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## Understanding Generational Differences in Early Fertility: Proximate and Social Determinants

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### Abstract

Although US rates of early fertility have declined, they remain high relative to other high-income countries, and disparities by population group persist. The share of the US youth population with immigrant parents has expanded greatly, yet relatively little is known about generational variations in early fertility. This study used Add Health data to investigate: (1) differences by generational status in the risk of early childbearing; (2) to what extent observed differences reflected timing of sexual onset versus post-onset proximate determinants like contraceptive use; and (3) the influence of individual-, family-, and neighborhood-level social factors. Foreign-born and second-generation young women initiated both sexual activity and childbearing later than those with US-born parents. Sequential hazard models revealed the importance of later sexual onset in explaining delayed fertility among the foreign-born, and of family attributes for their later sexual onset. Post-onset behaviors were central to the delayed childbearing observed among the second generation.

### Keywords

adolescent pregnancy; fertility/family planning; immigration/migrant families; sexual behavior; youth/emergent adulthood

## INTRODUCTION

Despite a dramatic drop over the last two decades, US rates of early fertility remain high relative to other high-income countries (Martin et al., 2017; UN Population Division, 2017), and within the United States large between-group differences persist (Sweeney & Raley, 2014). In 2015, the birth rates of non-Hispanic Black and Hispanic youth aged 15–19 were roughly twice that of non-Hispanic Whites; similar trends were observable among 20–24-year-olds (Martin et al., 2017). Births to women in their teens and early 20s are linked with worse health and social outcomes for mothers and offspring than births to older women, even after accounting for factors that predispose women to early motherhood (Chen et al., 2008; Diaz & Fiel, 2016; Kane et al., 2013).

Children of immigrants are the fastest growing segment of the US population (Tienda & Haskins, 2011), and can thus be expected to increasingly shape US fertility trends. Yet to date, relatively little research attention has been given to variation by migration background

in early fertility, despite a large literature describing and explaining racial variations in early childbearing (e.g., Sweeney & Raley, 2014), and much research on the cumulative fertility of immigrant women (e.g., Bean et al., 2000; Parrado & Morgan, 2008). According to recent estimates, roughly one in four US children under age 18 were foreign-born or of the second generation (US-born to at least one foreign-born parent) in 2015, up from 13% in 1990 (Migration Policy Institute, 2017); this share is projected to rise to one-third by 2050 (Passel, 2011).

Whether foreign-born and second-generation women are at lower or higher risk of early fertility relative to those with US-born parents is not straightforward to anticipate based on existing research. Accumulating evidence that children of immigrants initiate sexual activity later on average than offspring of the US-born (e.g., Harris, 1999; McDonald et al., 2009) might suggest a tendency also toward later fertility. Nonetheless, other research suggests that once sexually active, Hispanic immigrant young women may use contraception less consistently, and abortion less frequently, than their US-born counterparts (Aneshensel et al., 1990; Manlove et al., 2013). Work directly investigating differences in early fertility by generational status has yielded results in the direction of both higher and lower risk for children of immigrants (e.g., Aneshensel et al., 1990; Glick et al., 2006; Manlove et al., 2013; Rumbaut, 2008).

Analyzing data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), a nationally representative longitudinal study of students in grades 7–12, this study asks three overarching research questions. First, it asks whether and how children of immigrants differ from those with US-born parents in their risk of early childbearing. Second, grounded in a proximate determinants framework (Bongaarts, 1978, 2015; Davis & Blake, 1956), it asks to what extent observed generational differences in early fertility reflect variation in timing of sexual onset versus post-onset behaviors like contraceptive use or abortion. Third, it investigates the social factors underlying observed generational differences in both timing of sexual onset and post-onset fertility, as previous studies have generally stopped short of identifying mechanisms for observed differentials. I consider factors spanning the individual, family, and neighborhood levels, heeding calls by others to consider the multiple environments in which young people's lives are enacted (Browning et al., 2004; Leventhal & Brooks-Gunn, 2000).

## BACKGROUND

### Generational Differences in Fertility

A sizeable body of literature has examined childbearing patterns across immigrant generations, focusing primarily on women's cumulative fertility. Consistent with social mobility and classical immigrant assimilation perspectives (Alba & Nee, 1997), there is increasing consensus that cumulative fertility declines with time in the United States and across immigrant generations, at least among Hispanic women (Choi, 2014; Parrado, 2011; Parrado & Morgan, 2008).

Yet, work attending to age-specific fertility rates has revealed more complex generational patterns among women in their teens and early 20s. Frank and Heuveline (2005) observed

higher fertility rates among third-generation Mexican-origin women under age 24 relative to earlier generations, suggesting—in line with a segmented assimilation perspective (Portes & Rumbaut, 2001)—that barriers to upward mobility among youth from racial/ethnic minority groups may lead to decreases in the opportunity costs of early fertility. Choi (2004) found that the fertility rates of 15–19-year-old Mexican immigrants and US-born Mexican Americans were very similar, whereas older age groups displayed the pattern of decreasing fertility across generations. Studies concentrated exclusively on generational differences in teenage fertility have produced mixed results; some have observed lower risk of teen fertility among children of immigrants relative to offspring of the US-born (Glick et al., 2006; Guarini et al., 2013; Rumbaut, 2008), and others have found the opposite (Aneshensel et al., 1990; Manlove et al., 2013).

### Proximate Determinants of Fertility

Research on immigrant fertility has rarely attended to the underpinnings of observed generational differences. In unpacking fertility trends, a common demographic approach distinguishes proximate determinants, a small set of biological and behavioral factors that directly determine fertility, from more distal factors (Bongaarts, 1978, 2015; Davis & Blake, 1956). Proximate determinants include sexual activity (timing of sexual onset and sexual frequency), contraceptive use, and whether a pregnancy is carried to term (Bongaarts, 2015). Social factors must operate through at least one of these proximate determinants to influence fertility.

Attending to the proximate determinants is arguably particularly important when considering generational differentials in early fertility, given the increased relevance of sexual onset timing for younger age groups and the potentially countervailing influences of onset timing and family planning. As noted above, a growing body of research has observed that foreign-born and second-generation youth initiate sexual activity later than children of the US-born (Goldberg et al., 2017; Harris, 1999; McDonald et al., 2009). Research has also found that foreign-born Hispanic youth have fewer sexual partners than US-born youth (Guarini et al., 2013). Landale and Hauan (1996) concluded that the higher risk of premarital childbearing they observed among first and second-generation Puerto Rican migrants to the US mainland, relative to non-migrants in Puerto Rico, was due primarily to increasingly earlier sexual onset across generations. Nonetheless, there is also evidence that once sexually active, Hispanic (Wu & Martin, 2015) and Hispanic immigrant (Aneshensel et al., 1990; Manlove et al., 2013) young women are less likely than are other young women to use contraception and to terminate unwanted pregnancies.

