

# Cultural Measures Associated with Sexual Risk Behaviors Among Latino Youth in Southern California: A Longitudinal Study

**CONTEXT:** Cultural variables have been associated with sexual risk behaviors among Latino youth, but findings across studies are inconsistent.

**METHODS:** A longitudinal study of acculturation patterns followed Latino youth in Southern California from 2005 to 2012. Data from 995 participants were used in logistic and ordered regression analyses to test whether cultural variables measured in high school were associated with sexual risk behaviors in emerging adulthood, and whether gender moderated these associations.

**RESULTS:** The cultural value of respect for parents was negatively associated with participants' odds of reporting an earlier age at sexual debut (odds ratio, 0.8) and condom nonuse at most recent sexual intercourse (0.8). A measure of acculturation reflecting U.S. cultural practices was positively associated with the likelihood of being sexually experienced (1.2), having concurrent sexual partners (1.5) and, among males only, having a greater number of sexual partners (1.3). Second- and later-generation immigrant youth had lower odds of not using a condom at most recent sexual intercourse than first-generation youth (0.6 and 0.5, respectively). Strength of endorsement of Latino cultural practices was negatively associated with females' lifetime number of partners (0.8), but positively associated with males' (1.4).

**CONCLUSIONS:** The cultural measures associated with Latino youths' sexual behaviors differed across outcomes and by gender. Further understanding of these associations and their underlying mechanisms may help inform the development of culturally sensitive sexual health interventions.

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Latinos constitute the largest ethnic minority group in the United States and are a relatively youthful population. In 2011, 32% of Latinos were younger than 16, compared with 18% of whites.<sup>1</sup> Projections indicate that by 2025, Latinos will make up 28% of all youth aged 14–24.<sup>2</sup> These trends indicate that the health and welfare of Latino youth are of considerable national importance. However, a number of social and health—including sexual and reproductive health—disparities distinguish Latino youth from their counterparts in other racial and ethnic groups. Teenage pregnancy rates have dropped across all racial and ethnic groups in the United States since 1990, but the decline has been less pronounced among Latinas than among others. Between 1990 and 2008, the teenage pregnancy rate declined by 34% among Latinas, but by 50% among whites.<sup>3</sup> Furthermore, in 2010, the birthrate for Latinas aged 15–19 was twice that of their white peers.<sup>4</sup> Disparities also exist in rates of STDs, including gonorrhea, chlamydia and syphilis: Higher rates are found among Latino youth aged 15–24 than among whites of the same ages.<sup>5</sup>

Sexual risk behaviors represent an important contributor to these disparities. Nationwide, although levels of a number of sexual risk behaviors declined among white and black high school students between 1991 and 2009, similar declines did not occur among Latino students.<sup>6</sup> Additionally, among sexually active Latino high school

students, condom use at last intercourse increased from 1991 to 2007, but declined between 2007 and 2009.<sup>6</sup>

While a significant portion of youth from all racial and ethnic groups engage in sexual risk behaviors that may have negative consequences for their health and well-being, Latino youth may be at especially high risk. In addition to structural, social and environmental factors that contribute to sexual risk behaviors,<sup>7</sup> scholars have theorized that cultural factors have an impact.<sup>8–10</sup> In this study, we examine how several cultural variables relate to the sexual behaviors of Latino youth and test whether associations differ by gender.

## BACKGROUND

Although scholars continue to debate the definition of “culture,” in this article, we conceptualize culture as a set of explicit and implicit guidelines that individuals learn as members of a particular ethnic group.<sup>11</sup> Culture influences people's lives in areas such as language, diet, dress and gender norms.<sup>11</sup> Additionally, it informs “sexual scripts”—guidelines that shape how individuals behave during sexual interactions.<sup>12,13</sup> Despite its impact on sexual behaviors across racial and ethnic groups, most sexual health programs fail to address how culture affects sexual behaviors. In a literature review of sexual health behavior interventions for Latino youth, Cardoza et al. reported that few programs addressed salient cultural values.<sup>14</sup>

Research examining associations between cultural variables and Latino youths' sexual behaviors has focused on acculturation processes. Acculturation is defined as the cultural change that occurs when individuals from dissimilar cultures come into continuous contact with each other.<sup>15</sup> It typically describes the process in which those from immigrant and minority groups interact with—and, to varying degrees, adapt to, integrate and adopt—the cultural orientations of the dominant group. Acculturation is a complex process, involving changes across multiple domains, including cultural practices (e.g., language use, media preferences and social affiliations), values (e.g., belief systems, such as collectivism and individualism) and identities (e.g., attachments to particular groups).<sup>16</sup>

Despite the complexities of acculturation, most studies measure it with proxy indicators such as language spoken at home, immigrant generation or nativity.<sup>10</sup> These measures assume that acculturation is a unidimensional process whereby immigrants and their descendants lose their culture of heritage as they adopt practices, values and identities associated with their new host society.<sup>16</sup> However, recent theory argues, and empirical studies confirm,<sup>16,17</sup> that this portrayal of acculturation is not accurate. Immigrants and their descendants commonly retain certain aspects of their cultural heritage as they incorporate certain aspects of the culture of a new society. The most comprehensive and sophisticated measures of acculturation separately examine retention of heritage culture and adoption of receiving culture.<sup>16</sup> However, only a few studies in the sexual and reproductive health field have taken this bidimensional approach.<sup>18,19</sup>

