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Family Mediators of Acculturation and Adolescent Sexual Behavior Among Latino Youth

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Abstract The present study develops and evaluates a theoretical framework of mediators of the relationship between acculturation and adolescent sexual behavior. Four hundred Latino mother–adolescent dyads from the Bronx, New York were interviewed. The study explored the relationship between intentions to have sexual intercourse and explanatory variables such as adolescent romantic relationship status and partner preferences, maternal approval of dating, adolescent perceptions of maternal approval of dating, and maternal and adolescent levels of familismo and acculturation. Findings revealed complex dynamics between acculturation and adolescent sexual behavior. Protective and risk-inducing associations were observed, with important gender differences operating for boys and girls. Implications for the development of applied prevention programs are discussed.

Keywords Acculturation · Adolescent sexual behavior · Familismo ·
Parent–child relationships · Latino youth

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Introduction

Adolescent sexual risk behavior among Latino youth remains a serious public health concern. Data from the 2007 Youth Risk Behavior Survey indicate that approximately 52% of Latino high school students have had sexual intercourse, and 17% report having had four or more sexual partners in their lifetime (Centers for Disease Control and Prevention [CDC] 2008). In comparison to their non-Latino peers, Latino adolescents are less likely to use a method of contraception at first intercourse (Abma et al. 2004) and are at high risk for experiencing the potentially negative consequences associated with adolescent sexual behavior. In 2006, the teen birth rate for Latina adolescents age 15–19 years old increased by 2% to 83.0 births per 1,000 adolescent girls (Hamilton et al. 2007). Despite similar increases among all racial/ethnic groups, Latina girls continue to have the highest teen birth rate in the United States (U.S.) (Hamilton et al. 2007). Surveillance data also indicate that Latino youth experience higher rates of sexually transmitted infections (STIs), such as chlamydia, gonorrhea, syphilis and HIV/AIDS, than their non-Latino white peers (CDC 2004). Clearly, these data highlight the need for additional research related to Latino youth and sexual behavior.

Acculturation and Adolescent Sexual Behavior

Acculturation is one factor that has been associated with sexual behavior and health outcomes among diverse groups of Latino adolescents in the U.S. (Afable-Munsuz and Brindis 2006; Guilamo-Ramos et al. 2005). Acculturation is commonly understood to encompass the processes through which individuals adapt their language, beliefs, values, attitudes and behaviors to that of a host culture (Clark and Hofsess 1998; Ebin et al. 2001). With respect to Latino youth sexual behavior, a recent review on acculturation and the sexual risk taking of Latino youth yielded inconsistent findings on the role of acculturation across studies (Afable-Munsuz and Brindis 2006). For example, a number of studies have found that acculturation is related to sexual initiation, with acculturation-related variables such as nativity (Ebin et al. 2001; Jimenez et al. 2002), language spoken in the home (Ebin et al. 2001), and length of residence in the U.S. (Guilamo-Ramos et al. 2005) being positively associated with coital debut for Latino adolescent boys and girls. In addition, higher levels of acculturation, as measured by adolescent self-identity (Mexican, Chicana, Mexican American, or Spanish) and by preferred, spoken, and maternal language, have been associated with an increased number of lifetime sexual partners and a greater number of lifetime pregnancies for Latina youth (Kaplan et al. 2002).

   Although these studies suggest that higher levels of acculturation may be a risk factor for sexual risk behavior, other studies have found a protective effect with more highly acculturated Latinos reporting more positive beliefs about using condoms during sexual intercourse (Norris and Ford 1994). In addition, an interesting gender by acculturation interaction for a specific belief about condoms being messy has been observed, with both low and high acculturated women reporting higher levels of disagreement than low and high acculturated men and a greater gender difference emerging between low acculturated women and men

(Norris and Ford 1994). Still other studies have observed that acculturation is related to the sexual behavior of Latino youth in complex ways. For example, analyzing data from the National Longitudinal Study of Adolescent Health, Guilamo-Ramos et al. (2005) examined the relationship between youth sexual behavior and acculturation among Mexican, Puerto Rican and Cuban youth. They examined how length of residence in the U.S. and speaking Spanish in the home were related to the sexual activity. Results indicated that acculturation was a risk factor for Latino youth who had lived most of their lives in the U.S. and a protective factor for Latino youth who had more recently immigrated to the U.S. Specifically, among recent immigrants with low levels of exposure to U.S. culture, Latino adolescents from English-speaking homes were less likely to be sexually active than their peers from Spanish-speaking homes. However, the opposite relationship emerged for highly acculturated youth who had been exposed to the U.S. for longer periods of time, e.g., born in the U.S. or lived in the U.S. for most of their lives. Interestingly, the observed effects were robust across Latino subgroup, gender and grade.

At the same time, there are studies that have failed to find any relationship between indices of acculturation and Latino adolescent sexual behavior or have observed differences in the acculturation-sexual behavior relationship for males and females. For example, Raffaelli et al. (2005) found no relationship between nativity and sexual debut among a sample of female college students. Similarly, Jimenez et al. (2002) failed to find a relationship among Latina adolescents between speaking Spanish at home and the onset of sexual activity or the likelihood of having ever used contraceptives during sexual intercourse. Assessing the use of Spanish in social and daily activities, Ford and Norris (1993) conducted separate analyses of the acculturation-sexual behavior relationship for males and females. Findings indicated that although acculturation was positively related to the likelihood of sexual intercourse for females, no such relationship was observed for males. In addition, a positive association between acculturation and both oral and anal sex emerged for women, but acculturation was only positively related to oral sex for males. Finally, no significant association between acculturation and the number of sexual partners in the last year was observed for either males or females. Using this same index of acculturation, Flores et al. (2002) also observed that acculturation was not related to intentions to have sex among a sample of Latina adolescents. Taken together, these studies suggest that the relationship between acculturation and adolescent sexual risk behavior in Latino youth is complex and warrants additional investigation.

One factor contributing to the presence of inconsistent findings is the multiple ways in which acculturation has been measured in the research literature. In their review of the extant research, Afable-Munsuz and Brindis (2006) identified 17 studies published between 1985 and 2006 that examined the relationship between acculturation and sexual behavior of Latino youth aged 25 and under. Across these studies, 23 distinct measures of acculturation were found that included such diverse indicators as location of residence, country of birth, citizen status and length of residence in the country, language preference (e.g., Spanish versus English), and embracement of Latino culture (Afable-Munsuz and Brindis 2006). Several researchers have criticized the viability of crude acculturation measures such as length of residence and language spoken in the home (e.g., Abraido-Lanza et al.

2006; Cabassa 2003). The present study uses measures of acculturation that are embraced by critics of these more traditional crude proxies. It thus represents an improvement over most of the extant research on acculturation influences on the sexual behavior of Latino youth.

