Acculturation and Sexual Risk Behaviors Among Latina Adolescents Transitioning to Young Adulthood

Jieha Lee • Hyeouk Chris Hahm

Abstract Latinas in the United States are at a disproportionate risk for STDs and sexual risk behaviors. Among Latinas, acculturation has been found to be one of the most important predictors of these behaviors. Therefore, this study examined the longitudinal association between Latina adolescents’ level of acculturation and multiple sexual risk outcomes, including self-report STD diagnosis, four or more life-time sex partners, regret of sexual initiation after alcohol use, and lack of condom use during young adulthood. Based on the National Longitudinal Study of Adolescent Health (Add Health), this study includes a nationally representative sample of 1,073 Latina adolescents (ages 11–20 at Wave 1) transitioning into young adulthood (ages 18–27 at Wave 3). Our findings indicate that more acculturated Latinas who spoke English at home were more likely to have STDs and to exhibit sexual risk behaviors than Latinas who were foreign-born and did not use English at home. Interventions that aim to promote sexual and reproductive health among young Latinas should take into consideration their different levels of acculturation. This approach holds greater potential for reducing health disparities among Latinas.

Keywords Acculturation • Sexual risk behaviors • STD • HIV • Latina adolescents • National Longitudinal Study of Adolescent Health • Add Health

Introduction

Latinos are one of the fastest growing minority groups in the United States. In 1980, 6.0% of the US population were Latinos and this percentage rose to 13.0% in 2000 (Guzman 2001). Latinas comprise an even larger share of women of reproductive age. In 2000, Latinas made up the single largest minority group with 8.5 million Latinas representing 14.0% of reproductive aged women (61.6 million) (Census Bureau 2003). Therefore, Latinas are a growing demographic force that must be taken seriously in the US.

Sexually Transmitted Diseases (STDs) and Sexual Risk Behaviors Among Latinas

The significant problem that Latinas are facing is that they are currently at a disproportionate risk for contracting sexually transmitted diseases (STDs). According to the Centers for Disease Control and Prevention in 2007, Latinas contracted chlamydia and gonorrhea at two to three times the rate of white females (Centers for Disease Control and Prevention 2007), and in 2006 their rate of HIV and AIDS cases per 100,000 was more than five times that of white females. The high degree of sexual risk behaviors among young Latinas is also concerning. A national school-based survey revealed that 51.0% of Latino students reported having had sexual intercourse compared with 43.0% of white students (Centers for Disease Control and Prevention 2006). Latinas are less likely to use condoms during intercourse (Raine et al. 2003) than white females, which places them at greater risk for STD infection. This present study centers on the sexual and reproductive health of Latinas.

The repercussions of STDs and sexual risk behaviors affect young females over the course of their entire
lifetimes (Johnston et al. 2003; Kaestle et al. 2005), and these sexual risk behaviors may have broad effects in developing other forms of psychopathology. For example, having either sequential or concurrent multiple sexual partners increases the possibility of a female’s exposure to partners who may have an STD, and, as a result, increases the risk of STD and HIV infection among such females (Department of Health and Human Services 2000). Adolescents with an STD diagnosis as well as those who use condoms inconsistently are approximately twice as likely to have attempted suicide (Houck et al. 2008). In addition, self-cutting behaviors have been associated with infrequent condom use among adolescents (Brown et al. 2005). During adolescence, involvement in sexual risk behaviors such as multiple sexual partners, sex and alcohol in combination, and sex for drugs or money was also associated with significantly increased odds of thoughts about suicide and suicide attempts (Hallfors et al. 2004). These findings suggest that STDs and sexual risk behaviors are strongly associated with self-harm behaviors. Self-harm behaviors are detrimental to the body and may impede social relations, and psychological ability (Briere and Gil 1998; Clarke and Whittaker 1998). Therefore, given the strong links between self-harm behaviors and sexual risk behaviors, identifying essential factors associated with sexual risk behaviors among Latinas may be an indirect way of reducing self-harm behaviors among Latinas.

Acculturation and Sexual Risk Behaviors Among Latinas

Multiple factors are thought to be important in predicting STDs and sexual risk behaviors among Latinas. Of these, one of the most important factors associated with sexual risk behaviors among Latinas is acculturation (Sabogal et al. 1995). The process of acculturation occurs when individuals from one culture integrate into a different culture—either from birth or through immigration, thus forcing the individuals to modify their self-identity and relationship to each culture (Berry 1997). Members of an ethnic minority accommodate information from both their heritage culture—the culture of birth or upbringing—and mainstream culture, thus enabling them to draw cultural values from each (Ryder et al. 2000). Acculturation can also be interpreted as the process by which immigrants adopt, internalize, and exhibit the behaviors of their host society (Ebin et al. 2001). For Latinos immigrating to the United States, the adoption of a new language and culture as well as the lack of receptiveness of the host society may make integration into a new society challenging. Thus, the difficulties faced during periods of acculturation may leave Latina adolescents more susceptible to risky behaviors (Guilamo-Ramos et al. 2005; McDonald et al. 2009).

A person’s place of birth, commonly used as a proxy measure of acculturation (Cabassa 2003), has frequently been associated with one’s sexual risk behaviors. For instance, Latina adolescents born in the US were found to be more likely to engage in sexual activity, and at an earlier age, than those who were born elsewhere (i.e., Latin America) (Jimenez et al. 2002). Mexican-Americans born in the US were more likely to engage in sexual intercourse at earlier ages and report more frequent sexual activity than Mexican-Americans born in Mexico (Adam et al. 2005). Among young, pregnant Latinas in rural northern-California, the adjusted odds of having multiple sexual partners was also significantly higher among moderate-to-highly acculturated women who came to the US at or before 15 years of age and have lived in the US for 10 or more years, than those in the low acculturation group (Kasiriye et al. 2005). These findings clearly support a positive relationship between levels of acculturation and sexual risk behaviors.