### Contextual Determinants of Sexual Onset and Fertility Timing

**Family Environment**—Beyond the proximate determinants, family traits are often implicated for general health advantages observed among immigrant youth (Perreira & Ornelas, 2011), and indeed immigrant families possess a number of characteristics that might be expected to delay both sexual activity and fertility. Children of immigrants co-reside with two biological parents more often than children with US-born parents (Landale et al., 2011); living with two biological parents is also associated with later sexual onset and fertility (Browning et al., 2004; Wu & Thomson, 2001). Family cohesion has also been

linked with both sexual onset timing (Miller et al., 2001) and immigrant status (Santelli et al., 2009). In addition, although foreign-born parents are on average less educated than the US-born, their expectations for their children's education are often high (Feliciano & Lanuza, 2015), which may also reduce early childbearing risks (Glick et al., 2006).

Nevertheless, discrepancies in acculturative status between parents and youth can increase family conflict and decrease family cohesion, particularly for second-generation youth (Portes & Rumbaut, 2001; Sluzki, 1979). In addition, immigrant youth, particularly girls, often face close parental monitoring (Espiritu, 2001; Suárez-Orozco & Qin, 2006); although beneficial to a point, some research suggests that excessive or coercive parental control may actually elicit risk behavior (Miller et al., 2001). Finally, although children of immigrants more often have married parents than children of the US-born, they also may experience migration-related separations from parents (e.g., due to staged migration or deportation) (Landale et al., 2011), which have been linked with earlier sexual onset (Goldberg et al., 2017).

**Neighborhood Environment**—Previous research has highlighted the importance of neighborhood factors in explaining racial differences in sexual activity and early fertility (e.g., South & Baumer, 2000; Browning et al., 2004), but their influence on generational differences is less well understood. Immigrants tend to be more residentially segregated than non-immigrants (Iceland & Scopilliti, 2008). A growing literature links residence in immigrant enclaves with positive health outcomes, particularly for those who are foreign-born (Eschbach et al., 2004; Osypuk et al. 2009a). Youth in enclaves may delay sexual activity and fertility because strong social networks can ease access to information, reinforce norms on acceptable behavior, and foster informal social control (Denner et al., 2001). Enclaves can also insulate youth from discrimination (Portes & Rumbaut, 2001).

Nonetheless, immigrants also often live in neighborhoods with high levels of poverty (Osypuk et al., 2009b; Pong & Hao, 2007), and neighborhood poverty is linked with both early sexual onset and early fertility (Browning et al., 2004; South & Baumer, 2000). Moreover, for the second generation, residence in enclaves may reflect blocked economic and social opportunities (Osypuk et al., 2010; Portes & Rumbaut, 2001).

**Individual-level Intervening Factors**—Family and neighborhood attributes may influence the proximate determinants of early fertility through individual-level processes. For example, family and neighborhood factors may influence youths' school attachment and educational expectations (Brooks-Gunn et al., 1993; Crowder & South, 2003; Duncan, 1994), which in turn are associated with the timing of sexual onset and fertility post-onset (Glick et al., 2006; Resnick et al., 1997). Traits of families and neighborhoods may also influence youth proclivity to engage generally in risk behaviors (Leventhal & Brooks-Gunn, 2000), and correlations between sexual behavior and risk behaviors like substance use and delinquency are well established (Browning et al., 2004; Osgood, 1988). Thus, individual-level processes may serve to link contextual factors with sexual and fertility transitions.

## DATA AND METHODS

To examine generational differentials and underlying proximate and social determinants, I used longitudinal data from Waves 1–4 of Add Health, a nationally representative study following a cohort of youth who were in grades 7–12 in 1994–1995. Add Health used a school-based, cluster-sampling design to generate a stratified, random sample of 80 high schools and their corresponding feeder schools. Adolescents were selected from school rosters for in-home interviews; Cuban, Puerto Rican, and Chinese youth were oversampled, as were Black youth with highly educated parents. A total of 20,745 adolescents completed in-home interviews in 1994–1995; of these, 14,738 were re-interviewed in 1996, 15,170 in 2001–2002, and 15,701 in 2008. In addition to Add Health’s in-home interview data, I also used 1990 census data linked by Add Health to respondents’ Wave 1 addresses. Overall, Add Health’s large nationally representative sample of youth, longitudinal measurement of sexual activity and childbearing, detailed measures of potential individual and family predictors of sexual onset and fertility timing, and linked neighborhood-level data all rendered it uniquely well-suited for examining the research questions of interest.

Of the 10,430 women interviewed at Wave 1, I restricted the analyses to 9,634 with valid sampling weights. I focused on women because the burden of early fertility falls more heavily on mothers than fathers (Kane et al., 2013) and because young men’s reports of fertility and sexual onset timing tend to be less reliable (Sweeney & Raley, 2014; Upchurch et al., 2002). I excluded 12 women missing data on birth timing and 845 with missing covariate data, yielding a final analytic sample of 8,777. Separate analyses using multiple imputation suggested biases from excluding cases missing data were negligible. I did not exclude women reporting sexual onset or fertility before Wave 1, to avoid biasing the sample toward those with later transitions; however, robustness checks to excluding both indicated very similar results to those presented.

### Measures

**First Birth Timing**—I measured the month and year of first birth using fertility histories collected from respondents at each study wave. To minimize forward telescoping (the tendency to perceive distant events as more recent than they are), I used the first birth timing provided in the earliest wave in which a participant reported having given birth (Harden et al., 2008). Thirty-three percent of women experienced a first birth before age 24, and 21% before age 21 (not shown).

**Sexual Onset Timing**—I measured timing of first heterosexual intercourse via reports at each study wave. As with first birth, I used information from the earliest wave the participant endorsed having initiated sexual activity. Timing of first sex was reported as month and year in Waves 1 and 2 and age in Waves 3 and 4. Approximately one-half of respondents in the analytic sample reported sexual onset by Wave 2. For the other half, I imputed sexual onset month using the distribution of sexual onset months reported by women of similar ages in the 2002 wave of the National Survey of Family Growth. I controlled in my models for whether onset month was imputed. Results were robust to other imputation methods, such as imputing the mid-point between birthdays.

**Generational Status**—I categorized respondents as: 1) foreign-born, 2) second generation (US-born to at least one foreign-born parent), or 3) third-plus generation (US-born to US-born parents). The third group was the most heterogeneous, encompassing grandchildren of immigrants and those whose ancestors immigrated several generations ago. The majority of women in the analytic sample (77%) were of the third-plus generation. Fourteen percent were of the second generation, and 9% were foreign-born.