To date, limited research exists that attempts to identify the pathways of influence underlying the observed acculturation-adolescent sexual behavior relationship, particularly among diverse samples of Latino youth. Public health researchers and practitioners will not be able to fully understand how the process of acculturation influences Latino adolescent sexual risk behavior unless we move beyond reliance on crude indices of acculturation and the analysis of simplistic bivariate assessments of the relationship between acculturation and sexual risk taking. Traditional measures of acculturation need to be supplemented by measures that include important cultural and contextual factors that assess basic attitudes, beliefs, and behaviors (Afable-Munsuz and Brindis 2006; Cabassa 2003) and do so within the context of a well-developed theory (Abraido-Lanza et al. 2006). The present study examines the relationship between adolescent sexual behavior and acculturation within the context of several potentially important familial and cultural processes and the formation of adolescent romantic relationships among three Latino subgroups: Puerto Ricans, Mexicans, and Dominicans.

Family Processes Related to Latino Adolescent Sexual Decision Making

Research suggests a number of family processes that may be important for understanding the relationship between acculturation and sexual behavior among Latino youth. Two types of family processes are evaluated in the present study. The first type is Latino cultural values and the extent to which both parents and adolescents embrace the fundamental Latino cultural value of familismo, both attitudinally and with respect to the formation of romantic relationships in adolescence. The cultural value of familismo emphasizes strong relationships based on closeness, support and mutuality among family members (Contreras et al. 1999). The second type of family process relates to parental orientations toward adolescent dating, namely parental disapproval of dating and romantic relationships during adolescence. The sample of Latino youth studied is in the 8th grade, which represents early adolescence and a developmental time where many believe it is too early for youth to be involved in serious, romantic relationships. Although both familismo and parental disapproval of dating have been related to adolescent sexual behavior among Latino youth, we know of no study that has examined these constructs in multivariate models as potential mediators of the relationship between acculturation and adolescent sexual activity with early adolescent Latinos.

Cultural Orientations Toward Familismo

Research has confirmed the importance of the cultural value of "familismo" in understanding family life, parent–adolescent socialization, and sexual decision making in Latino families (Arcia et al. 2000; Guilamo-Ramos et al. 2007a). In addition, familismo underscores the idea that adolescents defer to their parents and that

the family operates as an important referent for the attitudes and behaviors of individual family members (Marín and Van Oss Marín 1991). Some research suggests that familismo may influence Latino adolescents' romantic partner preferences (Flores et al. 1998; Raffaelli and Suárez-al-Adam 1998). For example, Flores et al. (1998) found that Latino adolescents who reported high levels of familismo were more likely to desire romantic partners who valued the importance of family and having children. Similarly, Raffaelli and Suarez-al-Adam (1998) found that partner preferences of Latino women often reflected the cultural value of familismo.

Parental Orientations Toward Adolescent Dating

Another way in which Latino parents are thought to influence their adolescents' sexual behavior is through parental attitudes and values that encourage or discourage adolescent sexual activity. A number of studies have shown that parental disapproval of adolescent sexual activity is associated with reduced sexual risk taking in several domains, including a later onset of sexual activity, fewer sexual partners and decreased sexual activity (Jaccard et al. 1996; Miller et al. 1999). Among Latino youth, maternal disapproval and attitudes that convey conservative messages about adolescent sexual behavior have been associated with delayed onset of sexual behavior (Hovell et al. 1994), fewer sexual partners, and a decreased frequency of lifetime sexual intercourse (Miller et al. 1999). To date, we know of no study that has examined how Latino parental and youth orientations toward adolescent dating influence partner preferences, romantic relationships and sexual behavior in adolescence.

Adolescent Romantic Relationships

Finally, in addition to parental expressions of disapproval, one of the most consistent predictors of adolescent sexual activity is whether an adolescent is involved in a romantic relationship (Blum et al. 2000; McNeely et al. 2002). In a national sample of youth in grades 7 through 11, Jaccard and Dittus (2000) found that adolescents involved in a romantic relationship were more than twice as likely to have sexual intercourse than those not so involved, even after controlling for a wide range of key variables influencing sexual activity (e.g., gender, grade, relationship with parents, physical development, parental disapproval of sexual intercourse). There exists literature on the increased probability of transition to sexual experience for young girls who date older boys, and this may especially be true of Latino youth (e.g., Cavanagh 2004; Van Oss Marín et al. 2000). Few studies on the relationship between acculturation and adolescent sexual behavior have included involvement in a romantic relationship as a possible contributor to adolescent engagement in sexual activity.

The Present Study

The present study is a unique intergenerational analysis of acculturation and the Latino value of familismo as it relates to early adolescent sexual behavior. The

research assesses the acculturation of Latino mothers as well as their adolescent children and the embracement of familismo on the part of both mothers and adolescents. These constructs are then used to examine maternal approval of their adolescent child dating as well as their child's perceptions of these dating orientations. The dating constructs are, in turn, related to the dating activity of adolescents and the impact that such dating has on motivations to engage in sexual intercourse.

The theoretical model guiding the research appears in Fig. 1. According to path *a*, adolescent sexual behavior is affected by an adolescent's intention to engage in sexual intercourse. A large body of research suggests that intentions are a reliable and consistent predictor of future adolescent sexual behavior (Buhi and Goodson 2007). Because past research indicates that being involved in a romantic relationship is a robust predictor of sexual behavior, path *b* reflects the hypothesis that current relationship status will be related to sexual intentions.

A major factor hypothesized to impact if an adolescent is in a romantic relationship is the extent to which a mother approves or disapproves of her adolescent child dating. The model predicts that adolescents will be less likely to be involved in a romantic relationship if their parents disapprove of them dating and being involved in such relationships. However, our theoretical framework posits a nuanced view of this dynamic that takes into account complex family processes. Specifically, adolescents are assumed to (reasonably) accurately perceive the extent to which their mother approves or disapproves of them dating (path *c*), and it is this perception that, in turn, impacts their dating behavior (path *d*). However, independent of this mechanism, parents who disapprove of their child engaging in dating behaviors may engage in monitoring and supervision that restrict the dating activities of their children. Thus, these orientations can have an independent effect on adolescent dating activities over and above adolescent perceptions and this is reflected in path *e*.