Research on acculturation and sexual risk behaviors among Latino youth has yielded inconsistent results. Some studies have found positive associations between levels of sexual risk behaviors and Latino youths' U.S. cultural orientation, as reflected in use of English or having been born in the United States,<sup>20,21</sup> whereas others have found no associations between acculturation indices and sexual risk behaviors<sup>22,23</sup> or have found evidence of reduced levels of sexual risk behaviors in youth who are more oriented toward the United States.<sup>24</sup> The inconsistencies in these results may be due to differences in the measures of acculturation used or in the samples studied, but they also may reflect that acculturation has varying associations with different sexual outcomes.<sup>25,26</sup> For example, in a study using data from the National Longitudinal Survey of Youth, participants who were less acculturated to mainstream U.S. culture (i.e., who were first-generation or were primarily Spanish-speaking) were more likely to delay sexual intercourse than were more acculturated youth, but they were less likely to use contraceptives consistently.<sup>26</sup>

Traditional gender roles represent another cultural construct theorized to influence sexual behaviors among Latino youth. For females, traditional gender roles are shaped by the value of *marianismo*, which espouses that women's behavior should emulate the Virgin Mary.<sup>9</sup> According to *marianismo*, women are expected to remain abstinent until

marriage, not to be knowledgeable about sex, to be submissive and obedient in relationships, and to be devoted to family.<sup>9,27</sup> Although *marianismo* may be protective by leading women to delay sexual debut and have relatively small numbers of partners, it also can lead to increased risks by making it difficult for Latinas to negotiate safer sex with their partners or to communicate their sexual needs.<sup>9</sup>

For males, traditional gender norms are shaped by *machismo*, which defines masculinity in terms of virility and aggression,<sup>8</sup> as well as protection of the family, responsibility and hard work.<sup>28</sup> For men, penetrative sex and procreation are seen as reflections of manhood, and men are encouraged to believe they cannot control their sexual impulses, which may make condom use difficult once they have been aroused.<sup>9</sup> *Machismo* may be associated with risks such as multiple sexual partners and early sexual debut, but may instill protective behaviors, such as condom use, if men feel responsibility to protect their partners.<sup>9</sup>

Although gender norms are theorized to be important, few studies have directly tested their associations with the sexual behaviors of Latino youth. One study, involving 670 Latina adolescents recruited from two publicly funded family planning clinics, found that a more traditional gender role orientation was associated with older age at sexual debut, but was not associated with lifetime number of sexual partners or past pregnancies.<sup>21</sup> The authors argued that traditional gender norms may play a role in adolescents' delaying first intercourse, but that once women become sexually active, other factors, such as acculturation and substance experimentation, may be more influential on sexual risk-taking.<sup>21</sup> By contrast, another study<sup>27</sup> found no association between gender roles and condom use intentions or past condom use among Latino adolescents, although religiosity was positively associated with past condom use.

Familism is another cultural value theorized to influence Latino youths' sexual behavior. Familism stresses interdependence among nuclear and extended family members for support, emotional connectedness, familial honor, loyalty and solidarity.<sup>29</sup> Familistic attitudes may encourage youth to practice safer-sex behaviors because a network of family members may provide support and hold youth accountable for their behavior.<sup>9</sup> One study, with a random sample of 702 Latino adolescent eighth graders in New York City, found that familism scores were negatively associated with sexual risk behaviors, but only among females.<sup>22</sup> Another study found no association between familism and condom use intentions or past condom use among Latino adolescents.<sup>27</sup>

Respect and fatalism are also values theorized as relevant to Latino youths' sexual behaviors, but empirical research testing possible associations is limited. Respect reflects the value of showing respect and honor to one's parents and other authority figures<sup>9</sup>; it may motivate or obligate youth to practice safer behaviors. Fatalism is the belief that events in one's life are a result of factors outside of one's control. It may be linked with feelings of helplessness and the belief that efforts to protect oneself from HIV or other sexual health risks are in vain.<sup>9</sup>

In the present study, we build on the range of cultural variables that have been studied in relationship to Latino youths' sexual risk behaviors. We examine whether cultural constructs measured in high school are associated with Latino youths' sexual risk behaviors in emerging adulthood. We also test whether gender moderates these associations.