**Family Context**—Family structure is a six-category variable capturing co-residence at Wave 1 with both biological parents (reference category); two adults, one or both of whom are step-, foster, or adoptive parents; only a mother; only a father; and other family structure. Family relationship quality assesses the extent to which respondents felt at Wave 1 that their parents cared about them, people in their family understood them, their family paid attention to them, and they had fun together with their family. Responses were coded on a 5-point scale with higher values indicating higher quality ( $\alpha=0.77$ ); the scale score is the mean of the items multiplied by 4. Parental monitoring is a summed six-item scale ( $\alpha=0.57$ ) based on Wave 1 questions asking whether respondents made their own decisions about: 1) what time to be home on weekends, 2) who to hang around with, 3) what clothes to wear, 4) how much television to watch, 5) what time to go to bed on weeknights, and 6) what food to eat. Parent educational expectations uses a Wave 1 question on perceptions, from 1–5, of how disappointed respondents' parents would be if they did not graduate from college; a selection of 5 for mothers and/or fathers was considered high college expectations. Finally, I measured non-English language use in the home at Wave 1.

**Neighborhood Context**—I performed principal components analysis on selected tract-level neighborhood measures, and two factors emerged. The first, labeled *immigrant concentration*, was defined by two variables: the proportion foreign-born and the proportion aged five-plus who speak English not well or not at all. The second, *concentrated poverty*, was defined by four variables: 1) the proportion of persons with 1989 income below the poverty level; 2) the proportion of households with public assistance income; 3) tract-level unemployment; and 4) the proportion of female-headed households with no husband present and children under 18. Both measures used continuous factor scores; immigrant concentration ranged from  $-1.59$  to  $5.95$ , and concentrated poverty from  $-1.32$  to  $9.08$ . I tested for non-linearities (Browning et al., 2004), but found no evidence of them.

**Individual-Level Intervening Variables**—The school attachment scale uses Wave 1 reports of how often respondents had trouble getting along with teachers, paying attention in school, getting homework done, and getting along with other students. The scale score is the mean of the items, multiplied by 4 ( $\alpha = 0.69$ ); higher scores indicated greater attachment. College expectations measures how likely respondents thought it was at Wave 1 that they would attend college, from 1 to 5; selections of 5 were considered high. Finally, the measure of non-sexual risk behavior uses Wave 1 self-reports of the frequency of shoplifting, serious fighting, getting drunk, and binge drinking in the last 12 months. Following Cavanagh (2004), I converted each of the items to binary variables and summed them ( $\alpha = 0.58$ ).

**Socio-Demographic Controls**—I measured race/ethnicity as non-Hispanic White (reference), non-Hispanic Black, non-Hispanic Asian, non-Hispanic other, Mexican, and other Hispanic. Small cell sizes precluded finer categorization. Marital status is a time-varying dichotomous indicator based on Wave 1–4 reports of the month/year of marital transitions. Parental education uses respondent Wave 1 reports of the highest level of education completed by a resident parent: less than high school, high school diploma or GED, more than high school (reference), or missing. Finally, I included a continuous measure of age in years at Wave 1 to account for possibilities of both higher recall bias and higher likelihood of sexual onset before Wave 1 among respondents who were older at baseline.

### Analytic Strategy

To distinguish between the sexual onset and fertility processes, I used a sequential hazard framework developed by Wu and Martin (2009, 2015) that modelled two transitions underlying fertility: 1) a process in which some women become sexually active, and 2) a process in which women who have initiated sexual activity are at risk of a first birth. If  $T_1$  represents timing of first sex, then the transition  $0 \rightarrow T_1$  denotes sexual onset.  $T_1 \rightarrow T_2$  denotes the progression to a first birth among women who have initiated sexual activity. Most studies ignore the  $0 \rightarrow T_1$  transition when modelling the transition to first birth, assuming implicitly that a woman is at risk of childbearing before and after she becomes sexually active (Wu & Martin, 2015).

I used piecewise exponential survival models, a flexible class of semi-parametric survival models that assume that the baseline hazard is constant in well-chosen intervals. I first modelled sexual onset, considering respondents at risk of first sexual intercourse from the month of their 10<sup>th</sup> birthday to the month before sexual onset, study attrition, or their 24<sup>th</sup> birthday, whichever came first. I then modelled the post-onset process, considering respondents at risk of first birth only after sexual onset. Those not initiating sexual activity before age 24 or study attrition were excluded from the second model. In both models, right-censoring was assumed to be non-informative; that is, the censoring time was independent of the event time that would have otherwise been observed, given any covariates in the analysis (Leung, Elashoff, & Afifi, 1997). Following Wu and Martin (2009, 2015), I incorporated a piecewise constant specification for months since first sex (0–7, 7–14, 14–36, 36+) in the second model, and a linear specification of age at onset as a right-hand covariate.

To further quantify the extent to which generational variation reflected differences in sexual onset timing versus post-onset factors, I first predicted the median age at sexual onset for each generational group with the results from the  $0 \rightarrow T_1$  model. I then used the  $T_1 \rightarrow T_2$  model to calculate the predicted probability of having a first birth by ages 21 and 24 for each group, conditional on that group's predicted median age at sexual onset. Finally, I recalculated these predicted probabilities, this time using a common age at onset across the three groups.

Initial  $0 \rightarrow T_1$  and  $T_1 \rightarrow T_2$  models examined associations between generational status and the hazard of first sex or first birth, independent of controls. Subsequent models added the sets of variables corresponding to family, neighborhood, and individual-level intervening



factors. I used seemingly unrelated estimation (*suest* in Stata) to compare coefficients across models. I weighted the analyses and adjusted standard errors for school-level clustering using Stata's *svy* commands.

## RESULTS

### Characteristics of Immigrant Young Women

Table 1 provides descriptive statistics for the independent variables, by generational status. At the family level, foreign-born and second-generation young women reported significantly higher levels of parental monitoring at Wave 1 than those with US-born parents, and a far greater share reported a non-English language in the home. College expectations were highest among families of the foreign-born. A significantly larger share of the second generation, but not of the foreign-born, resided with two biological parents compared to the third-plus generation. The second generation reported significantly lower quality family ties than the foreign-born.

At the neighborhood level, children of immigrants lived in Wave 1 neighborhoods with significantly higher immigrant concentrations compared to the third-plus generation. However, differences in neighborhood concentrated poverty were not statistically significant across groups.

At the individual level, foreign-born young women reported significantly stronger Wave 1 school attachment than the other groups, and less non-sexual risk behavior. The second generation reported the most non-sexual risk behavior, and the third-plus generation the highest college expectations.

### Bivariate Relationships between Generational Status and Sexual Onset and First Birth

Figure 1 displays smoothed monthly hazard estimates of sexual onset through age 24. Through roughly age 21, there was a clear generational gradient, with the highest hazards of sexual onset among the third-plus generation, followed by the second generation and then the foreign-born.