The maternal orientation toward their child dating is hypothesized to be impacted by the extent to which the mother embraces the Latino value of familismo (path *f*). There are two competing predictions. The first prediction is that mothers who embrace familismo will want their child to "remain part of the family" and will resist the child forming relationships that may detract from this. This logic predicts
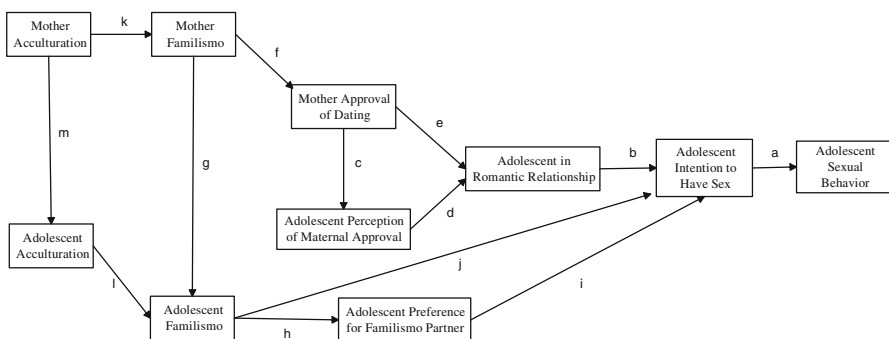

Fig. 1 Theoretical framework

that maternal embracement of familismo will be negatively associated with approval of adolescent dating. An alternative logic argues that mothers who embrace familismo will approve of their son or daughter engaging in behaviors that help them prepare for developing the skills they need to start their own family, and hence, will approve of their adolescent children exploring romantic attachments. This logic predicts that maternal embracement of familismo will be positively associated with approval of adolescent dating. The present research tests these competing predictions.

By virtue of traditional socialization mechanisms, we also hypothesize that adolescents' valuation of familismo will be influenced by how much their mother embraces familismo (path g). This is a straightforward prediction of intergenerational influence. To the extent that an adolescent values familismo, it is predicted that he or she will prefer romantic partners who also embrace familismo (path h). This prediction derives from the well-established relationship between belief/value similarity and attraction, which shows that people are generally more attracted to individuals who share common values as opposed to individuals who have non-similar values (e.g., Henderson and Furnham 1982). Preference for a partner who embraces the traditional Latino value of familismo, in turn, can impact intentions or motivations to engage in sex (path i) if one assumes, for example, that these preferences reflect the type of partner that adolescents tend to have or to seek out in their romantic relationships. For example, if one's partner is indeed a person who embraces familismo, then that partner may be more motivated to respect and obey the desires and rules of his or her parents out of respect for parents that is part and parcel to the concept of familismo. Because most parents of early adolescents disapprove of their children engaging in sexual intercourse, the adolescent who embraces familismo will be less likely to engage in sexual intercourse out of respect for his or her parents (see path j). By virtue of partner influence, this, in turn, might translate into lowered motivations to engage in sexual intercourse on the part of the target teen.

The final part of the theoretical framework maps more general acculturation processes onto the embracement of the specific Latino value of familismo: As mothers become more acculturated to U.S. culture, they will be less likely to embrace the Latino value of familismo (path k). Similarly, as adolescents become more acculturated to U.S. culture, they will be less likely to embrace the Latino value of familismo (path l). Finally, by virtue of intergenerational socialization, it is predicted that mothers who are more acculturated to U.S. culture will tend to have adolescent children who also are more acculturated to U.S. culture (path m).

Although not depicted in the theoretical framework, it is reasonable to assume that gender differences may moderate the above relationships. A number of studies have noted important gender differences, with Latino boys being more open toward having sex (Guilamo-Ramos et al. 2007b) and more likely to report sexual behavior (CDC 2008) than Latina girls. At the same time, whereas some research on acculturation and sexual behavior has observed gender differences (e.g., Ford and Norris 1993; Norris and Ford 1994), other studies have observed that the acculturation relationship is robust for males and females (e.g., Guilamo-Ramos et al. 2005). Given these dynamics, the present study tested for the moderating effect of gender in each of the specified paths. However, no specific hypotheses

about potential gender differences were made because of the exploratory nature of this aspect of the research.

In sum, the theoretical framework tested in this article approaches the analysis of acculturation and adolescent sexual behavior with a greater degree of conceptual sophistication than past research. Instead of focusing exclusively on a general measure of adolescent acculturation, it posits a complex chain of mediational mechanisms through which acculturation exerts its influence on adolescent sexual activity. It includes intergenerational influences that recognize that both the acculturation of the parent as well as the acculturation of the child can come into play. It also recognizes that one way in which acculturation exerts its impact is through its influence on the embracement of more specific Latino values, such as familismo. Familismo, in turn, is hypothesized to influence maternal orientations toward their children dating, which in turn operates in complex ways to impact romantic involvements and, in turn, the sexual motivations of Latino youth. By placing the construct of acculturation into a richer network of traditional as well as culture-specific mediators, a much fuller understanding of the role of acculturation in shaping the sexual behavior of Latino adolescents should result.

Method

Respondents and Procedures

Respondents were 400 mother–adolescent dyads recruited from the eighth grade of 10 middle schools in the South Bronx community of the Bronx, New York, NY. Only Puerto Rican, Mexican and Dominican youth were recruited into the study ($n = 133$ Puerto Rican Dyads, $n = 143$ Dominican Dyads, and $n = 124$ Mexican Dyads). An estimated 51% of the Bronx's total population identifies as Latino (U.S. Census Bureau [USCB] 2006). The Bronx is New York City's poorest borough, with an estimated 27% of Bronx families living below the poverty line (USCB 2006). In addition, Bronx adolescents bear a disproportionately high burden of the negative consequences associated with adolescent sexual risk behavior, including pregnancy, STIs and HIV/AIDS (New York City Department of Health and Mental Hygiene 2006).

A random sample of 8th grade students was selected from participating schools. Bilingual recruiters telephoned parents or legal guardians to invite the resident mother and adolescent to attend a data collection event at the school. Overall, 83% of contacted mother–adolescent pairs were recruited into the study. Of those recruited into the study, 89% of dyads ($n = 356$) attended an in-school data collection. Multiple attempts were made to schedule families for the in-school event. Eleven percent of families ($n = 44$) who were unable to attend an event after multiple attempts were interviewed in their home. A refusal bias survey was administered during the recruitment process to obtain key demographic variables, such as the mother's age, highest level of education, and marital status. No refusal

bias was observed between families who refused and families who agreed to participate.

Mothers completed consent and permission forms for their adolescent child, and adolescents completed assent forms. Project staff reviewed all consent forms with mothers and adolescents. All forms were written in both English and Spanish. Compensation was $25.00 per dyad. Institutional Review Board approval was obtained from Columbia University.

Our research focused on mothers rather than fathers for several reasons. First, Costigan and Cox (2001) suggest that there are non-trivial selection effects among fathers who agree to participate in research studies versus those who do not. In addition, our previous research with the target sample suggested that the majority of homes were single female head of households. Because statistical modeling is complicated by data that are not missing at random, in this case resulting from single mother households, interviewing mothers only was the best option. Finally, studies have suggested that mothers are more influential than fathers for parent–adolescent communication about sex and adolescent sexual behavior (DiIorio et al. 1999; Hutchinson 2002).