We had four hypotheses. First, we expected to find that the cultural values of familism and respect were negatively associated with sexual risk behaviors in this sample, but that fatalism was positively associated with sexual risks. Second, we hypothesized that acculturation to U.S. cultural practices was positively associated with earlier age at sexual debut, lifetime number of sexual partners, use of alcohol or drugs before last sex, reports of concurrent sexual partners and use of a condom at last sex; we expected retention of Latino cultural practices to have opposite patterns of associations. Third, we expected to find that first-generation youth initiated sex at a later age and had had fewer partners than second- and later-generation youth, but that they were less likely to have used a condom at most recent intercourse. Finally, we hypothesized that cultural measures had different patterns of association with the sexual risk behaviors of female and male study participants. Among females, we expected traditional gender role scores to be positively associated with age at sexual debut and negatively associated with lifetime number of partners and condom use at most recent intercourse. Among males, we hypothesized that these scores were negatively associated with age at sexual debut and condom use at most recent sex, and positively associated with lifetime number of partners.

## **METHODS**

### **Participants**

Our data source was Project RED (Reteniendo y Entendiendo Diversidad para Salud, or Retaining and Understanding Diversity for Health), a longitudinal study of acculturation patterns and substance use among Latino adolescents in Southern California.<sup>30</sup> In 2005, ninth-grade students were recruited from seven Los Angeles County public high schools with predominantly Latino student bodies. Schools were invited to participate if 70% or more of students identified themselves as Hispanic or Latino, as indicated by data from the California Board of Education. Trained research assistants visited students' classrooms. They explained the study purpose, distributed parental consent forms, and returned at a later date to collect the signed forms and obtain students' assent. After this, surveys (which were available in both English and Spanish) were self-administered in the classroom. School principals or district superintendents provided approval for the study. All study procedures were also approved by the University of Southern California's institutional review board.

Ninth graders at the participating schools were eligible to participate if they provided parental consent and student assent. A total of 3,218 students were invited to participate; 2,420 provided both parental consent and student assent,

and 2,222 completed the ninth-grade survey. Of these participants, 1,963 identified themselves as Hispanic or Latino, or reported a Latin American country as their own or their family's country of origin.

Participants completed follow-up surveys in the 10th and 11th grades, in 2006 and 2007. Between the ninth- and 10th-grade surveys, students from one school were transferred to a new school, and this school was incorporated into the sample. All 10th-grade students at this school were invited to participate in the study, resulting in a sample of 2,731, including 2,400 Latinos. Intensive tracking was done to try to locate participants who were absent or had transferred schools or dropped out of school between waves. Data collectors called missing participants multiple times during the evenings and administered surveys by phone.

From November 2010 to December 2012, the study team attempted to reestablish contact with Latino respondents from the earlier surveys, to invite them to participate in an emerging adulthood survey. Researchers used multiple methods to find participants: mailed letters, phone calls, e-mails, social media posts, and communication with family or friends listed as contacts. These procedures yielded valid contact information for 2,151 participants, and of these, 1,388 completed the emerging adulthood survey. Participants had the option to complete the survey by phone or online.

All participants were compensated with a gift worth approximately \$5 for each high school survey and \$20 for the emerging adulthood survey; they were also compensated \$3 for updating contact information between waves.

Our analyses use data from Latino participants who responded to the 10th-grade and emerging adulthood surveys, and who provided data for all study outcomes and covariates. We used the 10th-grade survey rather than the ninth-grade survey because the number of participants at this wave was higher as a result of the inclusion of the new school. For participants with missing data on variables that were not time-varying, we used data from the ninth-grade survey, if available. In total, 995 participants (of 1,276 who were eligible) were included in our analyses.

### **Measures**

Sexual behaviors were measured as part of the emerging adulthood survey. Questions were adapted from the Youth Risk Behavior Survey.<sup>31</sup> Sexual initiation and age at sexual debut were determined from responses to the question "How old were you when you first had sexual intercourse?" Response options ranged from "11 or younger" to "20 years or more," or respondents could select "I have never had sexual intercourse." Twenty participants did not respond to this question but answered other questions indicating that they had had intercourse, and were recoded as having done so. Age at sexual debut was recoded as an ordinal measure with six categories, ranging from 14 or younger to 19 or older.

Condom use at last sexual intercourse was based on responses to the question "The last time you had sexual intercourse, did you or your partner use a condom?" Use of

**TABLE 1. Selected characteristics of 10th graders participating in a longitudinal study of cultural measures associated with Latino youths' sexual risk behaviors, Los Angeles County, 2006–2007**

Characteristic	% or mean (N=995)
<b>Age</b>	
14	7.0
15	85.6
16	7.2
≥17	0.2
<b>Gender</b>	
Male	41.5
Female	58.5
<b>Parent's highest education</b>	
≤8th grade	15.9
Some high school	21.4
High school graduate	18.5
≥some college	30.7
Don't know	13.6
<b>Mean household crowding index (range, 0.4–7.0)†</b>	1.8 (0.8)
<b>Immigrant generation</b>	
First	11.5
Second	75.9
≥third	12.7
<b>Mean Latino cultural practices score (range, 1–5)</b>	3.2 (1.0)
<b>Mean U.S. cultural practices score (range, 1–5)</b>	4.0 (0.6)
<b>Mean traditional gender roles score (range, 1–4)</b>	2.0 (0.6)
<b>Mean familism score (range, 1–4)</b>	3.4 (0.6)
<b>Mean respect for parents score (range, 1–4)</b>	3.7 (0.5)
<b>Mean fatalism score (range, 1–4)</b>	2.8 (0.7)

Notes: Unless otherwise noted, data are percentages. Figures in parentheses are standard deviations. †Number of persons per room (excluding kitchen and bathroom) in participant's home.

alcohol or drugs at the time of last intercourse was based on response to the question “Did you drink alcohol or use drugs before you had sexual intercourse the last time?” Participants' lifetime number of sexual partners was measured using the question “During your life, with how many people have you had sexual intercourse?” This measure was recoded as a four-category ordinal measure (one to six or more). Concurrent sexual partners was assessed with the question “Do you have more than one current sexual partner?”