Figures 2a and 2b present hazard estimates of first birth through age 24. Figure 2a ignores sexual onset timing, whereas Figure 2b begins exposure in the month of sexual debut. Figure 2a indicates that the third-plus generation had the highest hazards of first birth across all ages in the exposure period. By contrast, in Figure 2b, differences between sexually experienced foreign-born and third-plus generation young women were negligible throughout adolescence. Sexually experienced second-generation women had the lowest hazard of first birth across most ages.

### Multivariate Analyses

**Proximate Determinants**—Table 2 presents estimated hazard ratios from survival models incorporating the socio-demographic controls. A hazard ratio greater than 1 indicates that the variable increased the risk of sexual onset or first birth—or equivalently, lowered the average age at first sex or first birth. The first column presents results from a conventional model predicting first birth while ignoring sexual onset timing ( $0 \rightarrow T_2$ ). Estimates indicate

a 39% lower risk of first birth for the second generation relative to the third-plus generation, and a 36% lower risk for the foreign-born.

The second and third models of Table 2 display results from the sequential hazard models for the transitions to first intercourse ( $0 \rightarrow T_1$ ) and first birth conditional on sexual onset ( $T_1 \rightarrow T_2$ ), respectively. Foreign-born and second-generation women initiated sexual activity later than the third-plus generation, with the contrast particularly large for the foreign-born. The Sequential 2 model shows that among those who had initiated sexual activity, risk of fertility did not, however, differ significantly between the foreign-born and third-plus generation. It is important to note that, nonetheless, first birth risks were not on average higher post-onset for the foreign-born, as might be expected if immigrant women adopted fewer fertility control measures than the third-plus generation. For the second generation, a significantly lower risk of first birth persisted in the Sequential 2 model, suggesting that their lower fertility risk observed in the first model reflected both later sexual onset as well as higher levels of fertility control once sexually active.

Results for the sexual onset variables included in the Sequential 2 model indicated that risks of first birth were low in the first seven months following onset, consistent with standard gestational durations. Later onset was marginally significantly associated with delayed fertility.

Panel A in Table 3 presents predictions of median age at sexual onset by generational status, derived from Table 2's Sequential 1 model with other covariates set at their means. The predicted median age at first sex was 199 months (16.6 years) for the third-plus generation, 203 months (16.9 years) for the second generation, and 209 months (17.4 years) for the foreign-born.

Panel B in Table 3 presents predicted probabilities of first birth by age 21, derived from Table 2's Sequential 2 model. Conditional on their median age at sexual onset, about 18% of third-plus generation young women were predicted to give birth by age 21, compared to 12% of the second generation and foreign-born. The second column in Panel B presents a counterfactual: what would the predictions be if all three groups had the median age at sexual onset of the third-plus generation? The last two rows of the second column show that when age at onset was equalized, the predicted difference between the third-plus generation and foreign-born decreased from 6.6 percentage points to 3.4 percentage points, almost a 50% decline. The predicted difference between the third-plus and second generation decreased from 6.5 percentage points to 5.7 percentage points. These results further support the idea that sexual onset timing explained more of the delayed fertility observed among the foreign-born than it did for the second generation. Panel C changes the age cut-off for the predicted probabilities to age 24; although the probabilities of first birth were higher for all groups, generational trends were similar to Panel B.

**Social Determinants**—Tables 4 and 5 investigate contextual explanations for generational differences in the  $0 \rightarrow T_1$  and  $T_1 \rightarrow T_2$  transitions, respectively. In Table 4, Model 1 repeats the results presented in Table 2's Sequential 1 Model. The subsequent

models add family- and neighborhood-level measures, as well as the individual-level intervening variables.

Model 2 of Table 4 reveals that Wave 1 family attributes of children of immigrants were, on balance, protective against early sexual activity. When family traits were included, the gaps in sexual onset risk between both groups and the third-plus generation decreased, and separate *suest* tests indicated that the increases in coefficients between models were statistically significant. The increase in the foreign-born coefficient was particularly sizeable. Higher quality family ties, greater parental monitoring, and use of a non-English language in the home all delayed sexual onset. Residence in family structures other than two-biological parent accelerated sexual debut.

In Model 3, neighborhood-level attributes also significantly attenuated the links between generational status and onset timing, but the increase in coefficients was not as sizeable as in Model 2. Higher neighborhood immigrant concentration delayed sexual activity. Concentrated neighborhood poverty accelerated sexual onset. Nonetheless, in Model 4, which added the family variables, immigrant concentration was no longer significantly associated with risk of onset.

In Model 5, non-sexual risk behavior correlated with higher risk of sexual onset, and greater school attachment with lower risk. High college expectations were not independently associated with onset timing. However, adding these individual-level variables did not significantly change the coefficients for the foreign-born or second generation, suggesting that these factors played a minimal role in linking the contextual factors with sexual behavior.

Table 5 displays hazard ratios from the analyses predicting first birth conditional on sexual onset; Model 1 repeats Table 2's Sequential 2 Model. In Model 2, family traits explained virtually none of the generational differences observed in Model 1. Neighborhood traits (Model 3) explained more of the generational differences in fertility than did family traits, and the changes in coefficients between Models 1 and 3 were statistically significant. Because Table 1 showed little variation in neighborhood poverty by generational status, differences in immigrant concentration likely drove this result. In Models 4 and 5, a sizeable difference in post-onset fertility risk between second and third-plus generation young women persisted.

### Robustness Checks

In separate analyses, I conducted three robustness checks. First, because a growing literature identifies differences among the foreign-born between those who migrate as young children and those who migrate later in childhood (e.g., Bleakley & Chin, 2010; Rumbaut, 2004), I examined variation by age at migration (Appendix Table 1). Although the number of women who migrated in adolescence was small, I found that those who migrated at age 10 or older had the latest sexual onset, consistent with other research (e.g., Goldberg et al., 2017). I found no significant differences by age at migration in the timing of first birth post-onset. A further test of within-generation heterogeneity investigated differences between second-generation youth with two foreign-born parents and their counterparts with one foreign-born

parent (Rumbaut, 2004). I found that youth with two foreign-born parents had lower risk of sexual onset relative to the third-plus generation, while those with only one foreign-born parent did not significantly differ from the third-plus generation (Appendix Table 1). I found no statistically significant difference in the risk of first birth post-onset between the two second-generation groups, however.

Second, because Add Health is a sample of youth appearing on school rosters, results could be biased by selectivity in high school dropout and, among adolescent migrants, in post-migration enrollment in American high schools (Oropesa & Landale, 2009). Udry and Chantala (2003) estimated biases from omitting high school dropouts and concluded that their absence did not significantly bias estimates for the total population. In ancillary analyses limiting the sample to respondents in grades 7–9 at Wave 1 (grades with presumably lower dropout rates and higher post-migration enrollment), I found virtually identical generational differences in sexual onset timing to the Table 2 results (Appendix Table 2). For fertility post-onset, the difference in coefficients between the second and third-plus generation was 15% smaller than in Table 2 and no longer statistically significant, suggesting that selectivity in who persisted in school may slightly inflate the second generation's advantage. The findings for the foreign-born were virtually identical to the results for the full sample. I also compared the timing of first birth and sexual onset in the full analytic Add Health sample to findings from a household-based survey, the National Survey of Family Growth (NSFG) (results available upon request). The median age at first birth for the Add Health analytic sample was roughly 25. Using 1998–2010 NSFG data, Finer and Philbin (2014) estimated median ages at first birth ranging from 25–27 for similar birth cohorts. Median age at sexual onset was approximately 17 in the Add Health and NSFG samples.