Data were collected via self-administered questionnaires. In order to promote truthful responding, data collection staff ensured youth that their answers were confidential and explained to parents and adolescents the difficulty of connecting a name to a survey. All instructions were orally reviewed and the surveys were written at a fourth grade reading level. The instructions emphasized the importance of providing truthful answers and respondents were told to skip any question they were uncomfortable answering. The survey was translated into Spanish using methods described in Marín and Van Oss Marín (1991) and was found to be linguistically equivalent by translators. Prior to completing the survey, participants identified their language preference, (e.g., English or Spanish). Adolescent surveys provided a developmentally appropriate definition of vaginal sexual intercourse. Adolescent males and females were given the same survey, with survey items reflecting gender appropriate pronouns. The measures presented here reflect the female version of the instrument. A full description of the measures is available from the first author.

Measures

Latino Ethnicity

Multiple questions assessed Latino ethnicity. First, mothers and adolescents reported if they were of Hispanic or Latino origin. If they answered yes, they were asked their Latino background. Only respondents answering affirmatively to the first item and only those self-identifying as Puerto Rican, Mexican or Dominican were included in the analysis.

Sexual Behavior

Adolescents were provided with a definition of vaginal sexual intercourse and then were asked if they had ever engaged in it. Responses were scored dichotomously to

indicate if the adolescent had ever engaged in vaginal sexual intercourse. Because there are base rate issues with behavioral measures of sexual intercourse among middle school youth, behavioral intentions were used as proxy indicators for future behavior. Research suggests that adolescents' intentions are the best predictor of future sexual behavior (e.g., Buhi and Goodson 2007). Four items assessed adolescent intentions to engage in sexual intercourse on a five point strongly disagree-strongly agree scale: (a) "If I had the opportunity and it was with a boy I liked a lot, I would engage in sexual intercourse," (b) "I think I am ready to have sexual intercourse," (c) "I would have sexual intercourse now if I had a boy who would do it with me," and (d) "I plan on having sexual intercourse in the next 6 months." The alpha for the scale was 0.86 and a single composite item reflecting adolescent's overall intentions was created, with higher scores reflecting greater openness toward having sex.

Acculturation

Acculturation at the maternal level was measured with the Short Acculturation Scale for Hispanics (SASH), a 12-item scale designed to measure three aspects of acculturation: (a) language use, (b) media use and (c) ethnic social relations (Marín et al. 1987). Language use was measured with five items (e.g., "In general, what languages do you read and speak?"). The media use subscale consisted of three items (e.g., "In what languages are the T.V. programs you usually watch?"). Responses for language and media use were scored on a five-point scale with responses ranging from 1 = Only Spanish, 2 = More Spanish than English, 3 = Both equally, 4 = More English than Spanish, 5 = Only English. Four items measured respondents' preferred ethnic social relations. A sample item included, "Your close friends are…" Responses were on a 5-point scale: 1 = All Latinos/Hispanics, 2 = More Latinos than Americans, 3 = About half and half, 4 = More Americans than Latinos, 5 = All Americans. In the present study, the alpha for the total scale was 0.94 and higher scores indicated higher levels of maternal acculturation.

Acculturation at the adolescent level was measured with the Short Acculturation Scale for Hispanic Youth [SASH-Y] (Barona and Miller 1994). The SASH-Y was adapted from the original SASH (Marin et al. 1987) to also assess the family context of adolescent acculturation. The SASH-Y consists of 12-items measuring three dimensions of acculturation: (a) extrafamilial language use, (b) familial language use, and (c) ethnic social relations. Six items measured extrafamilial language use (e.g., "What languages do you read and speak?") and three items assessed familial language use (e.g., "What languages do your parents speak to you in?"). Responses were worded in the same manner as the original SASH scale (e.g., 1 = Only Spanish to 5 = Only English). Three items assessed preferred ethnic social relations (e.g., "The persons you visit or who visit you are…"). The scale was scored on the same five-point scale as the SASH (e.g., 1 = All Latinos/Hispanics to 5 = All Americans). The alpha for adolescents was

0.90 for the overall scale, with higher scores indicating greater levels of adolescent acculturation.

Familismo

The extent to which mothers and adolescents embraced the cultural value of familismo was measured with a modified version of the Lugo Steidel and Contreras (2003) familismo scale. Respondents answered 19 questions on four interrelated dimensions of familismo: (a) familial support; (b) familial interconnectedness; (c) familial honor; and (d) subjugation of self for the family. Seven items assessed perceptions of familial support, such as "A person should spend time with her parents on a regular basis," and "A person should live near her parents." Familial interconnectedness was assessed with 5 items (e.g., "Parents and grandparents should be treated with great respect regardless of their differences in views."). Four items measured familial honor; sample items stated: (a) "A person should feel ashamed if something she does dishonors the family name" and (b) "A person should live with their parents until they get married." The final dimension of familismo assessed was subjugation of the self for the family, which was measured with 3 items (e.g., "Children should obey their parents without question, even if they believe they are wrong."). Responses were scored on a 5-point strongly disagree-strongly agree scale, with higher scores reflecting higher levels of familismo. Overall, the familismo scale had a Cronbach's alpha of 0.77 for mothers and 0.80 for adolescents.

Adolescent Preferences for a Familismo Partner

Adolescent preferences for a romantic partner who embraced the cultural value of familismo were assessed with a 14-item scale adapted from the work by Lugo Steidel and Contreras (2003). On a five-point strongly disagree-strongly agree scale, adolescents were asked to report the extent of their agreement to statements about an ideal boyfriend. A stem stating, "At this time in your life, the ideal boyfriend…." was followed by the following items: (a) "always helps his parents with the support of younger brothers and sisters;" (b) "spends time with his parents on a regular basis;" (c) "places his family before his education;" (d) "is able to rely on his family if the need arises;" (e) "treats his parents and grandparents with great respect, even if they have different views;" (f) "often does activities with his family;" (g) "values time spent with his relatives;" (h) "helps his parents in times of need, for example, helps financially or shares a house;" (i) "supports members of the extended family, for example, aunts, uncles, and in-laws, if they are in need, even if it is a big sacrifice;" (j) "feels ashamed if something he does dishonors the family name;" (k) "always defends his family's honor, no matter what the cost;" (l) "places his family before his career;" (m) "thinks it is important to spend time with your family;" and (n) "thinks it is important for you to spend time with his family." Higher scores reflected stronger preferences for a romantic partner who embraced the cultural value of familismo. In the present study, the Cronbach's alpha was 0.92 for adolescents.

