistently negative (Ge et al., 2002). While we corroborated amplification effects at high levels of harsh parenting, we also documented protective effects when early-maturing girls perceived their Mexican American mothers to engage in low levels harsh parenting during the elementary school years. Low harsh parenting conferred resilience for these girls in terms of subsequent behavioral

problems in adolescence. Perhaps these adolescents received essential support and positive guidance needed to not only overcome risk processes associated with early puberty, but also to benefit from their early development (e.g., attainment of valued status associated with early maturation, assuming more responsibilities and autonomy). As a result, for these youth, early puberty was not detrimental.

Early-maturing daughters of Mexican American mothers were vulnerable to amplification, while daughters of immigrant mothers were not. This supports past research suggesting that mothers' U.S. nativity may negatively affect their daughters' outcomes (Pasch et al., 2006). However, it should be noted that we did not find differences in daughters' symptom levels in 10^{th} grade based on mothers' nativity (Table 2). Rather, Mexican immigrant girls reported higher internalizing and externalizing problems in 10^{th} grade compared to Mexican American girls (Table 1). Mexican immigrant youth may exhibit elevated emotional and behavioral problems due to numerous stressors related to the immigrant experience.

While our findings were somewhat consistent with past research on conduct problems, we did not find significant effects for internalizing symptoms. Recent research has shown that negative family factors (i.e., maternal depression, family stress) augment risk for depression among early-maturing girls and boys (Rudolph & Troop-Gordon, 2010). Contrary to those findings, in our sample, harsh parenting did not exhibit a similar pattern of amplification.

Harsh Parenting as a Mediator of Pubertal Effects

For daughters of Mexican immigrant mothers, the role of parenting was also important but in a different sense. Child report of harsh parenting mediated the relations between pubertal timing and self-reported internalizing and externalizing outcomes in adolescence. These findings lend further support to the notion that girls' perceptions of their mothers' parenting play a key role in determining whether and how early pubertal timing confers risk for negative outcomes over time. Our findings confirm and extend past research with Mexican-origin youth showing that girls' perceive increases in conflict with their mothers during the pubertal transition (Molina & Chassin, 1996) and that increased negativity in the parent-adolescent relationship, as reported by adolescents, mediates the relation between pubertal timing and problem outcomes (Haynie, 2003). We extended this research by examining internalizing symptoms, as well as externalizing symptoms, and by focusing on a specific and modifiable parenting behavior, harsh parenting.

Past quantitative and qualitative studies suggest that more traditional Mexican-origin parents engage in harsher parenting strategies compared to less traditional parents, and that this approach may be considered normative given families' views of parental authority (Hill et al., 2003; Santisteban, Muir-Malcolm, Mitrani, & Szapocznik, 2002). Studies have also shown that aspects of harsh parenting are not necessarily detrimental for children when they are consistent with cultural norms and expectations (Lansford et al., 2005). Although we did not measure cultural normativeness, our significant mediation results for Mexican immigrant mothers did not support this notion or our related hypothesis, which posited that mothers' immigrant status would be protective against the negative effects of harsh parenting. Instead, our findings lent support for the alternative hypotheses, such that when girls perceived their Mexican immigrant mothers to become increasingly harsh in response to their early development, this led to detrimental effects.

These findings for Mexican immigrant mothers may reflect *real* changes in harsh parenting or *perceived* changes on the part of early-maturing girls. During emerging adolescence, mothers often relinquish some control over their daughters and reduce their harsh parenting, which would be developmentally appropriate. It is plausible that Mexican immigrant mothers increase their harsh parenting to protect their early-maturing daughters from related

dangers, such as risk for pregnancy and substance use, which would be consistent with adherence to traditional values (Calzada et al., 2010; Hill et al., 2003; Santisteban et al., 2002). Alternatively, harsher parenting among immigrant mothers may result from stress related to immigration and acculturation (Halgunseth, Ispa, & Rudy, 2006), and early maturation may represent yet another stressor that increases parental harshness. Either way, girls' perceptions of their mothers' harsh parenting appear to confer risk for negative outcomes among early developers.

If true changes in mothers' behaviors occurred in response to puberty, we would have expected pubertal timing to directly influence harsh parenting at 7th grade across *both* reporters. We found no main effect for pubertal timing on mother's report of harsh parenting and no mediation, suggesting that daughters of Mexican immigrant mothers were more likely to show puberty-related shifts in their *evaluations* of harsh parenting rather than mothers actually shifting their behaviors in response to their daughters' development. Moreover, mean levels of girls' report of harsh parenting did not generally increase over time for the sample. Thus, as girls mature sexually and seek greater autonomy, they may find their Mexican immigrant mothers' parenting strategies, despite being stable over time, as overly strict and therefore in conflict with their quest for independence. This notion is consistent with previous research with Mexican-origin girls and their mothers showing that advanced pubertal development can lead to discrepant autonomy expectations and mother-daughter conflict (Bamaca-Colbert et al., 2012).