Contrastingly, however, other evidence indicates that less acculturated Latinas are more likely to be involved in sexual risk behaviors (Ford and Norris 1993) as compared to those with a high level of acculturation. More specifically, less acculturated Latino young adults are more likely to report poor condom use than their highly acculturated counterparts (Ford and Norris 1993). In addition, among women who hold to conservative gender and cultural norms, as well as traditional beliefs, many exhibit poor assertive communication skills and lower condom use (Wingwood and DiClemente 2000). One study found that women who believed that asking a male sexual partner to use a condom implied that he was unfaithful, were four times more likely to never use condoms as compared to women who did not hold this same belief (Centers for Disease Control and Prevention 1997). Latinas may be more likely to fall into this category of women due to various aspects of traditional Latino culture, such as gender inequality, power imbalance within romantic relationships, and pressure to repress discussions about sex and sexuality (Amaro 1995; Flores and Sheehan 2001). Therefore, less acculturated Latinos who are strongly influenced by traditional Latino culture have been shown to be more likely to be involved in high-risk sexual behaviors (Faulkner and Mansfield 2002). Consequently, these findings support negative relationships between levels of acculturation and sexual risk behaviors.

Furthermore, previous studies reported contradictory findings of the role of acculturation in contraceptive behaviors among the Latino population. While some studies found that higher acculturation increased the likelihood of condom use among Latino adolescents and young adults (Ford and Norris 1993), other studies have found that higher acculturation was associated with unprotected
intercourse among Latinas (Rapkin and Erickson 1994; Sabogal et al. 1995). The inconsistent findings of the role of acculturation in sexual risk behaviors among Latinas may stem from certain methodological limitations in previous studies. First, existing studies were based on regional samples only, rather than on a nationally representative sample (Ebin et al. 2001; Romo et al. 2004). Second, previous research mainly focused on cross-sectional designs rather than longitudinal consequences, linking sexual behaviors during adulthood with acculturation during adolescence (Ebin et al. 2001; Jimenez et al. 2002). Third, most research findings predominantly addressed the role of acculturation in predicting sexual behaviors such as sexual activity, early initiation of sexual intercourse, and/or contraceptive use (Guilamo-Ramos et al. 2005; McDonald et al. 2009; Unger and Molina 2000), but few examined the association between acculturation and STDs. Therefore, the relationship between acculturation and sexual behaviors, including the transmission of STDs, among Latinas requires further elaboration based on a longitudinal design with national representative samples.

Other Factors Influencing STDs and Sexual Risk Behaviors Among Latinas

Several additional factors have been found to influence the occurrence of STDs and sexual risk behaviors among both foreign born and US born Latinas. These include early initiation into sexual intercourse, alcohol use, depressive symptoms, parental educational attainment, and parental monitoring. Latinas are more likely to have an early sexual initiation than non-Latinas (Kellogg et al. 1997). Although large numbers of the adverse outcomes associated with this behavior do not emerge until adulthood (Johnston et al. 2003), studies have shown that the aftereffects of an early sexual debut place young Latinas at an increased risk for unintended pregnancy, STDs, and future sexual risk behaviors (O’Donnell et al. 2001; von Ranson et al. 2000). Therefore, the relationship between early initiation into sexual intercourse and consequential sexual risk behaviors needs to be examined using longitudinal design.

Studies have also produced substantial evidence that alcohol use is a predictor of STD-related risks (Millstein et al. 1992; Thompson et al. 2005). Extant research has found that alcohol use places both Latina and non-Latina teens and young adults at risk for unsafe sexual practices. In 2007, seventeen percent of sexually active adolescent Latinas reported being under the influence of alcohol or drugs during their most recent sexual experience (Youth Risk Behavior Surveillance Survey 2008). Studies have found that young adult Latinas who frequently use alcohol are more likely to engage in unprotected sex than those who use alcohol less frequently or not at all (Castañeda and Bastidas 2005; Matos et al. 2004). Alcohol consumption during a date is associated with serious intimate violence and sexual assault among white, black, and Latino/a couples (Caetano et al. 2000). Taken together, previous studies suggest that alcohol use-related variables are important factors influencing STDs and sexual risk behaviors among Latinas.

Psychological attributes such as depressive symptoms related to sexual risk behaviors have been reported as a significant predictor of sexual risk outcomes (Mazzaferro et al. 2006; Shrier et al. 2001). For example, depressive symptoms among adolescent females are associated with a history of an STD diagnosis (Shrier et al. 2001). DiClemente and colleagues (2001) have also found that adolescent females who were emotionally distressed were more likely to be pregnant, to have had unprotected sex, and to have had more multiple sex partners than less distressed females (DiClemente et al. 2001). However, the longitudinal association between depressive symptoms and sexual risk behaviors among Latinas has rarely been assessed.

Studies have produced substantial evidence that parental educational attainment is associated with sexual risks among females (Newbern et al. 2004). Study findings from Newbern et al. (2004) indicate that lower maternal education and nonprofessional maternal occupation are associated with higher STD reports in all groups except white females. Furthermore, Rostosky and colleagues’ study (2003) also found that females who had a mother with at least a college education were significantly less likely to have an early sexual initiation (Rostosky et al. 2003). Among Latinas, poverty and poor education are linked to early sex, pregnancy, and childbearing (Arana 2001). Therefore, consistent findings suggest that maternal or parental educational attainment is negatively associated with STD acquisition among Latinas and other minority females.

Studies have found that a high level of parental monitoring was related to adolescents’ sexual risk behaviors. Parental monitoring, which measures the degree to which parents know where their teens are and what they are doing, significantly decreased sexual risk-taking behaviors among sexually active female adolescents (Rodgers 1999). Adolescent females with less parental monitoring were less likely to use contraceptives and more likely to have multiple sex partners, to have risky sex partners, and to have had a new sex partner in the previous 30 days (DiClemente et al. 2001; Sieverding et al. 2005). Thus, understanding parental monitoring is a critical component of creating preventive strategies for sexual health behaviors among adolescent females.