Maternal Disapproval of Dating

Adolescents were asked to respond to four items assessing maternal disapproval of dating and dating-related activities. The items asked adolescents to consider how much their mother would approve or disapprove of different activities related to dating. Adolescents were instructed that it did not matter if they had done any of the following things with a boy, but to respond how much they thought their mother would approve or disapprove of them doing these activities. The activities were: (a) dating boys; (b) dating boys who are older than me; (c) dating anyone seriously; and (d) going on a date with a boyfriend alone. The items were scored on a five-point strongly disapprove-strongly approve scale and were coded so that higher scores reflected higher levels of perceived maternal approval. The scale had an alpha of 0.83. Mothers responded to the same items on the same scale indicating their own approval/disapproval of their child dating. The alpha coefficient for mothers was 0.81.

Adolescent Relationship Status

Adolescents were asked to respond to a single item about whether or not they were currently in a romantic relationship ($0 = $ No, $1 = $ Yes).

Social Desirability Bias

Four items assessing social desirability bias of mothers and adolescents were included to use as a methodological check: (a) "I never swear;" (b) "I never criticize other people;" (c) "I don't gossip about other people's business;" and (d) "I never say something bad about a friend behind his or her back." The social desirability items were separated by filler items in the survey. Responses were scored on five-point strongly disagree-strongly agree scale, with higher scores reflecting a greater tendency to give socially desirable responses. These items have been used in nationally representative studies, such as the National Longitudinal Study of Adolescent Health, to good effect (Bearman et al. 1997). In the present study, the alpha for adolescents was 0.57, and for mothers, it was 0.71.

Analytic Plan

Parameter estimation used structural equation modeling (SEM). SEM compares the pattern of covariances predicted by the model in Fig. 1 with the observed covariances to determine if the data are consistent with the model. Several goodness of fit indices were used to assess model fit, including the chi-square discrepancy test (a significant *p*-value indicates bad model fit), the root mean squared error of approximation (RMSEA < 0.05 indicates good model fit), the standardized root mean squared residual (RMR ranges between 0 and 1, with 0 indicating perfect fit and values below 0.05 suggesting good fit), and the comparative fit index (CFI) (values for the CFI range between 0 and 1, with values above 0.95 indicating good

model fit). In addition, more focused indices of fit were examined, including modification indices and standardized residuals between predicted and observed covariances. Model modifications were made to improve fit only if they made conceptual sense.

The SEM analyses were conducted using AMOS 16.0. The presence of a dichotomous endogenous variable in the model that also serves as a predictor in a linear equation implied by the model (i.e., whether the adolescent is in a romantic relationship or not) introduces analytic complications. One strategy was to assume a linear probability model and then to use bootstrapping to accommodate the variance heterogeneity and non-normality that results from a dichotomous outcome variable. A second strategy would be to use a variant of logistic regression with numerical integration as offered in the M Plus software (Muthén and Muthén 2001). We report here the former, but also repeated the analyses using the M Plus framework. All conclusions were the same, so the choice of analytic method is moot. For the bootstrap analyses, we used 3000 bootstrap replicates. Mediation was tested using methods described by Jaccard et al. (2006) that were based on the joint significant test in MacKinnon et al. (2002).

Results

The results are organized into three sections. The first section discusses descriptive statistics, relationships among key study variables, outliers, missing data, and non-normality. In the second section, a slightly modified version of Fig. 1 is analyzed using SEM. The final section summarizes a series of supplementary analyses that address issues of measurement error, specification error and statistical power.

Preliminary Analyses

Descriptive Statistics

Table 1 presents key descriptive statistics on demographic variables and Table 2 presents means, standard deviations, skewness and kurtosis values for all of the major variables used in the study.

Missing Data

Small amounts of missing data were present. No coherent pattern was evident and missing data were generally less than 1% of the cases for any given variable. Imputations for individuals with missing data were computed with the computer program Amelia to conform to covariance estimates consistent with the Expectation–Maximization approach with importance resampling as discussed by King et al. (2001). Given the trivial amounts of missing data, the choice of an imputation strategy is moot.

Table 1 Descriptive statistics for sample

	Males	Females
Adolescents ($n = 400$)	182	218
Mean age	13.25 years	13.28 years
Percent born in U.S.	52.1[1]	47.9[1]
Percent currently in a romantic relationship	23.6	18.3
Percent non-virgin	15.6[1]	4.6[1]
Mean religion is important	2.74	2.84
Mothers ($n = 400$)		400
Mean age		40.55 years
Percent born in U.S.		12.3
Mean religion is important		3.36

Note: "Percent non-virgin" applies only to adolescents who reported having had vaginal sexual intercourse. "Percent born in U.S." applies to respondents who were born in the continental United States; it does not include respondents born in Puerto Rico. "Mean religion is important" refers to mean level of religiosity with 1 = *not at all important*, 2 = *somewhat important*, 3 = *quite important*, 4 = *very important*. Groups with a common numerical superscript within a row are statistically significantly different from each other ($p < 0.05$)

Table 2 Means, standard deviations, skewness and kurtosis for major variables in the SEM model

	Total sample				Adolescent females		Adolescent males	
	Mean	SD	Skewness	Kurtosis	Mean	SD	Mean	SD
Adolescents								
Overall acculturation	2.55	0.79	0.47	0.55	2.49	0.82	2.62	0.75
Embracement of familismo	4.14	0.69	−0.39	−0.25	4.11	0.75	4.18	0.62
Preferences for a familismo partner	3.75	0.89	−0.69	0.89	3.72	1.01	3.79	0.73
Perceptions of maternal approval of dating	2.69	1.15	0.12	−0.98	2.27	1.10	3.20	1.01
Intentions to have sexual intercourse	1.99	1.08	0.82	−0.19	1.48	0.73	2.61	1.12
Mothers								
Overall acculturation	1.93	0.88	0.82	0.16	2.01	0.93	1.84	0.81
Embracement of familismo	4.38	0.65	−0.99	1.77	4.39	0.70	4.38	0.59
Maternal approval of dating	2.25	1.03	0.38	−0.69	1.94	0.95	2.62	1.02

Non-normality

An assumption of traditional maximum likelihood methods of SEM is that continuous variables in the model are multivariately normally distributed. At the multivariate level, univariate normality is a necessary but not sufficient condition for normality. As seen in Table 2, all of the continuous variables in the model showed reasonable levels of normality, as evidenced by the fact that none of the skewness or kurtosis indices were greater than an absolute value of 2.0.

Outliers

Outliers were explored in two ways. First, we calculated leverage indices for each individual for all variables in the overall model. An individual was declared an outlier if his or her leverage value was four times larger than the mean leverage value. Second, for each linear equation implied by the SEM model, we calculated a standardized dfbeta for each predictor and identified an outlier as anyone with an absolute standardized df beta value greater than 1.0. No outliers were evident in either analysis.