Cultural variables and covariates were measured in the 10th-grade survey. Acculturation was measured using a 13-item bidimensional scale, adapted from the Revised Acculturation Rating Scale for Mexican-Americans.<sup>30,32</sup> The two subscales measured U.S. cultural and Latino cultural practices. Scale items asked about language use, media preferences and social affiliations (e.g., “I enjoy Spanish language TV,” and “My friends are of Anglo or White origin”). Items were rated on a five-point Likert scale, ranging from 1 (“not at all”) to 5 (“almost always/extremely often”). Reliability was high (Cronbach's alphas, 0.73 for the U.S. subscale and 0.91 for the Latino).

\*Participants who immigrated to the United States at age 10 or younger could be considered to be 1.5-generation; since 93% of first-generation participants fit this description, we did not include 1.5 generation as a separate category.

Four cultural values were measured, using items adapted from cultural values scales employed in previous studies.<sup>29,33,34</sup> Familism was measured using a four-item scale (e.g., “If anyone in my family needed help, we would all be there to help”); response options ranged from 1 (“definitely no”) to 4 (“definitely yes”). Respect for parents was measured using a four-item scale (e.g., “I want to be a good person so that people know that my parents raised me right”); response options ranged from 1 (“definitely no”) to 4 (“definitely yes”). Traditional gender roles were measured using a seven-item scale (e.g., “Parents should maintain stricter control over their daughters than their sons”); response options ranged from 1 (“strongly disagree”) to 4 (“strongly agree”). Fatalism was measured with a four-item scale (e.g., “I don't plan ahead because most things in life are a matter of luck”); response options ranged from 1 (“definitely no”) to 4 (“definitely yes”). Scale reliability was high for all four measures (Cronbach's alphas, 0.77–0.87).

Immigrant generation was measured using questions that asked youth about their birthplace and the birthplace of their parents. Youth who were born outside the United States were classified as first-generation. Those who were born in the United States and who reported that one or both parents were born outside the United States were classified as second-generation. Those who reported that they and their parents were all born in the United States were classified as third- or later-generation.\*

The covariates included in our primary analyses were variables that have previously been associated with Latino youth sexual risk behaviors: gender, age and two measures of socioeconomic status.<sup>35</sup> One measure of socioeconomic status was household crowding, calculated as the total number of persons living in the respondent's home divided by the total number of rooms in the home (excluding the bathroom and the kitchen); a household with more than one person per room is classified as overcrowded.<sup>36</sup> The other socioeconomic measure, parents' education level, was the highest level of schooling attained by the respondent's better educated parent. If one parent's education was missing, the other parent's education was used. A dummy indicator was created for respondents who did not know their parents' education.

### Analysis

We calculated descriptive statistics for all variables (means for continuous measures and proportions for categorical measures). Next, we examined unadjusted associations between each cultural measure and the outcome variables by estimating bivariate logistic regression models for dichotomous outcomes and bivariate ordered regression models for ordered outcomes. Age at sexual debut was reverse-coded so the model outcome was an earlier age at sexual debut. Next, we determined adjusted associations between the cultural measures and the outcomes by estimating multivariable logistic and ordered regression models that controlled for age, gender and the two socioeconomic measures. We entered all cultural scales as z-scores. To test whether the assumption of proportional odds held in the ordered

logistic regression models, we performed the Brant test. A nonsignificant Brant test statistic indicates that the proportional odds assumption is not violated.<sup>37</sup> To determine whether gender interacted with any of the cultural variables, we created product terms between gender and each cultural variable, and entered all of these variables as the last step in our multivariable models. Where we found evidence of a statistically significant interaction, we estimated gender-stratified models. Finally, we conducted descriptive analysis to clarify whether sexual debut occurred before or after the time point when the cultural variables were measured. All analyses were conducted using Stata version 11.2.

### Attrition

Of the 2,400 Latino youth who participated in the 10th-grade survey, 53% also participated in the emerging adulthood survey. Compared with participants who were followed from 10th grade to emerging adulthood, those lost to attrition were significantly more likely to be males (54% vs. 41%), to be first-generation (17% vs. 13%) and to not know their parents' education level (22% vs. 16%). Those lost to attrition were less likely than those who were followed to be second-generation (71% vs. 76%) and to report a parental education level of some college or more (22% vs. 28%).