Qualitative research with Mexican-origin families supports the notion that daughters may respond to their own pubertal development quite differently from their mothers (Jean et al., 2009). Jean and colleagues (2009) found that mothers, rather than fathers, are responsible for communicating with their daughters about their changing bodies during puberty, and that mothers and daughters exhibited discrepant attitudes towards these pubertal changes. While mothers focused on the negative aspects of puberty, their daughters largely perceived puberty as a positive transition because it signals opportunities for increased independence and autonomy. Although girls reported having positive relationships with their mothers, they did not feel comfortable talking to them about their physical development or about boys. These qualitative findings suggest that communication around issues of physical and sexual development may be particularly daunting for early-maturing Mexican-origin girls given their positive perceptions of the pubertal transition and their mothers' fears. As such, girls who mature early may perceive their Mexican immigrant mothers' behaviors as unnecessarily controlling, just as they are beginning to desire and assert more independence and autonomy. This may explain our results showing that maternal harsh parenting acted as a mediator in the relation between early timing and related outcomes. However, this interpretation should be viewed with caution given potential method variance in the child-report models, which may have accounted for significant findings.

Harsh Parenting (in Middle School) as a Mediator of Earlier Harsh Parenting Effects

Consistent with past research, we found that maternal harsh parenting in 7th grade mediated the relation between harsh parenting in 5th grade and internalizing and externalizing outcomes in 10th grade. These findings were consistent across child report (for Mexican immigrant mothers) and mother report. Harsh parenting in the elementary school years appears to uniquely predict negative downstream outcomes for girls over and above the timing of their pubertal development. Given that the transition to middle school marks important developmental changes and related challenges for girls, including changes in academic and peer contexts as well as advancing physical maturation and rapid brain development, mothers appear to play a critical role in determining how their daughters fare during this transition. Our findings confirm past research indicating that early intervention to reduce harsh parenting is critical (Amato & Fowler, 2002; Conger et al., 2002; Gershoff,

2002; Gonzales et al., 2012; Keiley et al., 2003). The initiation of prevention efforts prepubertally that focus on the family, and sustained intervention efforts across the pubertal transition, may be particularly important to the prevention of negative downstream emotional and behavioral outcomes among Mexican-origin adolescents.

Limitations

It is possible that, for girls who matured prior to baseline, mothers may have already adjusted their parenting behaviors in response to their daughters' emerging physical maturation. We were not able to capture parenting responses initiated prior to the first wave of our study. Moreover, family quality and parent-child interactions in early childhood (prepubertally) have been linked to girls' pubertal timing (Belsky, Houts, & Fearon, 2010; Belsky, Steinberg, Houts, Halpern-Felsher, & Network, 2010; Ellis, Shirtcliff, Boyce, Deardorff, & Essex, 2011), therefore harsh parenting in early years may have contributed to pubertal development and also influenced subsequent parenting and behavioral/emotional outcomes. In addition, we cannot assume that the pubertal timing effects evidenced here will extend into later adolescence or adulthood. Research suggests that the effect of pubertal timing on depression wanes with age (Angold et al., 1998; Natsuaki, Biehl, & Ge, 2009). As our sample becomes older, we will extend these analyses to examine longer-term effects on behavioral and emotional outcomes.

Attrition rates differed depending on children's and mother's nativity, which may limit generalizability. Mexican Americans were more likely to complete follow up interviews compared to Mexican immigrants. One probable reason for the differential attrition rates was marked changes in local policy, which occurred during the course of the study, aimed at undocumented immigrants. In addition, we focused on linear effects of pubertal timing. Research with Mexican-origin girls suggests that pubertal status and maternal support exhibit a curvilinear association, whereby mid-pubertal girls experience less support compared to pre- and post-pubertal girls (Molina & Chassin, 1996). Non-linear relationships and trajectories of pubertal effects will be examined as girls in our sample grow older and a sufficient number of girls are post-pubertal, as will pubertal tempo (or rate of progression through puberty).

Another limitation of the current study was the exclusive use of girl's report of pubertal development, which may be confounded with self-esteem and related vulnerability for internalizing symptoms (Stice, Presnell, & Bearman, 2001; Williams & Currie, 2000). This also may have resulted in method variance, thus accounting for our significant results in child report models. Finally, this investigation focused exclusively on mothers because of the importance that they play in Mexican American families in terms of upholding cultural norms and managing their daughters' emotions and behaviors during the pubertal transition (Jean et al., 2009). Fathers are likely to play an important but different role, and thus should be a focus for future research.

Despite limitations this study had numerous strengths. In addition to a strong prospective study design that spanned 5 years of development with good retention for a hard-to-reach population, we utilized advanced analytic methods to examine the potential moderating and mediating roles of harsh parenting, simultaneously. Other strengths were the use of both child-and mother-report measures of harsh parenting and internalizing and externalizing symptoms, and the use of a standardized diagnostic measurement tool to assess symptomology. Moreover, whereas many studies of Mexican-origin families have focused on lower-income, English-speaking participants, our study was unique in its strong representative sampling plan, which resulted in socioeconomic and linguistic diversity, as well as the inclusion of adequate numbers of Mexican American and Mexican immigrant children and mothers. As such, we were able to examine the contributions of child and

mother nativity. Power analyses showed that we had power > .80 to detect all of the significant regression coefficients mentioned above with one exception, the path from harsh parenting in 5th grade to externalizing in 10th grade for the child report model among Mexican immigrant mothers. In general, research shows it is difficult to detect moderation effects (McClelland & Judd, 1993); however, most of our findings, including the interaction effect of pubertal timing by harsh parenting in 5th grade to externalizing symptoms in 10th grade (Figure 2a), had moderate to large effects.