The Relationship Between Behavioral Intentions and Behavior

The primary outcome variable in the SEM analyses was the intention to have sexual intercourse in the next 6 months. As noted earlier, studies have found that adolescent behavioral intentions are one of the best predictors of future sexual activity (e.g., Buhi and Goodson 2007). The intention measure rather than past sexual behavior was used as the primary outcome because it is less subject to base rate problems and because it can be modeled in more straightforward ways given that it is continuous in character. To empirically show its association with behavior, we calculated the proportion of adolescents who reported having had sexual intercourse at each of the major scale points of the intention measure. For adolescents who scored 1 (indicating they intended not to engage in future sexual activity), the proportion who had had sexual intercourse was 0.03. For those scoring, 2, 3, 4 and 5, the corresponding proportions were 0.10, 0.13, 0.22 and 0.70, respectively. The association between the variables was statistically significant ($p < 0.05$) and there is a clear and substantial link between them.

Structural Equation Analysis

Based on Fig. 1, the model in Fig. 2 without the paths characterized by dashed lines was initially fit to the data separately for males and females. This model yielded poor indices of global fit for both groups and the models also evidenced ill-fit at the more focused level as well (e.g., in tests of predicted versus observed covariances for each cell of the covariance matrix). Based on the inspection of modification indices and theoretical coherence, the paths characterized by the dashed lines were added to the model and a multiple group SEM analysis was performed using females and males as the two groups. The overall fit indices were excellent (e.g., chi square for 30 df = 31.0, $p < 0.51$; CFI = 1.00, RMSEA = < 0.001, p value for close fit = 0.98, standardized RMR = 0.03) as were the more focused fit indices. Figure 2 presents the unstandardized path coefficients for each path, with the path coefficient for females listed first and the path coefficient for males listed second. We discuss clusters of these path coefficients, as well as supplemental statistical indices, in turn.

Romantic Relationships and Intentions to have Sexual Intercourse

For both males and females, there was a statistically significant path coefficient linking relationship status to intentions to have sex in the next 6 months.
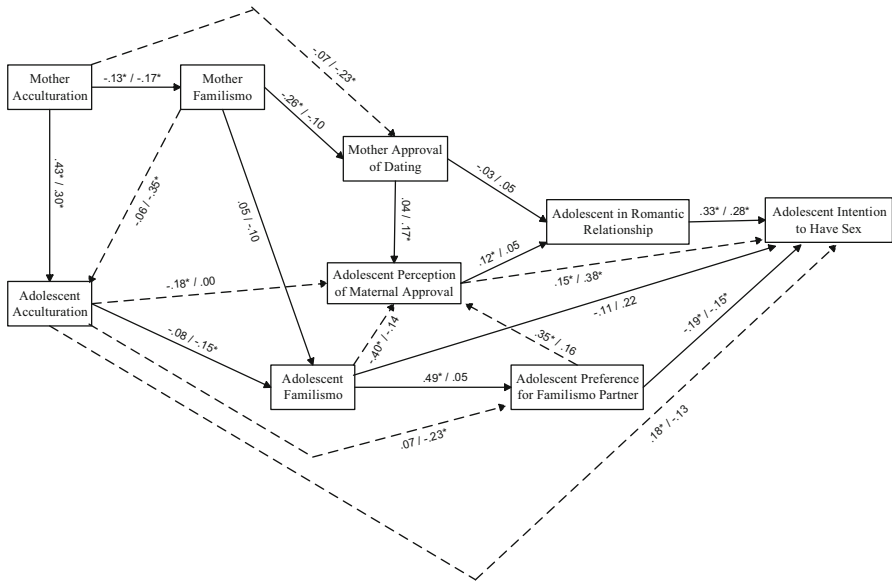
Fig. 2 Structural equation model analyses. *Note*: All coefficients are unstandardized. The path coefficient for females appears first, the path coefficient for males appears second. Solid lines reflect the initial model that was fit. Examination of modification indices resulted in the addition of paths depicted by dashed lines. This refitted model resulted in an overall excellent fit. * $p < 0.05$

Adolescents who were involved in a relationship were more inclined to have sexual intercourse than those who were not. The variables were estimated to account for about 15% of the variance in the outcome (hereafter referred to as the squared multiple correlation) in both groups. This result is consistent with past research that has shown that relationship status is a robust predictor of sexual behavior.

Maternal Disapproval of Dating, Involvement in a Romantic Relationship, and Intentions to have Sexual Intercourse in the Next Six Months

As expected, adolescent perceptions of maternal approval of them dating was predictive of their involvement in a romantic relationship, but this was only true for Latina girls (path coefficient = 0.12, $p < 0.05$), not Latino boys (path coefficient = 0.05, *ns*). For girls, the more the mother approved of them dating, the more likely it was the girl would be currently involved in a romantic relationship. These perceptions, however, showed evidence of independent effects on intentions to engage in sex for both boys and girls: The more the adolescent saw the mother as approving of dating, the more likely it was the adolescent was to intend to have sexual intercourse in the next 6 months (path coefficient for girls = 0.15, $p < 0.05$; path coefficient for boys = 0.38, $p < 0.05$). Thus, for both groups, perceptions of maternal orientations towards dating seem germane.

Correspondence Between Maternal Orientations Towards Dating and Adolescent Perceptions of those Orientations

We expected to observe strong and statistically significant path coefficients from the actual maternal approval/disapproval of their adolescent dating to the adolescent perceptions of those orientations. The path coefficient was statistically non-significant for girls and only weakly related for boys. For girls, the correlation between the two constructs was 0.04 (*ns*) and for boys, it was only 0.17 ($p < 0.05$), suggesting that adolescents may not accurately perceive the orientations of their mothers.

In a purely rational world, the only determinant of an adolescent's perception of the maternal approval/disapproval of him or her dating would be the mother's actual approval/disapproval. However, Fig. 2 revealed several factors that were predictive of adolescent perceptions over and above the actual maternal orientation. For example, for girls, their embracement of familismo was predictive of their perceptions of maternal dating approval (holding actual orientations constant) such that girls who were higher in familismo tended to see their mothers as being more approving of dating (path coefficient = 0.40, $p < 0.05$). This statistically significant perceptual bias was not evident in boys (path coefficient = −0.14, *ns*). The same trend also was evident for the general acculturation variable.