Hypotheses

We used a nationally representative sample of adolescents and young Latinas to measure acculturation and sexual
risk behaviors. By using a longitudinal dataset, we aimed to test the longitudinal association between levels of acculturation and self-reported STDs, as well as three types of sexual risk behaviors: having had four or more life-time sexual partners, regretting sexual activity after alcohol use, and not using a condom during recent sex. Given the concerns about the elevated risks of STDs and sexual risk behaviors among young Latinas, acculturation is considered one of key factors associated with sexual health. However, to our knowledge, few studies have examined the longitudinal association between acculturation and STDs in addition to sexual risk behaviors among Latinas. In addition, because prior studies have revealed mixed findings of the relationship between acculturation and sexual risk behaviors, our study will clarify which levels of acculturation are associated with the greatest risk for sexual risk behaviors, thus helping to target which specific groups of Latinas are most in need of preventative efforts.

This study has four hypotheses after controlling for parental monitoring, depressive symptoms, binge drinking, parental educational attainment, and early sexual debut. First, the most acculturated group is more likely to have a history of self-reported STD diagnosis as compared to the least acculturated group. Second, the most acculturated group is more likely to have four or more lifetime sexual partners as compared to the least acculturated group. Third, the most acculturated group is more likely to regret sexual initiation after alcohol use as compared to the least acculturated group. Last, the most acculturated group is more likely to not have used a condom during recent sex as compared to the least acculturated group.

Methods

Data Source and Sample

The data for the current study were derived from the National Longitudinal Study of Adolescent Health (Add Health) Wave 1 and Wave 3. Add Health is a longitudinal school-based study of the health-related behaviors of adolescents in the US, grades 7–12 (Harris et al. 2003). The Add Health study sample was drawn from public and private high schools and was based on systematic sampling and stratification considering proportional enrollment size, region, urbanicity, school type, and percentage of Caucasian youth, to ensure a nationally representative sample of high school students. Weighted oversampling by design yielded the population-based estimates (Chantala and Tabor 1999). Add Health provided three sets of data: Wave 1 (1995), Wave 2 (1996), and Wave 3 (2001); the same individuals were interviewed three times during the period of adolescence to young adulthood. To ensure privacy and reduce reporting bias, Add Health researchers used audio computer-assisted survey interview (A-CASI) technology to elicit sensitive questionnaire content on issues such as sexual behaviors, contraception, and substance use.

The subjects for this present study were Latinas who completed both Wave 1 and Wave 3 interviews. Of the 7,909 females who had completed Waves 1 and 3, roughly 15% were Latina (n = 1,219). Since this study focused on sexual risk behaviors, among these 1,219 Latinas, 146 females were excluded as a result of lack of sexual experience or giving no response to the question on sexual experience in Wave 3. Therefore, this present study is based on data from the remaining 1,073 (88%) Latinas who were sexually active in young adulthood (ages 18–27).

Variable Descriptions and Measurements

Items in the Add Health study were drawn from standardized and validated instruments used in national and state surveys of adolescents. In order to test the longitudinal effect of acculturation on sexual risk behaviors, all the independent variables were chosen from Wave 1 and all the dependent variables were selected from Wave 3.

Sexual Risk Behaviors (Wave 3)

History of self-reported STD diagnosis. STD outcome was measured by asking participants if they had ever tested positive for the following eight STDs: chlamydia, gonorrhea, trichomoniasis, syphilis, genital herpes, human papillomavirus (HPV), bacterial vaginosis, and/or HIV/AIDS. Responses were added and dichotomized; a score of 1 indicates having been diagnosed with at least one STD, while a score of 0 indicates no diagnosis.

Four or more life-time sexual partners. Multiple life-time sexual partners were measured using the following The question: “With how many partners have you ever had vaginal intercourse, even if only once?” Responses were scored 0 for one, two, or three partner(s) and 1 for four or more partners.

Regret of sexual initiation after alcohol use. This variable was measured using the following question: “Over the past 12 months, how many times did you get into a sexual situation that you later regretted because you had been drinking?” Answers were dichotomized, those indicating having regretted sexual initiation after alcohol use were coded as 1 while answers indicating not having experienced regret were coded as 0.

Not using condom during recent sex. Participants were asked, “The most recent time you had vaginal intercourse did you/your partner use a condom?” Answers were dichotomized, those indicating not having used a condom
Acculturation (Wave 1)

Latina adolescents’ acculturation was measured using a scale created by summing two binary variables: English use at home (yes, 1; no, 0) and place of birth (US-birth, 1; foreign-birth, 0). According to these variables, respondents were classified into four different groups: (a) Group 1, foreign-born adolescents who reported exclusive use of another language at home, (b) Group 2, US-born adolescents who reported exclusive use of another language at home, (c) Group 3, foreign-born adolescents who reported using English at home, and (d) Group 4, US-born adolescents who reported using English at home. This measure has been used successfully in past research (Hahm et al. 2003). Research on Latinos has demonstrated that these groups lie on a continuum from the least acculturated to the most (Padilla 1980). Therefore, those who are foreign-born but do not use English at home (Group 3) are considered more acculturated than those who are US-born but do not use English at home (Group 2) (Phinney 1990). As Phinney emphasized, language use is a more accurate assessment tool for acculturation than place of birth.

Covariates

Depressive symptoms. This variable was measured using a slightly modified version of the Center for Epidemiologic Studies Depression Scale (Radloff 1977), using 19 of the 20 items, including being more easily bothered, loss of appetite, changes in energy level, trouble with improving bad moods, feelings of self-worth, hope about the future, ability to focus, changes in personal interactions, and feelings of depression. Each statement was scored from 0, “never or rarely,” to 3, “most of the time or all of the time,” based on frequency of depressive symptoms reported during the past week. Results were reported so that higher scores indicated greater depressive symptoms ($\alpha = 0.88$).