Finally, because previous research indicates that the relationship between generational status and sexual onset timing may vary by race/ethnicity (Spence & Brewster, 2010), I examined the robustness of the results to incorporating interactions between race/ethnicity and immigrant generation (Appendix Table 3). Associations between foreign-born status and risk of sexual onset were less strong for non-Hispanic Whites and Blacks than for the other racial/ethnic groups. However, there was little evidence of variation by race/ethnicity in associations between generational status and the risk of fertility post-onset; none of the interaction terms was significantly different from 1.0, nor were they jointly significant.

## DISCUSSION

Despite important gains in prevention, US rates of early fertility continue to exceed those of other industrialized countries, and major differences by population group persist. This study contributes to existing literature by investigating differences in early childbearing between children of immigrants and children of US-born parents in a large, diverse sample, and exploring a host of potential proximate and contextual mechanisms. Although prior research has investigated the contours and origins of racial disparities in early fertility (e.g., Sweeney & Raley, 2014), variation by generational status has been less well understood. Given expansions in the share of the youth population with immigrant parents, understanding

whether and why such differentials exist is vital to designing adequate policy responses and foreseeing future trends.

Overall, I found that foreign-born and second-generation young women began childbearing at later ages than their counterparts with US-born parents. While cumulative fertility across all ages and parities has been shown to decline across generations (e.g., Choi, 2014; Parrado, 2011), these results are consistent with several other studies that have found that early fertility in particular actually increases across generations (e.g., Frank & Heuveline, 2005; Rumbaut, 2008). Using a sequential hazard framework that modeled separately the sexual onset and fertility transitions (Wu & Martin, 2009, 2015), I examined to what extent the delayed fertility observed among the foreign-born and second generation reflected discrepancies in the timing of sexual onset as opposed to post-onset behaviors. Echoing prior research (e.g., Goldberg et al., 2017; Harris, 1999), I found that children of immigrants initiated sexual activity later than the third-plus generation, with a clear gradient by generational status. However, sexually active foreign-born women did not differ significantly from the third-plus generation in their risk of early fertility. By contrast, sexual onset timing explained little of the lower risk of fertility observed for second-generation women, underscoring the centrality of fertility control behaviors post-onset for this group.

Family characteristics explained much of the delayed sexual onset observed among children of immigrants, particularly the foreign-born. Although parents of the foreign-born were less educated on average than were those of the third-plus generation, parental monitoring was higher, family relationships were closer, and attachment to origin country norms was strong; on balance, these family attributes were associated with delayed sexual activity. Nonetheless, once sexually active, neighborhood traits, particularly immigrant concentration, were more important than family traits in explaining the lower risk of fertility observed among children of immigrants.

Family and neighborhood characteristics were less protective for the second generation than for the foreign-born, which squared with bivariate findings that although a greater share of the second generation lived with both biological parents, a smaller share spoke a language other than English in the home and their family relationship quality was lower. The second generation also resided in neighborhoods with lower concentrations of immigrants than the foreign-born. In general, that the second generation in this sample experienced later fertility than the third-plus generation net of all of the family, neighborhood, and individual-level measures suggests protection by other unmeasured factors. Peer, school, and partner traits might be productively examined in future research, as well as access to reproductive health services.

This study has several data-related limitations. First, although a strength of longitudinal data like Add Health is the ability to follow one cohort over the life course, a limitation is the inability to capture intergenerational change per se, as would be possible with data linking multiple biological generations (Parrado & Morgan, 2008). Rather, I investigated differences between children of immigrants and children of US-born parents within a single cohort. Furthermore, the study's sample size did not support in-depth investigation of variations within the three generational status groupings by country of origin or age at migration,

although results from several robustness checks were noted. The limited neighborhood-level measures available also precluded distinguishing the concentration of immigrants from particular national origin groups to account for variations in sexual onset and fertility timing between origin countries.

A final limitation is the ability to distinguish only between sexual onset timing and all other fertility control behaviors. It is possible that the particular behaviors adopted by sexually active children of immigrants differ from those adopted by children with US-born parents. Future research should distinguish between the other proximate determinants (e.g., contraceptive use, sexual frequency, and abortion), ideally with diary or calendar data that can track behaviors over time at short intervals (Barber et al., 2011; Goldberg & Tienda, 2017).

These limitations notwithstanding, the study results underscore the importance of attending to generational status in research and policy work related to early fertility. As the proportion of youth who are children of immigrants continues to expand (Passel, 2011), the behaviors of children of immigrants can be expected to increasingly influence population trends in early childbearing. Notably, if the lower risk of early fertility observed among children of immigrants in this sample were to persist in later birth cohorts, this would suggest potential further population-level declines in early fertility. The study findings also highlight the continuing importance of attending to proximate determinants of fertility, focusing attention on two separate transitions: a sexual onset process, and a process in which some sexually active women proceed to a first birth. Results indicated that immigrant advantages were not uniformly experienced with respect to both processes. Finally, that family and neighborhood factors exerted different influences on the sexual and fertility behaviors of immigrant youth reinforces the importance of enacting policies and programs at multiple levels and supports contextual theories of youth behavior.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

## Acknowledgments

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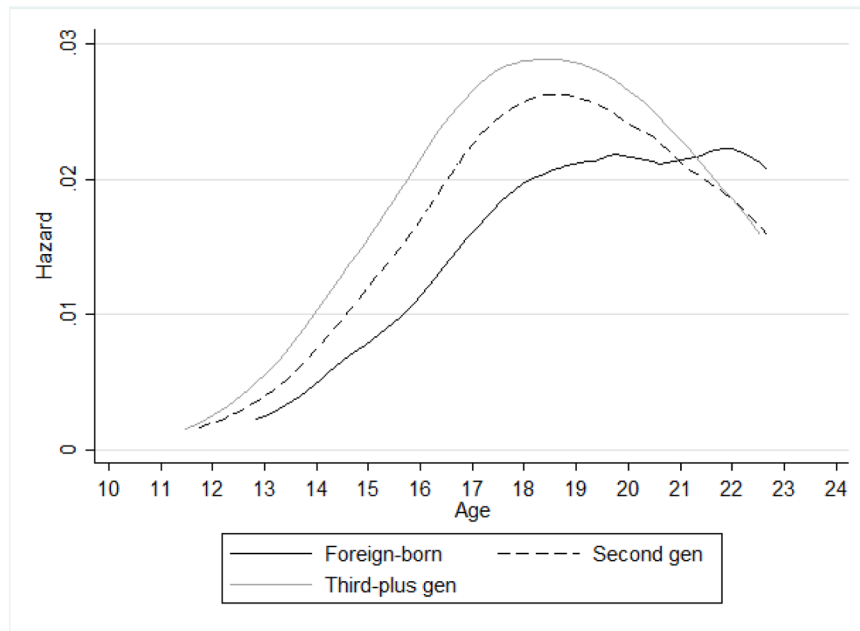
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**FIGURE 1.**  
HAZARD OF SEXUAL ONSET AGE 10 THROUGH AGE 24, BY GENERATIONAL STATUS