Inter-generational Effects of Acculturation and Familismo and their Relationship to Maternal Approval of Adolescent Dating and Other Dating Variables

Although maternal acculturation was related to adolescent acculturation for both girls and boys (path coefficients = 0.43 and 0.30, both $p < 0.05$), this was not the case for maternal and adolescent familismo (path coefficients = 0.05 and −0.10, both *ns*). Maternal embracement of familismo was negatively associated with approval of dating for girls, such that the more the mother embraced familismo, the less approving she was of her daughter dating (path coefficient = −0.26, $p < 0.05$). However, the same path coefficient for boys was not statistically significant (path coefficient = −0.10, *ns*). Interestingly, general acculturation of the mothers was statistically significantly related to maternal approval of dating for boys (path coefficient = −0.23, $p < 0.05$), but not for girls (path coefficient = −0.07, *ns*). The less acculturated the mother, the more she approved of dating on the part of her son.

Embracement of familismo on the part of the adolescent was associated with a preference for romantic partners who also embrace familismo, but this association was statistically significant for girls (path coefficient = 0.49, $p < 0.05$) and not for boys (path coefficient = 0.05, *ns*). Preferences for a partner who embraces familismo were, in turn, associated with lower intentions to engage in sexual intercourse, as noted earlier.

The Overall Relationship Between Acculturation and Intentions to Engage in Sexual Intercourse in the Next Six Months

The results in Fig. 2 reveal the complex dynamics by which general acculturation variables may influence adolescent sexual behavior through mediators such as the

specific Latino value of familismo, parental acculturation levels, parental orientations towards dating, adolescent partner preferences, and engagement in romantic relationships. Some of the associations of adolescent acculturation with the mediators are protective and some are risk-inducing, and this can differ for girls as compared to boys. The results of Fig. 2 provide a richer appreciation for the acculturation dynamics that may be at play. To analyze how some mediational effects in the model may overpower or be canceled by other mediational effects in the model, we calculated the total effect (in an SEM sense of the term) of the adolescent acculturation variable on adolescent intentions to engage in sex in the near future. For females, the effect was statistically significant (path coefficient = 0.15, $p < 0.05$), whereas for males it was not (path coefficient = −0.08, ns). For females, the "net effect" of becoming more acculturated to U.S. culture was to "increase" intentions to have sexual intercourse, on average. This same dynamic was evident for the Latino construct of familismo: For girls, the estimated total effect was such that rejecting familismo was associated with higher levels of intentions to engage in sexual intercourse (path coefficient = −0.25, $p < 0.05$), but this was not the case for boys (path coefficient = 0.10, ns).

Supplementary Analyses

Supplementary analyses were conducted to gain perspectives on methodological artifacts, specification error, and statistical power. The first analysis focused on the possible inflation of path coefficients and correlations due to common method variance in the form of social desirability bias. In general, social desirability showed negligible correlations with all variables in the model, never accounting for more than 1% explained variance in a construct for either parents or adolescents; the conclusions from the above were the same whether social desirability was included or excluded as a covariate in the linear equation for each endogenous variable.

To explore potential specification error, product term methods were used in conjunction with SEM algorithms for interaction analysis (Marsh et al. 2004) to test for all possible two-way interaction effects between predictors of each endogenous variable in Fig. 2. These analyses did not suggest the presence of any meaningful interactions, nor were any signs of blatant specification error detected.

It is helpful to provide perspectives on statistical power for cases where path coefficients were not statistically significant. Power analyses for SEM models are complex and often rest on assumptions that are impractical or not viable. However, a rough sense of power can be obtained by calculating the power for a regression coefficient in a standard multiple regression analysis that roughly maps onto the general parameters of the latent variable linear equations in Fig. 2. Given a sample size of about 200 per group (males and females) and a two-tailed alpha level of 0.05, the statistical power associated with a path coefficient that represents 3% explained variance over and above a set of five additional covariates was evaluated. A scenario where the set of predictors as a whole accounted for 10% of the variance of the outcome was evaluated. The approximate statistical power was greater than 0.85 in all cases. Overall, statistical power seems satisfactory. Finally, clustering effects due

to schools were minimal as reflected by intraclass correlations, hence such effects were not factored into the statistical analyses.

Discussion

The present study examined the relationship between acculturation and intentions to engage in sexual intercourse in an at-risk inner-city sample of early (8th grade) adolescents of Latino descent. Most research to date has used simple models to explore the relationship between acculturation and adolescent sexual behavior, ignoring the many mediators and sometimes opposing mechanisms that operate in the context of Latino cultural variables. The present study was an exception to this and thereby elucidates some of the interesting dynamics by which acculturation may impact adolescent sexual behavior. Several interesting results were observed.

Adolescent Romantic Relationships

First, consistent with past research, we found that adolescents who were involved in a romantic relationship were more likely to intend to have sexual intercourse in the near future than those who were not so involved. Importantly, we also found that adolescents perceptions of how approving or disapproving their mothers were of them dating were associated with involvement in a romantic relationship. This has not been shown in previous research and suggests another way in which parents can potentially impact adolescent sexual risk behavior. Surprisingly, adolescent perceptions of maternal approval of dating were only weakly related, if at all, to the actual maternal orientations towards dating. It may be that adolescent perceptions of maternal approval of dating are based on what adolescents want to hear, rather than actual parental expressions of disapproval. In this context, adolescents who want to date may minimize their mother's disapproval of dating. This suggests a disconnect between mothers and adolescents in which mothers need to better communicate their orientations and rules about dating to their children.

The Influence of Familismo

For Latina adolescent females, perceptions of maternal dating approval was systematically biased by the extent to which the adolescent embraced familismo: The more the adolescent embraced familismo, the less the mother was seen as being approving of dating, holding constant the true orientation of the mother. It may be that girls who are more family oriented are more likely to attribute orientations to the mother that "protect" the nuclear family unit and hence discourage forming early romantic relationships with boys. Other studies with urban Latino adolescents have found that youth reports are more salient for understanding adolescent behavior than are parental reports (Guilamo-Ramos et al. 2006). This finding was supported by our research, in that it was adolescent perceptions of maternal orientations towards dating, rather than the actual maternal attitudes, that were most predictive of the child's involvement in a romantic relationship.

Another set of family processes examined in the present study focused on the cultural value of familismo and the extent to which adolescents preferred having a romantic partner who embraced the core dimensions of familismo. Although there was little support for an inter-generational influence of mother and adolescent embracement of familismo, the extent to which Latino mothers and adolescents accepted familismo was related to adolescent sexual behavior in complex ways. At the maternal level, high rates of familismo were negatively associated with maternal approval of dating, a dynamic that suggests that as Latina mothers are focused on the centrality of their own family, they are less likely to approve of their daughter dating.