Future Directions

Our findings were consistent with transactional developmental theory, which supports the notion that multiple factors contribute to how girls fare during the pubertal transition, and not all early-maturing girls experience behavioral and emotional problems in adolescence. The documented risks associated with early maturation are likely dependent on a complex interplay of social, familial, cultural and contextual factors. Of these factors, the unique and combined influences of parenting and nativity have been previously understudied. This study represents a first step to understanding early pubertal timing, mother-child interactions, and mental health outcomes among Mexican-origin adolescents.

Future research should consider whether mother-daughter acculturation dissonance exacerbates the already challenging intergenerational issues associated with early pubertal development (Szapocznik & Kurtines, 1993). Research suggests that during the pubertal transition, immigrant parents and their adolescent children often hold differing views of behavioral autonomy and parental authority (Bamaca-Colbert et al., 2012; Phinney et al., 2000). Thus, the examination of pubertal timing effects and mother-child acculturation dissonance mark a next logical step in this research.

Future studies also should include positive parenting behaviors, which may be protective for early-maturing Mexican-origin girls (Haynie, 2003; Mrug et al., 2008; Westling et al., 2008). Moreover, research indicates that body dissatisfaction is an important mediator of the relation between pubertal timing and girls' internalizing outcomes (Ge et al., 2001; Stice et al., 2001). With the obesity epidemic disproportionally affecting Mexican-origin youth in the U.S. (Flegal et al., 2010), it is important to examine how families respond to concerns about overweight in relation to their daughters' pubertal development and potentially influence girls' perceptions of and reactions to their developing and growing bodies (Jean et al., 2009). Finally, further research with Mexican-origin adolescents that examines the interactive and mediating effects of peers, including youths' involvement in romantic relationships, on mental health is warranted.

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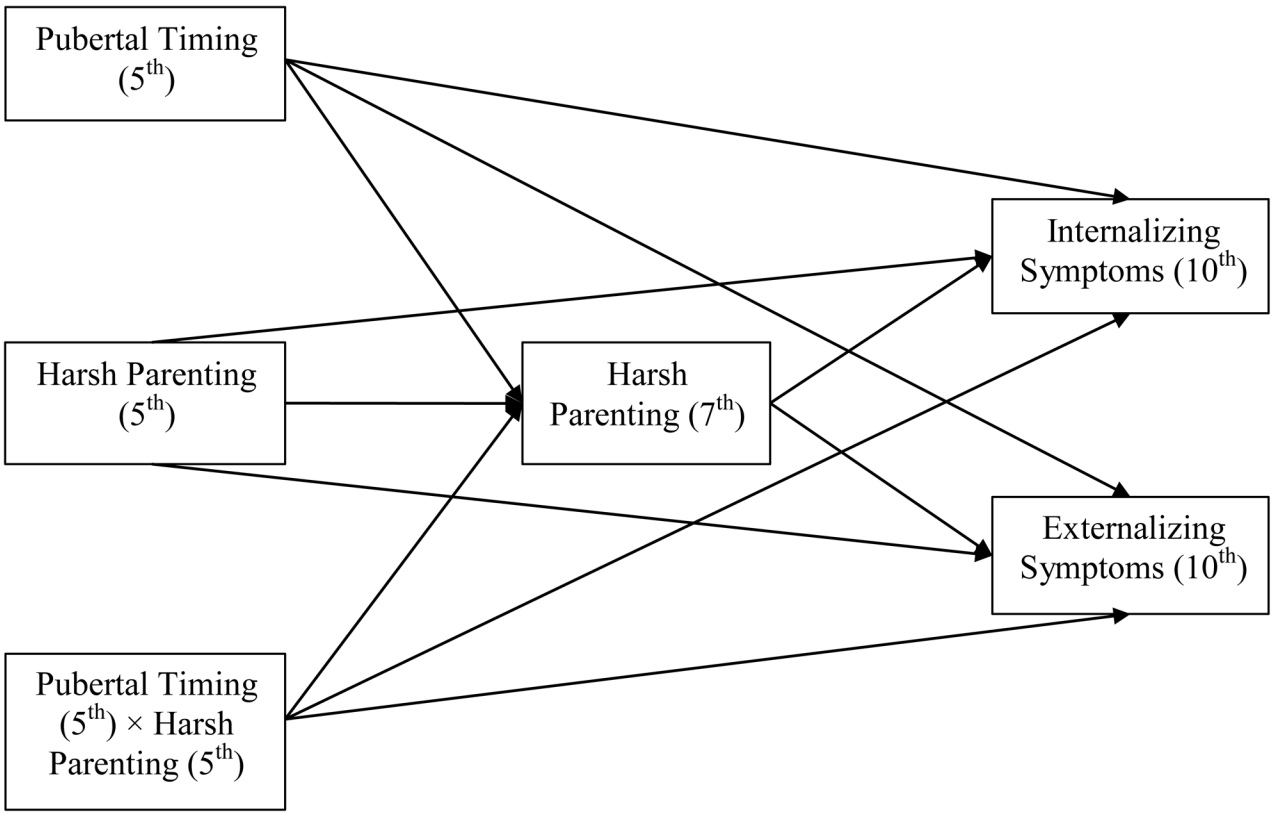

Figure 1.
Theoretical Model of the Mediation and Moderation Effects of Pubertal Timing and Harsh Parenting on Internalizing and Externalizing Symptoms
Note. Covariances among predictors in 5th grade were included in the testing models but not shown in this figure.