Parental educational attainment. This variable was assessed by two questions: “How far in school did your mother go?” and “How far in school did your father go?” Responses were categorized into 0 (never went to school), 1 (eighth grade or less), 2 (more than eighth grade, but did not graduate from high school), 3 (went to a business, trade, or vocational school instead of high school), 4 (completed a GED), 5 (high school graduate), 6 (went to a business, trade, or vocational school after high school), 7 (went to college, but did not graduate), 8 (graduated from a college or university), and 9 (professional training beyond a four-year college or university) ($\alpha = 0.67$).

Parental monitoring. This variable was examined by asking adolescents to respond to the following seven questions, all beginning with the same stem: “Do your parents let you make your own decision about…” (a) the time you must be at home on weekend nights, (b) the people you hang around with, (c) what you wear, (d) how much television you watch, (e) which television program you watch, (f) what time you go to bed on weeknights, and (g) what you eat? All scores were reverse coded from original responses and assigned so that higher scores indicated higher parental monitoring ($\alpha = 0.63$).

Binge drinking. Participants were asked, “Over the past 12 months, on how many days did you drink alcohol five or more drinks in a row?” Responses were scored 1 for one or more days of binge drinking and 0 for none.

Early initiation of sexual intercourse. This variable was determined with two questions: “In what year did you have sexual intercourse for the very first time?” and “What is your birth date year?” Final variables were dichotomized; those indicating having had sex before age 15 were coded as 1, answers indicating having had sex at or after age 15 were coded as 0.

Statistical Analyses

All statistical analyses were performed using Stata, version 9.0, to account for the clustered sampling design, regional stratification, and population weights. Based on survey commands such as SVY:LOGIT or SVY:TAB, Stata was able to handle the probability sampling weights and stratification necessary for analyzing the Add Health data set (Stata 1999, 2005). Four separate logistic regression analyses were used to assess the longitudinal associations between acculturation level and sexual risk behaviors including having a history of self-reported STD diagnosis, having four or more life-time sexual partners, regretting sexual activity after alcohol use, and not using condom during recent sex; while controlling for early initiation of sexual intercourse, binge drinking, depressive symptoms, parental educational attainment, and parental monitoring.

Results

Selected Characteristics of Latina Adolescents Transitioning to Young Adulthood

Table 1 shows the selected characteristics for Latina adolescents (ages 11–20) and sexual risk behaviors of Latinas who were sexually active in young adulthood (ages 18–27) in the Add Health sample. Our sample was comprised of Latina adolescents from several ethnic backgrounds, of whom approximately 50.0% were Mexican/Mexican–American. The
Table 1  Selected characteristics of latina adolescents transitioning to young adulthood of the national longitudinal study of adolescent health (n = 1,073)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean or N</th>
<th>SD or Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in Wave 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11–14</td>
<td>275</td>
<td>28.6%</td>
</tr>
<tr>
<td>15–18</td>
<td>676</td>
<td>70.2%</td>
</tr>
<tr>
<td>19–20</td>
<td>12</td>
<td>1.2%</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexican/Mexican American</td>
<td>449</td>
<td>46.8%</td>
</tr>
<tr>
<td>Chicano/Chicana</td>
<td>52</td>
<td>5.4%</td>
</tr>
<tr>
<td>Cuban/Cuban American</td>
<td>132</td>
<td>13.8%</td>
</tr>
<tr>
<td>Puerto Rican</td>
<td>148</td>
<td>15.4%</td>
</tr>
<tr>
<td>Central/South American</td>
<td>108</td>
<td>11.3%</td>
</tr>
<tr>
<td>Other Hispanic</td>
<td>70</td>
<td>7.3%</td>
</tr>
<tr>
<td>Depressive symptoms in Wave 1 (range 0–50)</td>
<td>14.22</td>
<td>8.60</td>
</tr>
<tr>
<td>Parental educational attainment in Wave 1 (range 0–9)</td>
<td>4.48</td>
<td>2.64</td>
</tr>
<tr>
<td>Parental monitoring in Wave 1 (range 0–7)</td>
<td>1.96</td>
<td>1.59</td>
</tr>
<tr>
<td>Binge drinking in Wave 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>267</td>
<td>27.8%</td>
</tr>
<tr>
<td>No</td>
<td>693</td>
<td>72.2%</td>
</tr>
<tr>
<td>Early initiation of sexual intercourse in Wave 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>92</td>
<td>9.7%</td>
</tr>
<tr>
<td>No</td>
<td>860</td>
<td>90.3%</td>
</tr>
<tr>
<td>Acculturation in Wave 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1 (Foreign-born, did not speak English)</td>
<td>191</td>
<td>19.8%</td>
</tr>
<tr>
<td>Group 2 (US-born, did not speak English)</td>
<td>255</td>
<td>26.5%</td>
</tr>
<tr>
<td>Group 3 (Foreign-born, spoke English)</td>
<td>31</td>
<td>3.2%</td>
</tr>
<tr>
<td>Group 4 (US-born, spoke English)</td>
<td>486</td>
<td>50.5%</td>
</tr>
<tr>
<td>History of STD diagnosis in Wave 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>97</td>
<td>10.2%</td>
</tr>
<tr>
<td>No</td>
<td>853</td>
<td>89.8%</td>
</tr>
<tr>
<td>Four or more life-time sexual partners in Wave 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>385</td>
<td>40.3%</td>
</tr>
<tr>
<td>No</td>
<td>571</td>
<td>59.7%</td>
</tr>
<tr>
<td>Regret of sexual initiation after alcohol use in Wave 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>77</td>
<td>8.0%</td>
</tr>
<tr>
<td>No</td>
<td>882</td>
<td>92.0%</td>
</tr>
<tr>
<td>Not using condom at recent sex in Wave 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (not using condom)</td>
<td>299</td>
<td>35.2%</td>
</tr>
<tr>
<td>No (using condom)</td>
<td>551</td>
<td>64.8%</td>
</tr>
</tbody>
</table>

The mean age of adolescent Latinas in Wave 1 was 15 (standard deviation, 1.7; not shown on the table); the majority (70.2%) were 15–18 years old.