At the adolescent level, as adolescent girls perceived their family as being an important attitudinal and behavioral referent, they indicated a preference for a romantic partner also oriented toward familismo. This is consistent with research on similarity and attraction, but it is interesting that the effect was minimal for boys. Perhaps the construct of familismo is more central and salient to Latina females than it is to Latino males. An alternative interpretation of the differential gender effect of familismo suggests that it is an artifact of differences in the base rates of sexual behavior among boys and girls. However, the finding that adolescents' preferences for a partner who embraces familismo were associated with lowered intentions to have sex for both boys and girls argues against this interpretation. Perhaps such preferences reflect the type of partner that adolescents tend to have or to seek out in their romantic relationships, and associating with such a partner is then protective because of the respect for parents that it engenders.

Mediators of the Acculturation-Adolescent Sexual Behavior Relationship

In the present study, acculturation was related to adolescent sexual behavior through its relationship with several potentially important familial and cultural mediators. The pattern of results indicates that our understanding of the acculturation-sexual behavior relationship can be considerably broadened when examined in the context of a broader theoretical framework. Several findings warrant additional elaboration and exploration. First, maternal acculturation was related to adolescent acculturation, suggesting that there is some intergenerational similarity in the acculturation process for parents and adolescents. For adolescent girls, higher levels of acculturation, in turn, were associated with a tendency to perceive their mothers as being less approving of dating, which, in turn, was associated with a lower probability of being in a romantic relationship with a boy. This, in turn, was associated with lower intentions to engage in sex in the near future. Higher levels of acculturation also had risk inducing effects on sexual intentions over and above these mechanisms (see Fig. 2), indicating the complex dynamics at play. For adolescent boys, higher levels of acculturation were associated with a lowered preference for romantic partners who embrace familismo, which, in turn, were associated with stronger intentions to engage in sex in the near future. As the mother of the boy became more acculturated, this was associated with a weakened embracement of familismo on the part of the mother which, in turn, was associated with greater levels of acculturation on the part

of the boy. These, in turn, translated into stronger intentions to engage in sex by virtue of the mechanisms already discussed.

The Importance of Adolescent Gender

Several intriguing gender differences were observed, with stronger relationships between family processes and adolescent sexual behavior being observed for Latina girls than for Latino boys. Both nationally representative studies (Centers for Disease Control and Prevention 2008) and studies of Latino youth in the Bronx (Guilamo-Ramos et al. 2007b) indicate that Latino boys orient toward sexual activity at younger ages than do Latina girls. Our study indicates that some of these differences may be due to the extent to which family processes shape Latina adolescents' girls orientations toward sexual behavior. In the present study, it was not possible to explore the potential influence of gender roles, which could have provided additional insight into the observed differences between boys and girls. In addition, data from fathers was not available. It is possible that parental acculturation, values, and dating orientations differ by the gender of the parent. Future studies should explore these models of influence using mother–daughter dyads and father–son dyads in order to illuminate potential gender differences. Additional research is needed to identify other cultural and familial factors that may account for gender differences in sexual behavior between Latino boys and girls.

Limitations

The results of this study must, of course, be interpreted in the context of study limitations. The sample is not nationally representative and the parental data came only from the mother. Future research should explore these dynamics with Latino fathers and with larger samples of diverse Latino adolescents. The measures are subject to measurement error and this can bias parameter estimates. The indices of sexual activity relied on adolescent self-reports, which may be subject to bias. Finally, the data are cross-sectional in nature and causal influences are limited accordingly. Despite these limitations, there were many intriguing results that warrant discussion in the context of both practice and programming.

Summary and Implications for Prevention Programming and Practice

Previous research has tended to ignore mediating variables in the acculturation-sexual risk behavior relationship, instead focusing on simple direct relationships between the variables. In contrast, our study identified numerous mediating variables that can be targeted in prevention programming and practice with Latino families and adolescents. Our research has numerous applied implications.

First, consistent with previous research, our data are consistent with the idea that "parents matter" in influencing their adolescent's openness toward engaging in sexual intercourse (Hutchinson 2002; Jaccard and Dittus 2000). It further supports the development of parent-based interventions to reduce adolescent sexual activity (Kirby 2007). Latino parents need to know that they can make a difference,

especially given the assertion by some social scientists that Latino parents embrace *fatalismo*, or the belief that life is not controlled by individuals but shaped by a larger power that individuals cannot control. Such beliefs decrease parent–adolescent communication about sex (Benavides et al. 2006).

Second, Latino parents should be alerted to the risks associated with the formation of romantic relationships in adolescence, namely that the odds of a teen engaging in sexual intercourse increase substantially when adolescents are in romantic relationships. Although dating is a natural part of adolescence and a key part of learning to develop healthy social relationships, parents should know that unsupervised dating at early ages may be detrimental to adolescents by increasing the risk of early sexual behavior. Importantly, we found only a weak correlation between mother disapproval of a child dating and the child's perception of that disapproval. This underscores the need to inform parents that they need to convey their orientations more clearly and forcefully.

Third, we found evidence that, at least for adolescent girls, familismo has both protective and risk inducing dynamics. The risk-inducing dynamic is that higher levels of familismo lead to distorted views on the part of girls that their mothers approve of them dating boys, and this, in turn, raises the likelihood of them becoming romantically involved with boys and, in turn, engaging in sex. This dynamic should be addressed in prevention programs. The protective dynamic is that higher levels of familismo lead girls to prefer boys who are high in familismo which, in turn, lowers the probability of them engaging in sexual intercourse. These dynamics, taken together, show the complexity of addressing Latino cultural constructs. Adolescent familismo as a main effect does not have a strong association with adolescent sexual intercourse because of the canceling effects of the risk-inducing and the protective dynamics noted above. However, as the meditational analyses suggest, if we can negate the effects of familismo on adolescent perceptual distortions of parental disapproval of dating, then this should result in reductions in sexual risk taking. This showcases a rare scenario where a variable that has a low correlation with an outcome still has causal implications for that outcome.

Fourth, for adolescent boys, the primary causal chain that is risk inducing involves a somewhat different cluster of variables: Higher levels of acculturation were associated with lowered preferences for girl partners who embraced familsmo, which, in turn, increased the likelihood of engaging in sex with a female partner (presumably who is lower in familismo). This dynamic is particularly important to address in families where the mother is high in acculturation, since our data suggest that this leads to higher acculturation in boys.

Increasingly, there has been interest in developing targeted prevention programs for girls and boys, separately. The results of our study suggest that programs may need to target culturally-relevant messages to boys differently than to girls. For example, whereas acculturation was significantly related to both boys' and girls' intentions to have sexual intercourse, the potential mechanisms for intervention within the family system were notably different as a function of gender. Programmers should carefully consider how these cultural, contextual and social factors may operate for each gender. Overall, our findings suggest that acculturation, gender, social and familial factors all play an important role in shaping youth orientations toward sexual activity

and that practitioners and programmers should consider these factors carefully as they work with Latino adolescents and their families.

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