## RESULTS

### Sample Characteristics

The majority of participants (86%) were aged 15 in 10th grade (Table 1). Fifty-nine percent were females. Sixteen percent of respondents reported that their parents had completed eight or fewer years of education, 21% that their parents had some high school education, 19% that their parents had graduated from high school, and 31% that their parents had some college or higher education; 14% did not know their parents' level of schooling. On average, there were 1.8 persons per room in participants' homes. Seventy-six percent of respondents were second-generation immigrants, 12% were first-generation, and 13% were third- or later-generation. Among first-generation youth, 71% had immigrated to the United States at age five or younger, and 93% at age 10 or younger (not shown). Seventy-seven percent of participants identified themselves as Mexican or Mexican American, 6% as Central American and 2% as South American; 16% identified themselves only as Hispanic or Latino. Among the cultural measures, scores were highest for the scales measuring U.S. cultural practices and respect for parents (means, 4.0 and 3.7, respectively), and lowest for the scales measuring traditional gender norms and fatalism (2.0 and 2.8).

At the time of the emerging adulthood survey, participants' mean age was 19.8 years (standard deviation, 0.6). The vast majority (84%) reported having initiated sex (Table 2). Among sexually experienced participants, 13% had been 14 or younger at sexual debut, and 29% had been 18 or older. Eighteen percent reported six or more sexual partners in their lifetime. Forty-three percent indicated they

**TABLE 2. Percentage distribution of participants, by sexual risk behavior reported on emerging adulthood survey, according to gender**

Behavior	Total	Male	Female
ALL	(N=995)	(N=413)	(N=582)
<b>Ever had sex**</b>			
Yes	84.0	88.1	81.1
No	16.0	11.9	18.9
<b>SEXUALLY EXPERIENCED†</b>	(N=763)	(N=333)	(N=430)
<b>Age at sexual debut**</b>			
≤14	12.8	16.8	9.8
15	16.3	17.4	15.4
16	20.5	23.1	18.4
17	21.4	19.5	22.8
18	18.5	15.0	21.2
≥19	10.6	8.1	12.6
<b>Lifetime number of partners***</b>			
1	29.2	15.6	39.8
2–3	33.4	29.1	36.7
4–5	19.8	25.2	15.6
≥6	17.6	30.0	7.9
<b>Used a condom at last sex**</b>			
Yes	57.5	64.6	52.1
No	42.5	35.4	47.9
<b>Used alcohol/ drugs before last sex***</b>			
Yes	12.5	18.0	8.1
No	87.6	82.0	91.9
<b>&gt;1 current partner***</b>			
Yes	10.0	18.3	3.5
No	90.0	81.7	96.5
Total	100.0	100.0	100.0

\*\*p<.01. \*\*\*p<.001. †Limited to those who answered all questions on sexual risk behaviors.

had not used a condom the last time they had intercourse, and 13% reported having consumed alcohol or used drugs before last sex. Ten percent of sexually experienced participants reported more than one current partner. Males reported riskier sexual behaviors than females on all outcomes except condom use at last intercourse. For example, 30% of sexually experienced males reported having had six or more partners, compared with 8% of females. Thirty-five percent and 48%, respectively, reported not having used a condom at last intercourse. Sixty-eight percent of sexually experienced participants reported an age at sexual debut that was older than their age at the 10th-grade survey, and 30% reported an age of sexual debut that was the same as or younger than their age at the 10th-grade survey; 2% were missing data on age at sexual debut.

### Bivariate Results

In the bivariate analyses, all of the cultural measures except fatalism were associated with one or more outcomes (Table 3). Scores on Latino cultural practices were negatively associated with participants' odds of reporting alcohol or drug use before last sex (odds ratio, 0.7) and a greater lifetime number of partners (0.8). Scores on U.S. cultural practices were positively associated with participants' lifetime number of partners (1.2) and with their odds of reporting concurrent partners (1.4). The higher participants'



**TABLE 3. Odds ratios (and 95% confidence intervals) from bivariate regression analyses assessing associations between cultural measures in 10th grade and sexual risk behaviors in emerging adulthood**