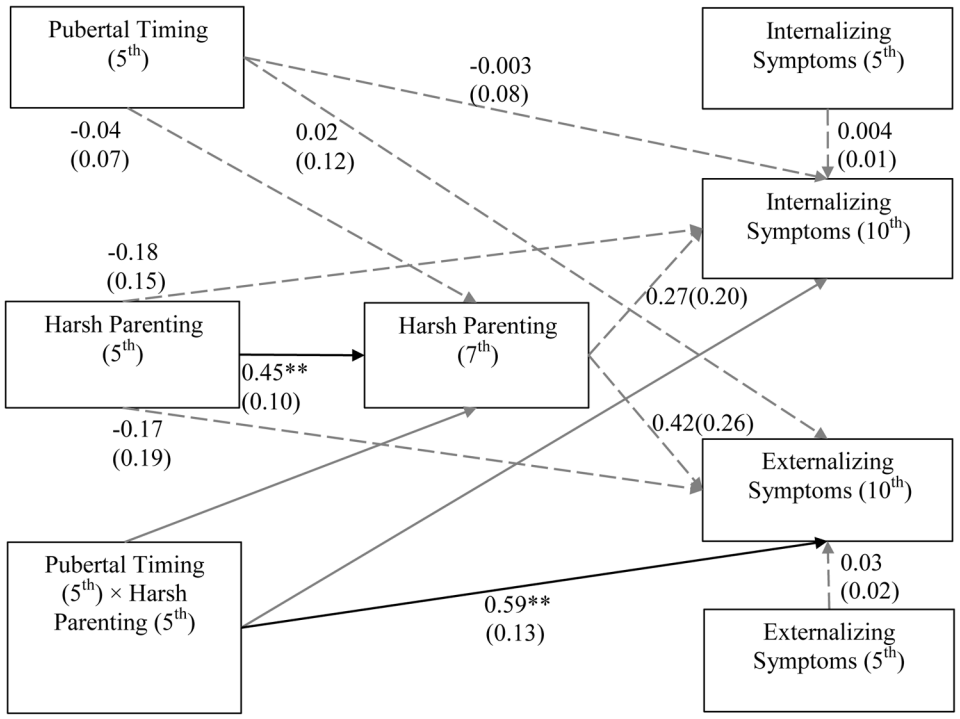

Figure 2a

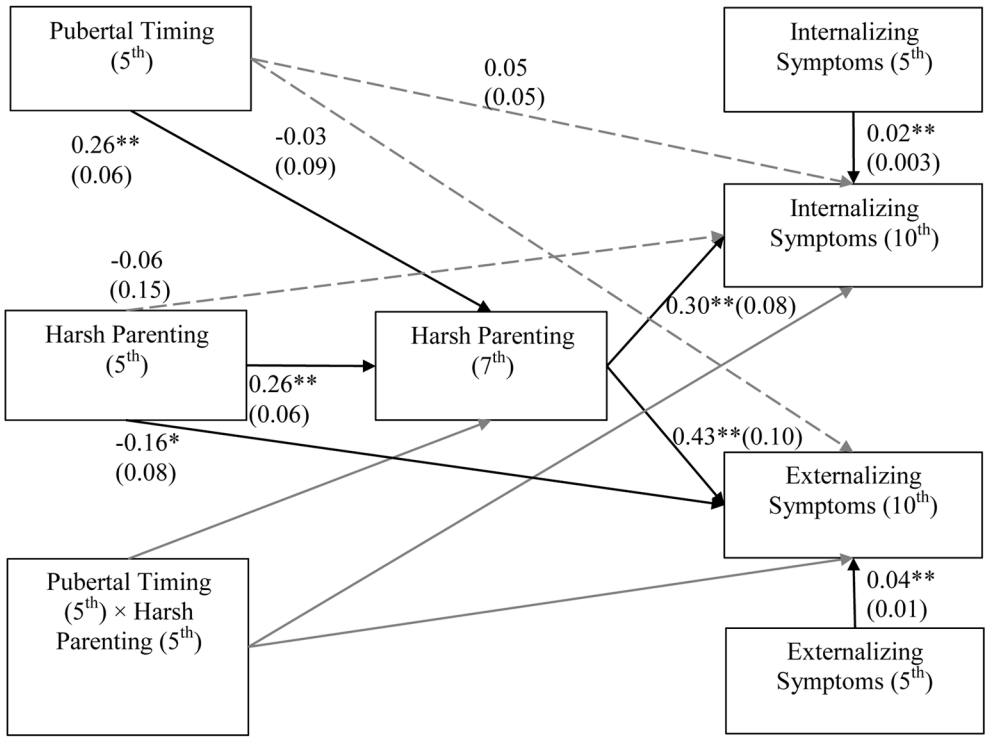

Figure 2b

Figure 2.