Participants who were born in the US and used English at home (Group 4) represented the largest group of participants (50.5%). About one out of four young Latinas (26.5%) were US-born and did not use English at home (Group 2), and roughly 20.0% of Latinas were born outside the US and did not use English at home (Group 1). Young Latinas who were born outside the US and used English at home (Group 3) represented the smallest group (3.2%).

Depressive symptoms in this study were based on the CES-D scale and can be interpreted using the common adult measure of 16 and the Roberts cutoff score of 24 for adolescents (Radloff 1977; Roberts et al. 1991). Results were recorded as "minimal" depressive symptoms (0–15), "mild" depressive symptoms (16–23), and "severe" depressive symptoms (≥24). Latinas in this study did not appear to experience mild or severe depressive symptoms during their adolescence ($M = 14.22$, $SD = 8.60$). A total of 9.7% reported having had sex before age 15, and 27.8% reported binge drinking (drinking five or more alcoholic drinks in a
row) at least once during the past 12 months. The average parental monitoring among Latinas was generally low ($M = 1.96, SD = 1.59$). Parental educational attainment of the sample was 4.48, indicating an educational attainment level of having completed a General Educational Development (GED).

Among the sexually active young Latinas in Wave 3, approximately one out of ten participants (10.2%) had been diagnosed with a STD. Roughly 40% had had four or more life-time sexual partners and 8% had regretted sexual initiation after alcohol use in the past 12 months. One-third of these young Latinas (35.2%) reported not using a condom during recent sex.

The Proportions of Sexual Risk Behaviors, by Explanatory Variables

Table 2 shows the weighted percentages and means of self-reported STD diagnoses and sexual risk behaviors among young Latinas by explanatory variables. There were statistically significant subgroup differences among the four different acculturation groups for three outcomes: self-reported STD diagnosis, four or more life-time sexual partners, and regret of sexual initiation after alcohol use. Overall, young Latinas who were foreign-born and spoke English at home (Group 3) and young Latinas who were US-born and spoke English at home (Group 4) were found to engage in higher proportions of sexual risk behaviors including having had four or more life-time sexual partners, having experienced regret of sexual initiation after alcohol use, and having at least one diagnosis of an STD. Among young Latinas who were US-born and spoke English at home (Group 4), 15.6% had been diagnosed with at least one STD, more than half had had four or more life-time sexual partners (54.2%), and 10.6% regretted sexual initiation after alcohol use. Among young Latinas who were foreign-born and spoke English at home (Group 3), 14.3% had been diagnosed with at least one STD,

Table 2

<table>
<thead>
<tr>
<th>Acculturation Group</th>
<th>History of STD diagnosis</th>
<th>Four or more life time sexual partners</th>
<th>Regret of sexual initiation after alcohol use</th>
<th>Not using condom at recent sex</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (%)</td>
<td>No (%)</td>
<td>Yes (%)</td>
<td>No (%)</td>
</tr>
<tr>
<td>Group 1</td>
<td>5.5%</td>
<td>94.5%</td>
<td>14.9%</td>
<td>85.1%</td>
</tr>
<tr>
<td>Group 2</td>
<td>6.1%</td>
<td>93.9%</td>
<td>33.0%</td>
<td>67.0%</td>
</tr>
<tr>
<td>Group 3</td>
<td>14.3%</td>
<td>85.7%</td>
<td>58.5%</td>
<td>41.5%</td>
</tr>
<tr>
<td>Group 4</td>
<td>15.6%</td>
<td>84.4%</td>
<td>54.2%</td>
<td>45.8%</td>
</tr>
<tr>
<td>p value</td>
<td>0.0398*</td>
<td>0.0000***</td>
<td>0.0089**</td>
<td>0.9181 NS</td>
</tr>
<tr>
<td>Binge drinking</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14.9%</td>
<td>85.1%</td>
<td>63.7%</td>
<td>36.3%</td>
</tr>
<tr>
<td>No</td>
<td>9.6%</td>
<td>90.4%</td>
<td>31.3%</td>
<td>68.7%</td>
</tr>
<tr>
<td>p value</td>
<td>0.2186 NS</td>
<td>0.0000***</td>
<td>0.0005***</td>
<td>0.0276*</td>
</tr>
<tr>
<td>Early initiation of sexual intercourse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>11.7%</td>
<td>88.3%</td>
<td>59.5%</td>
<td>40.5%</td>
</tr>
<tr>
<td>No</td>
<td>11.2%</td>
<td>88.8%</td>
<td>38.7%</td>
<td>61.3%</td>
</tr>
<tr>
<td>p value</td>
<td>0.9386 NS</td>
<td>0.0113*</td>
<td>0.7167 NS</td>
<td>0.7935 NS</td>
</tr>
</tbody>
</table>

| Means               |                          |                                        |                                              |                               |
| Depressive symptoms | 15.09 (1.10)             | 13.65 (0.55)                           | 15.41 (0.66)                                 | 12.75 (0.63)                  |
| p value             | 0.0882 NS                | 0.0006***                              | 0.1953 NS                                    | 0.0804 NS                     |
| Parental educational attainment | 4.53 (0.43)           | 4.28 (0.24)                           | 4.87 (0.21)                                 | 3.93 (0.29)                   |
| p value             | 0.1000 NS                | 0.0000***                              | 0.0017***                                    | 0.0039*                       |
| Parental monitoring | 1.76 (0.25)              | 2.09 (0.11)                           | 1.87 (0.13)                                 | 2.19 (0.12)                   |
| p value             | 0.2621 NS                | 0.0131*                                | 0.7903 NS                                    | 0.9482 NS                     |

Percentages incorporate population-based sampling weights. Figures in parentheses accompanying means are standardized errors

*p < 0.05, **p < 0.01, ***p < 0.001

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approximately 60% had four or more life-time sexual partners (58.5%), and one out of three regretted sexual initiation after alcohol use (33.9%).