Cultural measure	Ever had sex	Earlier age at sexual debut†	No condom use at last sex	Used alcohol/ drugs before last sex	>1 current partner	Higher lifetime no. of partners‡
Latino cultural practices	0.88 (0.73–1.06)	0.92 (0.80–1.06)	1.01 (0.86–1.18)	0.73 (0.57–0.92)	1.04 (0.80–1.35)	0.80 (0.69–0.92)
U.S. cultural practices	1.17 (0.98–1.39)	0.94 (0.82–1.07)	0.87 (0.75–1.02)	0.94 (0.75–1.17)	1.44 (1.08–1.93)	1.20 (1.04–1.37)
Traditional gender roles	1.34 (1.11–1.61)	1.19 (1.05–1.35)	0.96 (0.83–1.11)	1.23 (1.00–1.52)	1.58 (1.26–1.98)	1.36 (1.20–1.55)
Respect for parents	0.86 (0.70–1.06)	0.76 (0.67–0.87)	0.86 (0.74–1.00)	0.89 (0.72–1.11)	0.88 (0.70–1.10)	0.79 (0.69–0.91)
Familism	0.95 (0.79–1.15)	0.89 (0.78–1.02)	0.98 (0.85–1.14)	1.00 (0.80–1.25)	0.87 (0.69–1.09)	0.83 (0.73–0.95)
Fatalism	1.00 (0.85–1.18)	0.96 (0.85–1.09)	0.95 (0.82–1.09)	1.02 (0.83–1.26)	0.89 (0.70–1.12)	0.91 (0.80–1.03)
Immigrant generation						
First (ref)	1.00	1.00	1.00	1.00	1.00	1.00
Second	0.91 (0.53–1.56)	1.10 (0.74–1.63)	0.61 (0.39–0.94)	1.20 (0.58–2.51)	1.02 (0.49–2.14)	1.35 (0.90–2.01)
≥third	1.78 (0.82–3.88)	1.26 (0.76–2.08)	0.54 (0.31–0.96)	2.45 (1.06–5.67)	1.14 (0.45–2.89)	2.49 (1.49–4.14)

†Age at sexual debut was modeled as an ordinal outcome with categories from 14 or younger to 19 or older. The model predicted a younger versus older age at sexual debut. ‡Lifetime number of partners was modeled as an ordinal outcome with categories from one to six or more. The model predicted a higher versus lower number of sexual partners. Notes: Data in the last five columns are based on sexually experienced participants who answered all questions on sexual risk behaviors. All cultural scales were entered into the models as z-scores. ref=reference category.

**TABLE 4. Odds ratios (and 95% confidence intervals) from multivariable regression analyses assessing associations between cultural and demographic measures in 10th grade and sexual risk behaviors in emerging adulthood**

Measure	Ever had sex	Earlier age at sexual debut†	No condom use at last sex	Used alcohol/ drugs before last sex	>1 current partner
<b>Cultural</b>					
Latino cultural practices	0.98 (0.79–1.22)	0.99 (0.85–1.16)	0.97 (0.81–1.16)	0.84 (0.64–1.11)	1.26 (0.92–1.72)
U.S. cultural practices	1.21 (1.00–1.46)	0.95 (0.82–1.09)	0.89 (0.76–1.05)	0.88 (0.69–1.12)	1.51 (1.10–2.07)
Traditional gender roles	1.29 (1.05–1.59)	1.12 (0.96–1.29)	1.13 (0.95–1.34)	1.02 (0.80–1.30)	1.25 (0.96–1.64)
Respect for parents	0.86 (0.68–1.09)	0.78 (0.68–0.91)	0.82 (0.68–0.98)	0.93 (0.73–1.20)	0.98 (0.74–1.29)
Familism	1.00 (0.81–1.24)	1.01 (0.87–1.17)	1.08 (0.90–1.28)	1.07 (0.82–1.39)	0.87 (0.65–1.16)
Fatalism	1.03 (0.86–1.22)	0.98 (0.86–1.12)	0.92 (0.79–1.07)	1.08 (0.86–1.35)	0.96 (0.74–1.24)
Immigrant generation					
First (ref)	1.00	1.00	1.00	1.00	1.00
Second	0.94 (0.54–1.64)	1.11 (0.74–1.67)	0.59 (0.37–0.93)	1.21 (0.57–2.58)	0.91 (0.41–2.01)
≥third	1.71 (0.73–3.98)	1.25 (0.71–2.19)	0.48 (0.25–0.91)	2.09 (0.80–5.46)	1.06 (0.36–3.14)
<b>Demographic</b>					
Age	1.47 (0.92–2.34)	0.70 (0.50–0.96)	1.14 (0.77–1.68)	1.10 (0.63–1.92)	0.98 (0.53–1.83)
Gender					
Female	0.71 (0.47–1.06)	0.67 (0.50–0.90)	2.02 (1.43–2.87)	0.42 (0.25–0.70)	0.19 (0.10–0.36)
Male (ref)	1.00	1.00	1.00	1.00	1.00
Household crowding index	1.03 (0.83–1.28)	1.17 (0.99–1.38)	1.02 (0.84–1.23)	0.96 (0.71–1.29)	1.00 (0.72–1.40)
Parent's highest education					
≤8th grade	1.00	1.00	1.00	1.00	1.00
Some high school	1.31 (0.74–2.33)	1.31 (0.86–2.01)	1.37 (0.84–2.24)	1.21 (0.56–2.65)	0.57 (0.20–1.61)
High school graduate	1.09 (0.60–1.97)	1.44 (0.92–2.24)	1.37 (0.82–2.30)	1.79 (0.83–3.82)	1.41 (0.57–3.46)
≥some college	1.01 (0.59–1.73)	1.54 (1.01–2.33)	1.52 (0.94–2.45)	0.87 (0.40–1.90)	1.76 (0.75–4.17)
Don't know	0.79 (0.43–1.44)	1.52 (0.93–2.49)	1.16 (0.65–2.06)	0.83 (0.32–2.10)	1.28 (0.47–3.49)