Figure 2a. Results of the Path Model of Pubertal Timing and Harsh Parenting on Internalizing and Externalizing Symptoms, among Mexican American Mothers (Child Report)

Note. Paths from three covariates (child's age in 5th grade, family income, and mother's education level) to harsh parenting (7th grade), internalizing symptoms (10th grade), and externalizing symptoms (10th grade) were not displayed. Greysolid lines were paths constrained to zero. Dashed grey lines were non-significant paths. Numbers in parentheses were standard errors.

* $p < 0.05$, ** $p < 0.01$.

Figure 2b. Results of the Path Model of Pubertal Timing and Harsh Parenting on Internalizing and Externalizing Symptoms, among Mexican Immigrant Mothers (Child Report)

Note. Paths from three covariates (child's age in 5th grade, family income, and mother's education level) to harsh parenting (7th grade), internalizing symptoms (10th grade), and externalizing symptoms (10th grade) were not displayed. Greysolid lines were paths constrained to zero. Dashed grey lines were non-significant paths. Numbers in parentheses were standard errors.

* $p < 0.05$, ** $p < 0.01$.

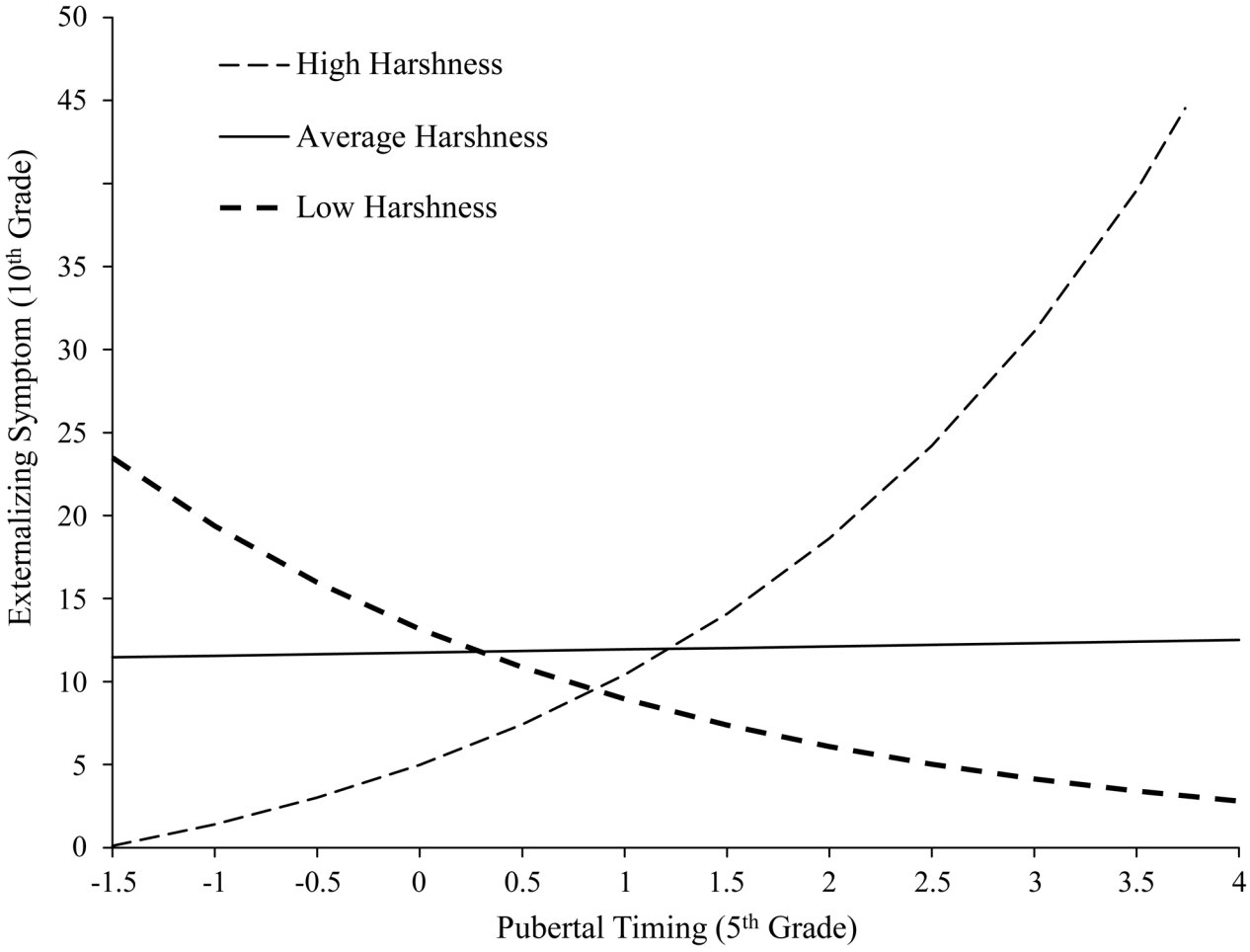

Figure 3.