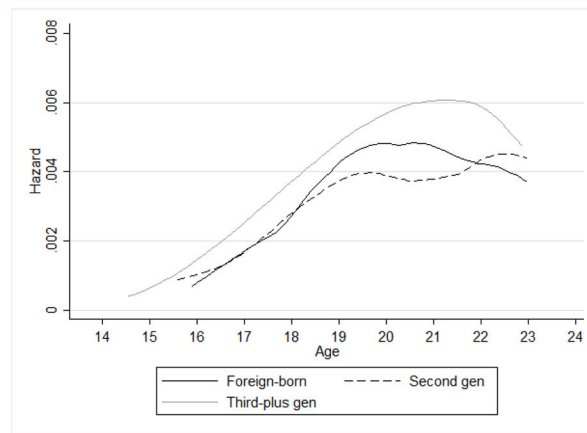


FIGURE 2A

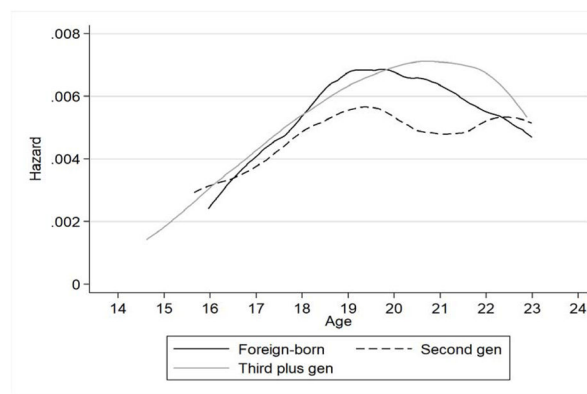


FIGURE 2B

**FIGURE 2.**  
 FIGURE 2A. HAZARD OF FIRST BIRTH THROUGH AGE 24, BY GENERATIONAL STATUS, IGNORING TIMING OF SEXUAL ONSET  
 FIGURE 2B. HAZARD OF FIRST BIRTH THROUGH AGE 24, BY GENERATIONAL STATUS, BEGINNING EXPOSURE PERIOD IN MONTH OF SEXUAL ONSET

**Table 1**  
**Descriptive Statistics of Independent Variables, by Generational Status**

(percentages unless otherwise noted)

Characteristic	Total	Foreign- born	Second generation	Third-plus generation
<i>Family context at Wave 1</i>				
Family structure				
2 biological parents <sup>b</sup>	54.92	57.13	62.55	53.83
2 parents <sup>b</sup>	17.05	15.80	12.46	17.70
Single mother	22.03	18.59	19.92	22.56
Single father	2.37	3.04	1.94	2.36
Other	3.63	5.43	3.14	3.54
Quality of family relationship (mean) <sup>c</sup>	15.98 (2.83)	16.16 (3.57)	15.74 (3.33)	15.99 (2.71)
Parental monitoring (mean) <sup>a,b</sup>	1.67 (1.35)	1.96 (1.76)	1.85 (1.64)	1.62 (1.27)
High parental college expectations <sup>a,c</sup>	55.58	64.42	57.80	54.60
Language other than English usually spoken in home <sup>a,b,c</sup>	7.84	62.69	32.09	0.52
<i>Neighborhood context at Wave 1</i>				
Immigrant concentration (mean) <sup>a,b,c</sup>	-0.21 (0.76)	0.90 (1.85)	0.37 (1.50)	-0.37 (0.34)
Concentrated poverty (mean)	-0.01 (1.02)	0.07 (0.99)	-0.03 (1.16)	-0.02 (1.00)
<i>Individual-level covariates at Wave 1</i>				
School attachment (mean) <sup>a,c</sup>	12.16 (2.84)	12.79 (3.30)	12.34 (3.23)	12.09 (2.73)
High college expectations <sup>a,b</sup>	60.83	55.28	54.25	62.07
Non-sexual risk behavior (mean) <sup>a,b,c</sup>	1.14 (1.18)	0.87 (1.28)	1.30 (1.46)	1.15 (1.13)
<i>Socio-demographic controls</i>				
Age at first interview (mean) <sup>a,c</sup>	15.29 (1.80)	15.74 (2.17)	15.26 (2.20)	15.26 (1.71)
Parental education at Wave 1				
Less than high school <sup>a,b,c</sup>	13.45	34.85	25.82	10.25
High school diploma or GED <sup>a,b,c</sup>	31.42	16.96	23.25	33.57
More than high school <sup>b</sup>	54.52	46.11	49.37	55.81
Missing parental education <sup>a,b</sup>	0.61	2.07	1.56	0.38
Race/ethnicity				
Non-Hispanic White <sup>a,b,c</sup>	67.25	13.56	32.99	75.66
Non-Hispanic Black <sup>a,b</sup>	15.95	4.94	7.20	17.89
Non-Hispanic Asian <sup>a,b,c</sup>	3.47	27.48	12.10	0.50
Non-Hispanic other race <sup>a,b</sup>	1.51	4.24	3.00	1.11
Mexican <sup>a,b</sup>	6.96	25.20	25.11	3.33
Other Hispanic <sup>a,b</sup>	4.87	24.58	19.60	1.52
Married before age 24	28.71	24.84	26.77	29.26
<b>N respondents</b>	<b>8,777</b>	<b>800</b>	<b>1,225</b>	<b>6,752</b>

Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

*Notes:* Means and percentages were weighted to adjust for sample design. Standard deviations are in parentheses below means.

<sup>a</sup>Significant difference between foreign-born and third-plus generation ( $p < 0.05$ ).

<sup>b</sup>Significant difference between second generation and third-plus generation ( $p < 0.05$ ).

<sup>c</sup>Significant difference between foreign-born and second generation ( $p < 0.05$ ).