†Age at sexual debut was modeled as an ordinal outcome with categories from 14 or younger to 19 or older. The model predicted a younger versus older age at sexual debut. Notes: Data in the last four columns are based on sexually experienced participants who answered all questions on sexual risk behaviors. All cultural scales were entered into the models as z-scores. ref=reference category.

traditional gender roles score, the greater their odds of reporting sexual experience (1.3), an earlier age at sexual debut (1.2), higher lifetime numbers of partners (1.4) and concurrent partners (1.6). Respect for parents was inversely associated with age at sexual debut (0.8) and lifetime number of partners (0.8). Familism also was inversely associated

with lifetime number of partners (0.8). Finally, second- and later-generation youth had lower odds than first-generation youth of not using a condom at last intercourse (0.6 and 0.5, respectively). Third- or later-generation youth had elevated odds of having used alcohol or drugs before last sex (2.5) and of having had more partners (2.5).

## Multivariable Results

We found no evidence of statistical interaction between gender and the cultural measures for five of our six outcomes (all but lifetime number of partners), indicating that the cultural measures had the same associations with these outcomes for females and males. In our multivariable analysis, we therefore ran gender-stratified models only for lifetime number of partners.

Scores on U.S. cultural practices and traditional gender roles were positively associated with participants' likelihood of ever having had sexual intercourse (odds ratios, 1.2 and 1.3, respectively—Table 4). Among sexually active participants, higher scores on U.S. cultural practices were associated with higher odds of reporting concurrent sexual partners (1.5). Additionally, as scores on respect for parents increased, participants' odds of reporting an earlier age at sexual debut and nonuse of condoms at last intercourse declined (0.8 for each). Immigrant generation was also associated with condom use at last sexual intercourse. Second- and later-generation youth had lower odds than first-generation respondents of not having used a condom (0.6 and 0.5, respectively).

In our gender-stratified analysis, Latino cultural practices were associated with the number of partners reported by both male and female respondents, but the associations were in opposite directions (Table 5). The stronger the endorsement of Latino cultural practices, the lower the odds that females reported more sexual partners (odds ratio, 0.8), but the greater the odds that males did so (1.4). Among males only, U.S. cultural practice scores were positively associated with the odds of reporting more partners (1.3). Among females only, those who were third- or later-generation had higher odds than first-generation youth of reporting more sexual partners (2.6).

## DISCUSSION

In the present study, we used longitudinal data to examine associations between several cultural measures and Latino youths' sexual risk behaviors. We found that distinct cultural variables were associated with Latino youths' sexual risk behaviors. Two cultural values (i.e., traditional gender roles and respect for parents), Latino and U.S. cultural practices, and immigrant generation were all associated with at least one of the sexual outcomes, but the measures that were significant depended on the outcome in question. For example, only the value of respect was associated with age at sexual debut, and only strength of endorsement of U.S. cultural practices was associated with having concurrent sexual partnerships. Qualitative research may help to shed light on why specific cultural measures are associated with particular sexual outcomes and not others.

We found some evidence that the same cultural measure could, paradoxically, have associations with both risk behaviors and protective behaviors. For example, among females, third- or later-generation youth had elevated odds of reporting more sex partners, but among both genders, second- and later-generation youth had elevated odds of

**TABLE 5. Odds ratios (and 95% confidence intervals) from multivariable regression analyses assessing associations between cultural and demographic measures in 10th grade and lifetime number of partners in emerging adulthood, by gender**

Measure	Female	Male
<b>Cultural</b>		
Latino cultural practices	0.77 (0.62–0.96)	1.36 (1.04–1.79)
U.S. cultural practices	1.11 (0.92–1.35)	1.28 (1.01–1.63)
Traditional gender roles	1.02 (0.80–1.29)	1.16 (0.95–1.42)
Respect for parents	0.79 (0.63–1.01)	0.94 (0.76–1.16)
Familism	0.93 (0.76–1.14)	0.83 (0.66–1.06)
Fatalism	0.89 (0.74–1.06)	1.12 (0.92–1.36)
Immigrant generation		
First (ref)	1.00	1.00
Second	1.26 (0.70–2.26)	1.20 (0.64–2.25)
≥third	2.58 (1.17–5.69)	1.95 (0.80–4.72)
<b>Demographic</b>		
Age	0.80 (0.49–1.32)	1.04 (0.63–1.72)
Household crowding index	1.19 (0.95–1.50)	0.88 (0.67–1.14)
Parent's highest education		
≤8th grade	1.00	1.00
Some high school	0.87 (0.49–1.55)	1.06 (0.52–2.14)
High school graduate	1.39 (0.75–2.57)	1.26 (0.64–2.50)
≥some college	1.42 (0.82–2.46)	1.26 (0.65–2.43)
Don't know	0.80 (0.39–1.65)	1.21 (0.58–2.51)