Illustration of the Direct Moderation Effect of Pubertal Timing and Harsh Parenting in 5th grade on Externalizing Symptoms in 10th grade, among Mexican American Mothers (Child Report)

Note. High, average and low harshness refer to one standard deviation above the mean, at the mean, and one standard deviation below the mean of harsh parenting in 5th grade. Higher scores indicate earlier pubertal timing. The externalizing symptom is in the raw metric.

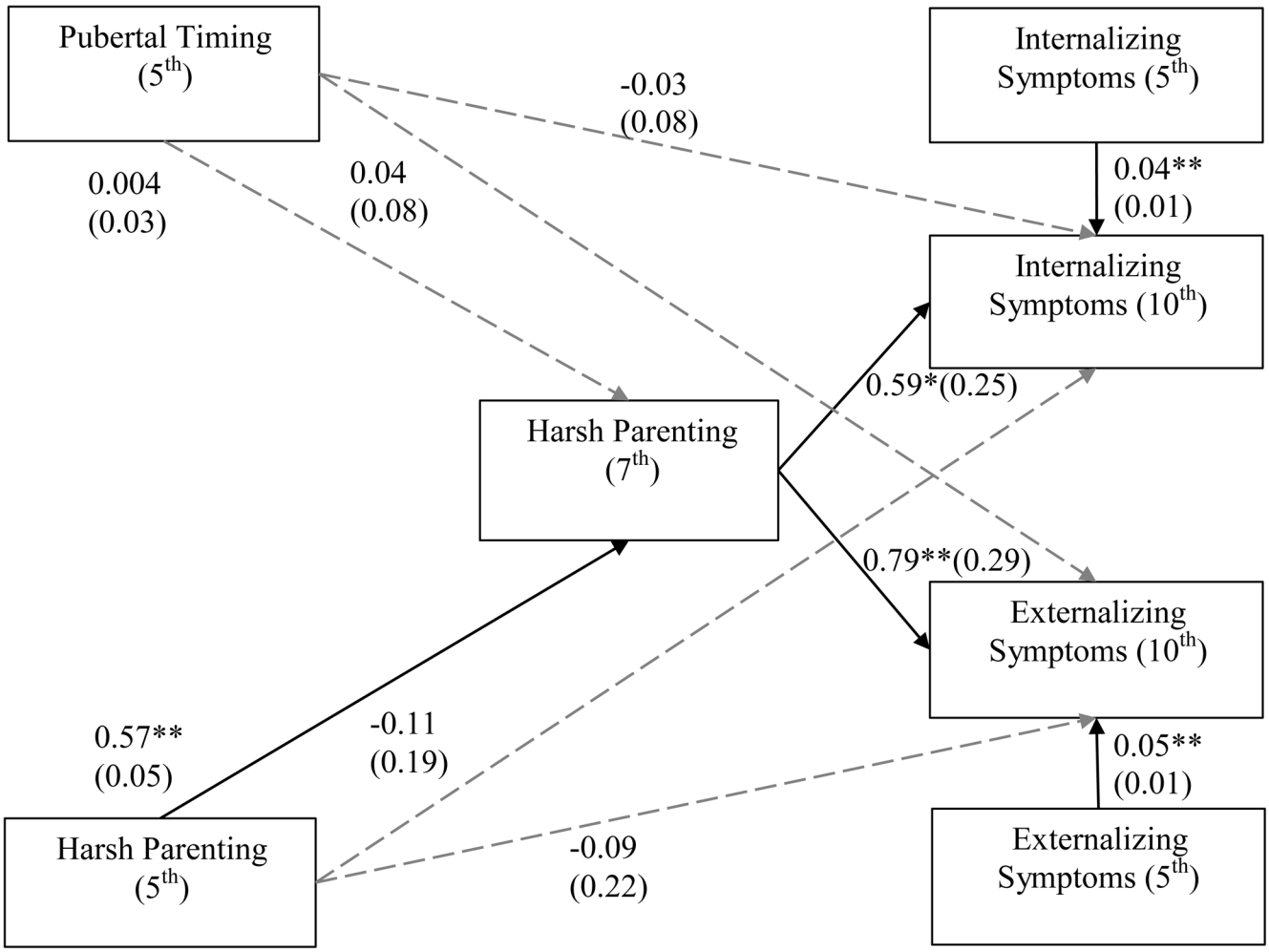

Figure 4.

Results of the Path Model of Pubertal Timing and Harsh Parenting on Internalizing and Externalizing Symptoms (Mother Report)

Note. Paths from three covariates (child's age in 5th grade, family income, and mother's education level) to harsh parenting (7th grade), internalizing symptoms (10th grade), and externalizing symptoms (10th grade) were not displayed. Greysolid lines were paths constrained to zero. Dashed grey lines were non-significant paths. Numbers in parentheses were standard errors.

* $p < 0.05$, ** $p < 0.01$.