There were statistically significant differences between Latinas who binge drank and those who did not. Young Latinas who were binge drinkers during their adolescence were found to have higher instances of having four or more life-time sexual partners (63.7%), sexual initiation after alcohol use (16.7%) and not using a condom during recent sex (71.2%). Furthermore, young Latinas who reported having had sex before age 15 also had a significantly higher chance of having had four or more life-time sexual partners.

Means of parental monitoring, depressive symptoms, and parental educational attainment were statistically different for those who had four or more sexual partners, as compared with those who had not. Latinas who had had four or more sexual partners, received lower parental monitoring (mean, 1.87 vs. 2.19), had higher depressive symptoms (15.41 vs. 12.75), and had parents with higher levels of education (4.87 vs. 3.93). Furthermore, Latinas who regretted sexual initiation after alcohol use reported higher parental educational attainment (mean 5.26 indicating beyond high school graduate) than those who did not (mean 4.22 indicating completed a GED). In contrast, Latinas who did not use a condom during recent sex reported lower parental educational attainment than those who did use condoms (mean, 4.08 vs. 4.69).

Longitudinal Associations Between Acculturation and Sexual Risk Behaviors

Table 3 presents the odds ratios and confidence intervals of logistic regression analyses, assessing the longitudinal associations between acculturation level, self-reported STD diagnosis, and sexual risk behaviors among Latina adolescents transitioning to young adulthood. Our particular focus was on whether, for these young women, higher acculturation during adolescence would be associated with the likelihood of ever having an STD, four or more life time sexual partners, regret of sexual initiation after alcohol use, and/or not using condoms during recent sex throughout young adulthood.

Overall, as we hypothesized, the most acculturated group (Group 4) reported higher proportions of self-reported STDs, and 4 or more life-time sexual partners compared to the least acculturated group (Group 1). Specifically, compared to Latinas who were foreign born and did not speak English at home (Group 1), Latinas who were US-born and did speak English at home (Group 4) were significantly more likely to have had an STD (OR = 5.71), and to have had 4 or more life time sexual partners (OR = 4.83). However, there was no evidence that Latinas who were US-born and spoke

### Table 3

<table>
<thead>
<tr>
<th></th>
<th>History of STD diagnosis (n = 817)</th>
<th>Four or more life time sexual partners (n = 822)</th>
<th>Regret of sexual initiation after alcohol use (n = 824)</th>
<th>Not using condom at recent sex (n = 822)</th>
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</thead>
<tbody>
<tr>
<td>Depressive symptoms</td>
<td><strong>1.03 (1.00–1.06)</strong></td>
<td><em>0.63 (1.01–1.86)</em>*</td>
<td><em>0.69 (0.96–1.00)</em>*</td>
<td><strong>0.99 (0.96–1.04)</strong></td>
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<tr>
<td>Parental educational attainment</td>
<td>1.11 (0.97–1.26)</td>
<td>0.145 (0.86–1.26)</td>
<td>0.15 (0.86–1.30)</td>
<td>0.98 (0.84–1.14)</td>
</tr>
<tr>
<td>Parental monitoring</td>
<td>0.88 (0.76–0.94)</td>
<td>0.145</td>
<td>0.15 (0.86–1.30)</td>
<td>0.98 (0.84–1.14)</td>
</tr>
<tr>
<td>Degree of English</td>
<td>2.94 (1.88–4.60)</td>
<td>0.199</td>
<td>2.94 (1.88–4.60)</td>
<td>0.199</td>
</tr>
<tr>
<td>Group 3</td>
<td>1.93 (1.01–3.66)</td>
<td>0.044</td>
<td>1.93 (1.01–3.66)</td>
<td>0.044</td>
</tr>
<tr>
<td>Group 4</td>
<td>0.83 (0.30–2.33)</td>
<td>0.718</td>
<td>0.83 (0.30–2.33)</td>
<td>0.718</td>
</tr>
</tbody>
</table>

* p < 0.05, ** p < 0.01, *** p < 0.001
English at home (Group 4) were more likely to regret sexual initiation after alcohol use. There are also no significant associations between the level of acculturation during adolescence and condom use during young adulthood.

Our study hypotheses were partially supported by our findings; however, this study yielded the surprising finding that the odds ratios of three sexual risk outcome variables—self-reported STD diagnosis, four or more life-time sexual partners, and regret of sexual initiation after alcohol use (ORs = 6.62, 8.51, and 10.67, respectively)—were consistently highest for Group 3, Latinas who were foreign-born and spoke English at home.

Among Latinas, binge drinking was shown to significantly increase the odds of having four or more life-time sexual partners, regretting sexual initiation after alcohol use, and not using condoms during recent sex (ORs = 2.94, 3.55, and 2.02, respectively). Furthermore, Latinas who reported depressive symptoms during adolescence were more likely to have four or more life-time sexual partners during young adulthood (OR = 1.03). Parental educational attainment significantly increased the odds of regretting sexual initiation after alcohol use (OR = 1.15) and decreased the odds of not using condoms during recent sex (OR = 0.89); Latinas whose parents had higher educational attainment were significantly more likely to regret sexual initiation after alcohol use and to use condoms during young adulthood.