Notes: Lifetime number of partners was modeled as an ordinal outcome with categories from one to six or more. The model predicted a higher versus lower number of sexual partners. Data are based on sexually experienced participants who answered all questions on sexual risk behaviors. All cultural scales were entered into the models as z-scores. ref=reference category.

reporting condom use at last intercourse. Other scholars have reported similar discrepant findings.<sup>26</sup> These results underscore the importance of not overgeneralizing about the links between cultural variables and sexual risk behavior, because the association depends on the outcome in question.<sup>9</sup>

Consistent with other studies,<sup>20,21</sup> ours found that acculturation to U.S. cultural practices was positively associated with several sexual risk behaviors. However, this was not the case across all behaviors. Stronger U.S. cultural practices were not associated with an earlier age at sexual debut, with unprotected sex at most recent intercourse, or with alcohol or drug use before last sex. Additionally, both U.S. and Latino cultural practices were associated with lifetime number of partners. This result indicates the importance of measuring acculturation using bidimensional, rather than unidimensional, measures. Other studies that have used bidimensional measures of acculturation have found that both U.S. cultural practices and Latino cultural practices are associated with sexual risk behaviors.<sup>18,19</sup>

Our findings also point to the importance of using direct scales, rather than proxy measures, to measure acculturation. We included both immigrant generation (a commonly used proxy measure for acculturation) and direct acculturation scales in our models, and found that these measures had different associations with the outcomes. Immigrant generation may represent other, noncultural variables—for example, access to resources or information, social networks, relationship characteristics or structural barriers. Other research has found that immigrant generation does not appear to provide an index of acculturation, especially when some families remain in ethnic enclaves

for several generations before moving to more diverse neighborhoods.<sup>38</sup>

We also found that some cultural measures had different associations with the sexual behaviors of male and female youth, as has been reported previously.<sup>22</sup> One of the most striking findings was that Latino cultural practices had a negative association with the lifetime number of sexual partners for females and a positive association for males. This finding may reflect double standards for sexual behavior for females and males, which have been found in previous studies with Latino youth<sup>8</sup> and are common across many world cultures.

Among males only, stronger endorsement of U.S. cultural practices was associated with reporting a greater lifetime number of sexual partners. Both U.S. and Latino cultural streams may be supportive of males' having multiple sexual partners.

Among females only, third- and later-generation participants had higher odds than first-generation participants of reporting more partners. Thus, while sexual behaviors appear to change across immigrant generations among females, the same is not true among males. This finding may reflect changes in attitudes surrounding teenage sexuality across immigrant generations,<sup>39</sup> which may be more pronounced among females, who tend to have more conservative attitudes to begin with.<sup>39</sup> However, it may also reflect differences in marriage patterns. First-generation Latino youth are more likely than later-generation Latino youth to be married,<sup>39</sup> which may contribute to their having fewer sexual partners, and this may be particularly true for females, who delay sex longer.

### Strengths and Limitations

One strength of our study is the use of a longitudinal data set. We measured the cultural variables when participants were in 10th grade, and sexual behaviors when they were emerging adults. Our study also examined multiple cultural variables that had not previously been analyzed together, and we used a bidimensional acculturation scale, whereas most previous research on acculturation has relied on proxy measures or unidimensional scales.<sup>10</sup>

Limitations of our research include the use of self-reported measures of sexual behavior, which may be subject to social desirability biases. Additionally, we did not collect data on participants' contraceptive use. We also do not have information about relationship characteristics, which are associated with sexual behaviors and condom use.<sup>40</sup> Another limitation of our study pertains to the generalizability of the findings. Our sample consisted of Latino youth in Los Angeles County recruited from public high schools. Given the characteristics of the Latino population in the region, our sample was made up predominantly of U.S.-born Mexican American youth. The majority of first-generation immigrants had immigrated as young children; they therefore may be more similar to second-generation immigrant youth than to individuals who immigrated in later childhood or during adolescence.

We do not know how the present findings might have differed had the study been conducted with Latino youth from other U.S. regions, those from largely non-Mexican backgrounds or recent immigrants. Additionally, 47% of the sample were lost to follow-up in emerging adulthood, and we do not know the extent to which our results might apply to those youth, who disproportionately were male, were first-generation and reported relatively low parental education. Finally, although we measured sexual behaviors in the emerging adulthood survey, some participants may have initiated sexual activity prior to the 10th-grade survey, when the cultural variables were measured. Our analysis of the timing of events indicated that for the vast majority of participants, the cultural variables were measured before sexual activity occurred. Additionally, because many measures asked about the most recent sexual encounter, even among those who initiated sexual activity before the 10th-grade survey, these outcomes likely occurred afterward.

### Conclusion

Relatively few culturally informed sexual health programs have been developed for Latino youth.<sup>14,41</sup> Our findings point to several cultural variables that deserve further attention as possible targets of future sexual health interventions. These measures need to be evaluated in intervention studies to determine whether they can be manipulated and whether they are causally related to sexual behaviors. Individuals designing sexual health programs for Latino youth may also need to be sensitive to gender differences in cultural factors.

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