Table 1

Means, standard deviations and zero-order correlations of studyvariables (bychildren's nativity)

Variable name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age (5^{th})		−0.04	0.01	−0.01	−0.07	−0.06	−0.03	0.01	−0.03	−0.07	−0.02	−0.07	−0.18	0.05	−0.03	−0.06	−0.02
2. Family Income (5^{th})	0.12		−0.35	0.08	−0.04	0.08	0.07	−0.08	−0.07	−0.04	0.10	−0.04	−0.05	0.08	0.08	−0.03	−0.01
3. Mom's Edu. 1 (5^{th})	0.02	−0.13		−0.51	−0.03	0.01	0.02	0.01	−0.03	−0.02	−0.31	0.06	0.04	−0.03	−0.02	−0.01	−0.14
4. Mom's Edu. 2 (5^{th})	0.02	−0.02	−0.64		0.04	0.12	0.02	0.03	0.01	0.03	0.12	0.03	0.03	0.05	0.02	0.04	0.10
5. Pubertal Timing (5^{th})	0.16	0.03	0.01	−0.12		0.11	0.00	0.22	0.13	0.00	0.11	0.12	0.02	0.08	0.00	−0.03	0.03
6. Harsh Parenting (C,5^{th})	0.08	0.07	0.01	−0.11	0.18		0.11	0.14	0.06	0.10	0.06	0.33	0.10	0.03	−0.04	0.07	−0.04
7. Harsh Parenting (M,5^{th})	−0.08	0.05	−0.30	0.32	−0.14	0.02		0.05	0.01	0.23	0.29	0.28	0.59	0.15	0.25	0.22	0.26
8. Internal. Sym. (C,5^{th})	0.15	−0.01	−0.01	0.09	0.29	0.12	0.07		0.58	0.11	0.12	0.15	0.05	0.23	0.10	0.10	0.09
9. External. Sym. (C,5^{th})	0.26	0.01	−0.03	0.14	0.30	0.19	0.11	0.64		0.04	0.19	0.06	0.04	0.24	0.22	0.13	0.18
10. Internal. Sym. (M,5^{th})	0.10	0.03	0.05	0.05	0.10	−0.09	0.18	0.26	0.27		0.47	0.14	0.14	0.11	0.03	0.32	0.20
11. External. Sym. (M,5^{th})	−0.13	−0.05	−0.12	0.19	−0.05	−0.03	0.34	0.07	0.05	0.28		0.11	0.20	0.19	0.22	0.37	0.44
12. Harsh Parenting (C,7^{th})	−0.07	0.00	−0.20	0.09	0.28	0.24	0.05	0.10	0.13	0.03	0.00		0.39	0.28	0.31	0.33	0.35
13. Harsh Parenting (M,7^{th})	−0.17	−0.03	−0.21	0.28	−0.14	0.11	0.52	0.08	0.06	0.20	0.27	0.09		0.23	0.29	0.29	0.34
14. Internal. Sym. (C,10^{th})	0.05	0.10	−0.15	0.20	0.29	0.13	0.02	0.36	0.32	0.24	0.16	0.41	0.18		0.78	0.69	0.61
15. External. Sym. (C,10^{th})	0.04	0.03	−0.23	0.21	0.18	0.15	0.14	0.24	0.31	0.21	0.23	0.36	0.31	0.79		0.67	0.71
16. Internal. Sym. (M,10^{th})	0.07	0.04	−0.19	0.22	0.16	0.01	0.05	0.32	0.36	0.39	0.18	0.21	0.29	0.77	0.74		0.80
17. External. Sym. (M,10^{th})	0.12	0.06	−0.32	0.32	0.19	0.10	0.14	0.28	0.32	0.30	0.24	0.28	0.38	0.76	0.82	0.90	
M (Mexican American)	10.41	7.42	0.42	0.26	0.01	2.04	2.09	21.46	5.05	10.76	4.17	2.04	2.13	19.75	7.92	10.49	4.48
M (Mexican Immigrant)	10.25	4.47	0.59	0.22	−0.03	1.87	2.05	22.11	4.51	12.34	3.50	2.04	2.07	20.96	9.11	10.99	4.63
SD (Mexican American)	0.51	4.48	0.49	0.44	1.00	0.75	0.64	14.10	5.21	8.76	5.68	0.77	0.63	16.44	8.71	14.17	7.15
SD (Mexican Immigrant)	0.50	2.70	0.49	0.42	1.01	0.76	0.53	14.25	5.65	10.81	4.20	0.80	0.60	19.30	11.29	18.83	8.89

Note. C = Child report, M =Mother report. The upper triangle presents the correlations of Mexican American (U.S. born) daughters (N = 263). The lower triangle presents the correlations of Mexican immigrant (Mexico born) daughters (N = 99). Two dummy variables represented the three categories of mother's education level (Mom's Edu. 1: did not complete versus college or higher; Mom's Edu. 2: high school versus college or higher). Descriptive statistics were based on the average of imputed datasets. Therefore, standard benchmarks to assess effect sizes (0.10 = small; 0.30 = medium; 0.50 = large) were used (Cohen, 1991).