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**Table 2**  
 Hazard Ratios from Piecewise Exponential Survival Models Predicting First Birth, with Sociodemographic Controls: “Conventional” Model Ignores Sexual Onset Timing, and Sequential Models Encompass the Transitions to First Intercourse ( $0 \rightarrow T_1$ ) and First Birth Post-Sexual Onset ( $T_1 \rightarrow T_2$ )

	Conventional: $0 \rightarrow T_2$		Sequential 1: $0 \rightarrow T_1$		Sequential 2: $T_1 \rightarrow T_2$	
	HR	95% CI	HR	95% CI	HR	95% CI
<i>Immigrant generation</i> (ref: third-plus gen)						
Foreign-born	0.64*	0.45 0.92	0.69***	0.57 0.83	0.80	0.57 1.11
Second generation	0.61***	0.47 0.79	0.84*	0.74 0.96	0.67**	0.51 0.86
<i>Socio-demographic controls</i>						
Age at Wave 1	0.95**	0.92 0.98	0.90***	0.87 0.93	0.94**	0.91 0.97
Parental education (ref: > high school)						
Less than high school	2.14***	1.80 2.55	1.41***	1.26 1.58	1.84***	1.53 2.21
High school diploma or GED	1.80***	1.58 2.05	1.34***	1.23 1.45	1.56***	1.38 1.78
Race/ethnicity (ref: non-Hispanic White)						
Non-Hispanic Black	2.19***	1.82 2.62	1.28***	1.16 1.41	1.84***	1.56 2.17
Non-Hispanic Asian	0.87	0.53 1.45	0.85	0.69 1.04	0.97	0.58 1.62
Non-Hispanic other race	1.15	0.66 2.00	1.00	0.73 1.36	1.15	0.69 1.91
Mexican	1.48*	1.09 2.02	0.85†	0.73 1.00	1.66***	1.29 2.14
Other Hispanic	1.31*	1.02 1.67	0.96	0.81 1.15	1.31*	1.03 1.68
Married	6.68***	5.70 7.84	7.78***	5.75 10.51	5.30***	4.56 6.17
<i>Sexual onset</i>						
Age (in months) at onset					1.00†	0.99 1.00
Duration following onset (ref: 15–36 mo.)						
0–7					0.46***	0.33 0.64
8–14					0.99	0.79 1.23
37+					1.07	0.90 1.27

Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Notes: Exposure period spanned ages 10–24. All models also included dummy variables for age and a flag for missing parental education. The sequential models also included a flag for whether sexual onset month was imputed. Analyses were adjusted for sample design.

**Table 3**

Predicted Median Age at Sexual Onset and Predicted Probability of First Birth by Age 21 and Age 24, by Generational Status

<b>Panel A: Predicted median age at first sexual intercourse (in months)</b>		
Third-plus generation	199	
Second generation	203	
Foreign-born	209	
<b>Panel B: Predicted probability of first birth by age 21 (%)</b>		
	Conditional on median age at onset for group	Conditional on onset at 199 months
Third-plus generation	18.23	18.23
Second generation	11.72	12.54
Foreign-born	11.59	14.83
<i>Predicted difference between groups (percentage points)</i>		
Third-plus generation – second generation	6.51	5.69
Third-plus generation – foreign-born	6.64	3.40
<b>Panel C: Predicted probability of first birth by age 24 (%)</b>		
	Conditional on median age at onset for group	Conditional on onset at 199 months
Third-plus generation	31.51	31.51
Second generation	21.42	22.27
Foreign-born	22.89	26.07
<i>Predicted difference between groups (percentage points)</i>		
Third-plus generation – second generation	10.09	9.24
Third-plus generation – foreign-born	8.62	5.44

*Source:* National Longitudinal Study of Adolescent to Adult Health (Add Health)

*Notes:* Predictions were calculated using estimates from the Sequential 1 (Panel A) and Sequential 2 (Panels B and C) models in Table 2. All other covariates were held at their respective means.



**Table 4**  
 Hazard Ratios from Piecewise Exponential Survival Models Predicting Sexual Onset ( $0 \rightarrow T_1$  Transition)

	Model 1		Model 2		Model 3		Model 4		Model 5							
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI						
<b>Immigrant generation</b> (ref: 3 <sup>rd</sup> + gen)																
Foreign-born	0.69 <sup>***</sup>	0.57	0.83	0.82 <sup>†</sup>	0.66	1.02	0.73 <sup>**</sup>	0.61	0.88	0.85	0.69	1.06	0.92	0.74	1.14	
Second generation	0.84 <sup>*</sup>	0.74	0.96	0.91	0.80	1.05	0.87 <sup>*</sup>	0.76	0.99	0.93	0.81	1.06	0.91	0.79	1.04	
<b>Family context (Wave 1)</b>																
Family structure (ref: two bio parents)																
Two parents				1.43 <sup>***</sup>	1.29	1.59		1.43 <sup>***</sup>	1.29	1.58	1.37 <sup>***</sup>	1.24	1.52			
Single mother				1.32 <sup>***</sup>	1.21	1.43		1.30 <sup>***</sup>	1.19	1.41	1.28 <sup>***</sup>	1.17	1.39			
Single father				1.60 <sup>***</sup>	1.33	1.93		1.59 <sup>***</sup>	1.32	1.92	1.51 <sup>***</sup>	1.26	1.82			
Other				1.48 <sup>***</sup>	1.22	1.79		1.45 <sup>***</sup>	1.20	1.76	1.36 <sup>**</sup>	1.13	1.65			
Quality of family relationship				0.93 <sup>***</sup>	0.92	0.94		0.93 <sup>***</sup>	0.92	0.95	0.97 <sup>***</sup>	0.95	0.98			
Parental monitoring				0.94 <sup>***</sup>	0.92	0.97		0.94 <sup>***</sup>	0.91	0.97	0.96 <sup>**</sup>	0.93	0.99			
High parental college expectations				1.01	0.95	1.09		1.02	0.95	1.09	1.03	0.96	1.10			
Non-English language in home				0.65 <sup>***</sup>	0.55	0.77		0.66 <sup>***</sup>	0.55	0.78	0.71 <sup>***</sup>	0.60	0.83			
<b>Neighborhood context (Wave 1)</b>																
Immigrant concentration				0.93 <sup>*</sup>	0.87	0.98		0.93 <sup>*</sup>	0.87	0.98	0.96	0.91	1.01	0.95 <sup>†</sup>	0.90	1.01
Concentrated poverty				1.07 <sup>**</sup>	1.03	1.12		1.06 <sup>**</sup>	1.02	1.11	1.07 <sup>**</sup>	1.03	1.12			
<b>Individual-level covariates (Wave 1)</b>																
School attachment													0.98 <sup>*</sup>	0.97	1.00	
High college expectations													0.99	0.91	1.07	
Non-sexual risk behavior													1.35 <sup>***</sup>	1.30	1.40	
<b>Socio-demographic controls</b>																
Age at Wave 1	0.90 <sup>***</sup>	0.87	0.93	0.87 <sup>***</sup>	0.84	0.89	0.90 <sup>***</sup>	0.87	0.93	0.87 <sup>***</sup>	0.84	0.89	0.86 <sup>***</sup>	0.83	0.88	
Parental education (ref: > high school)																
Less than high school	1.41 <sup>***</sup>	1.26	1.58	1.38 <sup>***</sup>	1.24	1.54	1.35 <sup>***</sup>	1.20	1.52	1.33 <sup>***</sup>	1.19	1.49	1.30 <sup>***</sup>	1.16	1.45	