Discussion

This study provides both a specific and broad examination of sexual risk behaviors among Latinas who are transitioning to young adulthood. In our study, one in ten young Latinas reported having a history of self-reported STD diagnosis. Approximately four in ten had had four or more lifetime sexual partners, and 35% did not use condoms during recent sex. As has been documented in other studies, our findings support the idea that more attention must be paid to young Latinas due to the proportionally high incidence of sexual risk behaviors among this specific group. The present study also documents important findings relating acculturation and sexual risk behaviors in Latinas, and sets a direction for future research on this topic. Based on a nationally representative sample, this study revealed statistically significant differences in sexual risk behaviors between Latinas of different levels of acculturation. That is, Latinas from English speaking homes (Groups 3 and 4) were more likely to have a history of self-reported STD diagnosis and to exhibit sexual risk behaviors than the Latinas in Group 1 who did not speak English at home and were foreign born. Binge drinking during adolescence was also found to be a risk factor in predicting sexual risk behaviors among young Latinas. This study further highlights the continued need to develop culturally sensitive interventions that will assist Latina adolescents who speak English at home in conducting healthy reproductive behaviors.

Latinas who spoke English at home (Groups 3 and 4) were significantly associated with sexual risk outcomes when compared to the lowest acculturated Latinas (Group 1) (Table 3). This finding further suggests that a higher level of acculturation (determined by the use of English at home) may be a predictor of sexual risk behaviors, including self-reported STD diagnosis, four or more lifetime sexual partners, and regret of sexual initiation after drinking. Although not using condoms during recent sex did not show a statistically significant association with the level of acculturation in multivariate analyses, Latinas from English speaking homes (Groups 3 and 4) had the increased odds of not using condoms during recent sex (ORs = 1.82 and 1.29, respectively), indicating that the patterns of association were similar to other outcome variables. Our study finding is supported by the findings of similar associations between acculturation and sexual behaviors from Guilamo-Ramos’ study, which indicated that Latino adolescents who came from English-speaking homes were more likely to have engaged in sexual activity than adolescents from Spanish-speaking families (Guilamo-Ramos et al. 2005). Furthermore, our finding is congruent with those of previous studies, which found that acculturated Latina adolescents are more likely to engage in sexual risk behaviors including having unprotected sexual intercourse, having an early initiation of sexual intercourse, having multiple sex partners and experiencing a high number of unintended pregnancies, when compared to their less acculturated counterparts (Cubbin et al. 2002; Kaplan et al. 2002; Minnis and Padian 2001). Such trends have been interpreted to mean that increased integration with mainstream American culture has adverse consequences on Latina adolescents’ sexual and reproductive health behaviors (Romo et al. 2004). The salience of acculturation as a predictor of sexual risk-taking suggests that it would be a valuable inclusion in future studies of Latina adolescents.

Latinas who were US-born and spoke English at home (Group 4) were more likely to have had an STD, and to have had four or more lifetime sexual partners as compared to Latinas who were foreign-born and did not speak English at home (Group 1). Yet, Latinas who were foreign-born and spoke English at home (Group 3) had the highest odds of risky sexual outcomes, including self-reported STD diagnosis, four or more lifetime sexual partners, and regret of sexual initiation after drinking. Although the reason for these findings is not immediately clear, it may be due to the fact that Latinas who were foreign-born and spoke English at home (Group 3) might have been struggling the most
with the acculturation process as compared to the other groups. Specifically, Groups 3 and 4 shared the commonality of speaking English at home. However, Group 3 (foreign-born, spoke English) was foreign-born rather than US-born, indicating that these participants and their families had migrated to the US more recently than those participants and families from Group 4 (US-born, spoke English).

As recently immigrated adolescents, Latinas who are foreign-born and speak English at home (Group 3) may be more likely to ascribe to Latino cultural values because their recently immigrated parents may continue to instill traditional cultural values and practices, including culturally defined gender roles, male dominance, and reluctance to discuss sexual matters, in them (Amaro 1995; Flores and Sheehan 2001). As a result, Latinas in this setting may be pressured to internalize traditional American societal norms and customs while also encouraged to adhere to the traditional cultural values practiced at home by their parents. Given the facts presented above regarding the struggles faced by recently immigrated young Latinas and their parents during the process of acculturation, we see that it is essential to consider the complexity of Hispanic cultural norms in future research on sexual health. However, Add Health provides only limited measures of familism, gender roles (such as marianismo or machismo), or other important Hispanic cultural norms (Afable-Munsuz and Brindis 2006; Villarruel et al. 2007) that may directly influence reproductive and sexual behavior.

It is also notable that binge drinking during adolescence was a significant predictor of sexual risk behaviors during young adulthood for Latinas. In bivariate analyses (Table 2), Latinas who participated in binge drinking had a higher proportion of sexual risk behaviors (except history of self-reported STD diagnosis) than did Latinas who did not binge drink. In multivariate analyses (Table 3), binge drinking significantly increased the odds of sexual risk behaviors, including having multiple sexual partners, regretting sexual initiation after alcohol use, and not using condoms during recent sex. This result is consistent with the previous findings that highlighted alcohol use as a predictor of sexual risk behaviors among Latinas (Caetano et al. 2000; Matos et al. 2004). In addition to the fact that Latino youths have elevated levels of heavy drinking behavior (Johnson et al. 2002), there is also a tendency for Latino youths from English speaking homes to show a higher probability of binge drinking than those from Spanish speaking homes (Guilamo-Ramos et al. 2004). Therefore, binge drinking behavior among the higher acculturated groups should be addressed in order to prevent sexual risk behaviors among young Latinas.

Our study found that, after controlling for all the covariates, parental monitoring was not associated with any of the sexual risk outcome variables. This should not be interpreted as suggesting that parental monitoring is not an important predictor for sexual risk behaviors among Latinas. Rather, it is important to contextualize the home environment of the young Latinas. Our data indicated that the mean of parental monitoring in this sample was quite low to begin with (approximately 2 with the range from 1–7). In other words, because the overall parental monitoring was low for the whole sample, we might not have observed the important role of parental monitoring in the sexual risk behaviors among our sample. Low parental monitoring may be attributed to a lack of supervision due to poverty, existence as a single parent household, and/or high levels of maternal psychological distress (Murry et al. 2002). To date, most prevention programs targeting youth for sexual health are peer-led and are based on school-approved curricula that vary dramatically (Miller et al. 1999). However, as the most powerful socializing agents in the lives of young teens, parents also play an important role in preventing sexual risk behaviors, particularly among female adolescents (Hahm et al. 2008). Future studies need to examine the specific factors associated with low parental monitoring among Latinas and develop strategies that will increase parental monitoring for these young women.