Table 2

Means, standard deviations and zero-order correlations of studyvariables (by mothers' nativity)

Variable name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Age (5^{th})		0.01	0.11	−0.03	0.09	−0.07	−0.12	0.14	0.14	−0.11	0.05	−0.04	−0.10	0.24	0.08	0.11	0.10
2. Family Income (5^{th})	0.02		−0.25	−0.12	−0.24	0.11	−0.02	−0.18	−0.20	−0.02	−0.03	−0.01	−0.03	−0.03	−0.04	−0.15	−0.14
3. Mom's Edu. 1 (5^{th})	−0.01	−0.27		−0.33	−0.09	−0.10	−0.13	−0.04	0.00	−0.06	−0.19	0.21	0.03	0.05	0.00	0.04	−0.07
4. Mom's Edu. 2 (5^{th})	0.00	0.12	−0.60		0.15	0.10	0.20	0.08	0.04	0.01	−0.03	−0.04	0.07	−0.02	−0.02	0.05	0.12
5. Pubertal Timing (5^{th})	−0.03	0.06	0.01	−0.07		0.06	0.08	0.30	0.16	−0.07	0.15	−0.05	0.03	0.01	−0.02	−0.12	−0.01
6. Harsh Parenting (C,5^{th})	0.00	0.09	0.03	0.04	0.15		0.14	0.03	−0.05	0.21	0.15	0.38	0.10	−0.07	0.01	−0.09	−0.11
7. Harsh Parenting (M,5^{th})	0.00	0.14	−0.07	0.06	−0.07	0.08		0.14	0.16	0.28	0.42	0.20	0.62	0.23	0.32	0.24	0.33
8. Internal. Sym. (C,5^{th})	0.02	0.00	0.00	0.04	0.22	0.16	0.03		0.56	0.07	0.11	0.03	0.11	0.10	0.02	−0.01	0.07
9. External. Sym. (C,5^{th})	0.03	0.03	−0.04	0.05	0.18	0.14	0.00	0.60		0.03	0.21	0.09	0.06	0.15	0.19	0.07	0.22
10. Internal. Sym. (M,5^{th})	0.00	−0.05	0.02	0.04	0.06	−0.02	0.19	0.18	0.13		0.61	0.12	0.20	0.08	0.00	0.32	0.19
11. External. Sym. (M,5^{th})	−0.09	0.09	−0.25	0.18	0.04	0.00	0.27	0.13	0.14	0.35		0.06	0.24	0.20	0.23	0.39	0.38
12. Harsh Parenting (C,7^{th})	−0.08	−0.01	−0.09	0.09	0.23	0.28	0.23	0.17	0.07	0.10	0.11		0.27	0.23	0.27	0.25	0.18
13. Harsh Parenting (M,7^{th})	−0.18	0.01	−0.09	0.12	−0.03	0.11	0.56	0.04	0.04	0.14	0.24	0.32		0.23	0.28	0.29	0.34
14. Internal. Sym. (C,10^{th})	−0.02	0.11	−0.09	0.13	0.19	0.09	0.07	0.33	0.30	0.19	0.17	0.35	0.21		0.83	0.74	0.69
15. External. Sym. (C,10^{th})	−0.06	0.07	−0.09	0.11	0.09	0.02	0.17	0.19	0.27	0.13	0.20	0.34	0.30	0.77		0.69	0.74
16. Internal. Sym. (M,10^{th})	−0.06	0.03	−0.09	0.11	0.08	0.09	0.14	0.24	0.25	0.35	0.27	0.30	0.29	0.71	0.70		0.87
17. External. Sym. (M,10^{th})	−0.01	0.04	−0.22	0.18	0.11	0.03	0.19	0.18	0.22	0.25	0.37	0.38	0.37	0.66	0.76	0.83	
M (Mexican American)	10.44	8.83	0.16	0.36	0.07	2.04	2.03	20.69	5.03	10.98	5.74	1.96	2.02	20.97	8.89	11.48	5.33
M (Mexican Immigrant)	10.35	5.92	0.56	0.22	−0.02	1.97	2.10	21.94	4.86	11.26	3.43	2.07	2.14	19.80	8.04	10.35	4.26
SD (Mexican American)	0.52	5.23	0.37	0.48	0.99	0.68	0.61	14.30	5.06	8.78	6.47	0.76	0.60	18.08	10.42	16.38	8.38
SD (Mexican Immigrant)	0.51	3.67	0.50	0.41	1.00	0.78	0.61	14.08	5.42	9.57	4.79	0.78	0.62	17.01	9.18	15.31	7.41

Note. C = Child report, M =Mother report. The upper triangle presents the correlations of Mexican American (U.S. born) daughters (N = 263). The lower triangle presents the correlations of Mexican immigrant (Mexico born) daughters (N = 99). Two dummy variables represented the three categories of mother's education level (Mom's Edu. 1: did not complete versus college or higher; Mom's Edu. 2: high school versus college or higher). Descriptive statistics were based on the average of imputed datasets. Therefore, standard benchmarks to assess effect sizes (0.10 = small; 0.30 = medium; 0.50 = large) were used (Cohen, 1991).