	Model 1		Model 2		Model 3		Model 4		Model 5						
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI					
High school diploma or GED	1.34***	1.23	1.45	1.29***	1.19	1.40	1.31***	1.21	1.41	1.27***	1.17	1.37	1.26***	1.16	1.37
Race/ethnicity (ref: NH White)															
Non-Hispanic Black	1.28***	1.16	1.41	1.23***	1.13	1.34	1.16**	1.04	1.29	1.14**	1.03	1.25	1.16**	1.05	1.28
Non-Hispanic Asian	0.85	0.69	1.04	0.92	0.76	1.10	0.85	0.69	1.05	0.92	0.76	1.11	0.90	0.73	1.09
Non-Hispanic other race	1.00	0.73	1.36	1.04	0.80	1.35	0.96	0.69	1.32	1.00	0.76	1.32	0.98	0.75	1.29
Mexican	0.85 <sup>†</sup>	0.73	1.00	1.00	0.85	1.17	0.88	0.74	1.03	1.00	0.85	1.18	0.89	0.76	1.04
Other Hispanic	0.96	0.81	1.15	1.07	0.92	1.25	1.02	0.83	1.26	1.10	0.92	1.31	1.00	0.83	1.19
Married	7.78***	5.75	10.51	8.29***	6.32	10.88	7.57***	5.55	10.34	8.13	6.18	10.68	8.82***	6.71	11.59

Source: National Longitudinal Study of Adolescent to Adult Health (Add Health)

Notes: Exposure period spanned ages 10–24. All models also included dummy variables for age as well as flags for whether sexual onset month was imputed and parent’s education was missing. Analyses were adjusted for sample design.

<sup>†</sup> p<.1;  
 \* p<.05;  
 \*\* p<.01;  
 \*\*\* p<.001

**Table 5**  
 Hazard Ratios from Piecewise Exponential Survival Models Predicting First Birth After Sexual Onset ( $T_1 \rightarrow T_2$  Transition)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
<b>Immigrant generation</b> (ref: 3 <sup>rd</sup> + gen)										
Foreign-born	0.80	0.57 1.11	0.80	0.55 1.15	0.92	0.67 1.26	0.89	0.62 1.27	0.87	0.60 1.26
Second generation	0.67**	0.51 0.86	0.69**	0.52 0.91	0.72*	0.55 0.93	0.72*	0.55 0.95	0.72*	0.55 0.96
<b>Family context (Wave 1)</b>										
Family structure (ref: two bio parents)										
Two parents			1.35***	1.15 1.53			1.32***	1.15 1.52	1.32***	1.15 1.52
Single mother			1.35***	1.18 1.55			1.33***	1.15 1.52	1.32***	1.15 1.51
Single father			1.23	0.94 1.00			1.23	0.94 1.62	1.25	0.95 1.64
Other			1.58***	1.23 2.03			1.58***	1.23 2.04	1.59***	1.24 2.03
Quality of family relationship			0.98*	0.96 1.00			0.98*	0.96 1.00	0.98†	0.96 1.00
Parental monitoring			1.04†	1.00 1.09			1.04	0.99 1.09	1.04	0.99 1.08
High parental college expectations			0.89*	0.81 0.98			0.90*	0.81 0.99	0.93	0.84 1.03
Non-English language in home			1.09	0.83 1.43			1.21	0.91 1.60	1.22	0.91 1.62
<b>Neighborhood context (Wave 1)</b>										
Immigrant concentration					0.85**	0.77 0.94	0.84***	0.76 0.92	0.84***	0.77 0.92
Concentrated poverty					1.17***	1.09 1.25	1.15***	1.08 1.23	1.15***	1.08 1.23
<b>Individual-level covariates (Wave 1)</b>										
School attachment									0.99	0.97 1.01
High college expectations									0.86	0.77 0.96
Non-sexual risk behavior									0.99	0.94 1.03
<b>Sexual onset</b>										
Age (in months) at onset			1.00†	0.99 1.00	1.00†	0.99 1.00	1.00	0.99 1.00	1.00	0.99 1.00
Duration following onset (ref: 15–36 mo.)										
0–7			0.46***	0.33 0.64	0.46***	0.33 0.63	0.46***	0.33 0.64	0.46***	0.33 0.64
8–14			0.99	0.79 1.23	0.99	0.79 1.23	0.99	0.79 1.23	0.99	0.79 1.23

	Model 1		Model 2		Model 3		Model 4		Model 5			
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI		
37+	1.07	0.90	1.27	1.07	0.90	1.27	1.08	0.91	1.28	1.07	0.91	1.27
<i>Socio-demographic controls</i>												
Age at Wave 1	0.94**	0.91	0.97	0.95**	0.91	0.98	0.94**	0.91	0.98	0.95**	0.91	0.98
Parental education (ref: > high school)												
Less than high school	1.84***	1.53	2.21	1.65***	1.37	2.00	1.67***	1.38	2.02	1.51***	1.24	1.83
High school diploma or GED	1.56***	1.38	1.78	1.51***	1.32	1.71	1.51***	1.33	1.72	1.46***	1.28	1.66
Race/ethnicity (ref: NH White)												
Non-Hispanic Black	1.84***	1.56	2.17	1.74***	1.47	2.06	1.50***	1.23	1.83	1.45***	1.19	1.76
Non-Hispanic Asian	0.97	0.58	1.62	0.95	0.55	1.64	0.96	0.55	1.69	0.94	0.52	1.69
Non-Hispanic other race	1.15	0.69	1.91	1.10	0.66	1.84	1.09	0.66	1.80	1.04	0.62	1.73
Mexican	1.66***	1.29	2.14	1.61***	1.25	2.07	1.76***	1.40	2.23	1.68***	1.32	2.13
Other Hispanic	1.31*	1.03	1.68	1.28 <sup>†</sup>	0.98	1.65	1.53**	1.18	1.99	1.48**	1.13	1.94
Married	5.30***	4.56	6.17	5.26***	4.52	6.12	5.21	4.51	6.04	5.17***	4.46	5.98

Notes: Exposure period spanned ages 10–24. Models also included dummy variables for age and flags for whether sexual onset month was imputed and parent’s education was missing. Analyses were adjusted for sample design.

<sup>†</sup> p<.1;  
 \* p<.05;  
 \*\* p<.01;  
 \*\*\* p<.001