Limitations

Our study had several limitations that remain to be addressed. First, only two variables—the use of English at home and place of birth—were used as a proxy measurement for acculturation. Using two variables to capture the complex process of acculturation is a strategy that has been used comprehensively in several empirical studies of Latinos (Griffith 1983; Samaniego and Gonzales 1999) and Asians (Schuster et al. 1998; Wortley et al. 2000). Which language is spoken at home has been a variable explored extensively in the literature on acculturation (Nguyen et al. 1999). In particular, usage of the dominant language provides access to the dominant culture and may facilitate greater cultural adjustment (Yeh and Inose 2002) and predict better academic performance (Huang 1997). In addition, English language ability is strongly positively correlated with length of residence in the United States and with generation (Frost and Driscoll 2006). The place of birth is also a common proxy measure based on whether a person is foreign-born (first generation) or native-born. More advanced measures categorize native born persons into those whose parents are immigrants (second generation) or US-born (third and higher generations) (Szapocznik et al. 1980). Acculturation, however, is a multidimensional construct that involves other attitudes and behaviors not assessed by these two variables, such as ethnic interaction,
historical familial identification, knowledge about cultural heritage, contacts with the country of origin, reading and writing skills, social affiliation and food selection (Orzco et al. 1993; Tsai et al. 2001). Inclusion of these indicators in the acculturation assessment may give a more comprehensive picture of the participants’ levels of acculturation.

Second, STDs were measured via self-report. Studies have observed sizeable underreporting of STDs when they are solicited via self-report, as compared with the proportions of STDs that have been identified when biomarker data has been utilized (Clark et al. 1997; Hornberger et al. 1995). In Wave 3, Add Health had collected biomarker testing data for four STDs: HIV, chlamydia, gonorrhea, and trichomoniasis, but given the low occurrence of these four STDs among the Latinas studied here, this study used a history of self-reported STD diagnosis and included a wider range of STDs. Potential causes for self-reported underestimation include (a) subject underreporting (due to failure to recall, social stigmatization, embarrassment or misunderstanding of a diagnosis) (Harrington et al. 2001; Laumann and Youm 1999), (b) asymptomatic infections (subjects might not have known that they had an infection), and (c) lack of STD testing in high-risk populations (without STD testing, subjects might not have received a diagnosis). One implication of potential systematic STD underreporting is the confounding of findings from intervention trials that use self-reported STD history as one indicator of the efficacy of STD/HIV prevention and intervention research (Harrington et al. 2001).

A third limitation of this study deals with the combination of multiple STDs into a single measure to maximize the proportions of STDs. Different STDs could have distinct patterns of occurrence, possibly affecting the observed results. For instance, chlamydial infection was the most predominant STD in this sample; however, using a composite STD outcome measure limits the study’s capacity to interpret the results for any single STD. Future research can ensure accurate STD prevalence by providing different STDs’ estimates of prevalence.

Another limitation exists in the fact that Add Health is a school-based survey with data collected among more conventional and integrated adolescents. Adolescents who have dropped out of school, are homeless, or who reside in hospitals or prisons may have been excluded because data gathering occurred at school. Such adolescents are more likely to engage in health-risk behaviors. As a result, adolescents apparently at high risk for STDs and relatively lower SES could have been excluded disproportionately (Centers for Disease Control and Prevention 1994). Although the findings are limited to those who were enrolled in school, a recent evaluation of the adequacy of the sampling of Add Health suggests that bias arising from school dropouts could be minimal (Udry and Chantala 2003).

Finally, the thrust of this paper is to demonstrate the relationship between acculturation level and sexual risk behaviors among Latinas as a group. This study includes young Latinas of different ages and ethnic groups; however, a great deal of diversity exists within this ethnic category. For instance, Latinas who immigrate to the United States come from countries that have diverse Hispanic or Latino ethnic groups such as Mexican–American, Puerto Rican, Cuban American, Dominican American, Central/South American, and other Hispanic (Census Bureau 2006). Although the present study did not disaggregate Latinas by ethnic subgroups (because the cell sizes of subgroups had become dispersed), some proportional differences in the sexual risk behaviors among Latina subgroups were found from the follow up analyses (not shown in tables). The follow up analyses found that among Latinas, Mexican/Mexican–American females showed the highest rates of sexual risk behaviors, including a history of self-reported STD diagnosis, four or more lifetime sexual partners, regret of sexual initiation after alcohol use, and lack of condom use during recent sex. Future studies should investigate the heterogeneity among Latinas and should disaggregate the subgroups of Latinas that may be most at risk for sexual and reproductive health issues.

Conclusions

This study makes a contribution to the growing literature on factors affecting sexual and reproductive health among adolescent and young Latinas. This study indicated that Latinas who spoke English at home (Groups 3 and 4) had a higher risk of self-reported STDs, having four or more lifetime sexual partners, and regretting sexual initiation after alcohol use than Latinas in Group 1 (foreign-born and did not use English at home). Adolescent and young Latinas have a host of unique needs. Although a fair amount of research has revealed some of the sexual and reproductive behaviors of Latina adolescents, more studies with rigorous research design are necessary. Especially promising areas of future research include clarifying the protective and adverse effects that influence the sexual and reproductive lives of young Latinas, and finding ways to maintain positive influences as the acculturation process continues. Substantial prevention and intervention efforts are still necessary by social work and public health professionals in order to improve sexual and reproductive health and to reduce health and risk disparities among Latina adolescents who are transitioning to young adulthood.
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