

## **Gender, Nativity and Family Variations in the Timing of Sexual Initiation**

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Initiation of sexual activity is a pivotal event in the transition to adulthood, and a growing body of evidence suggests that the timing of this event has enormous consequences for young people's health and wellbeing. In addition to heightened risk for adolescent pregnancy and childbearing (Resnick et al. 1997; van Roode et al. 2012), early sexual initiation has been linked with increased sexual risk behavior (Sandfordt et al. 2008) and elevated risk of sexually transmitted infection (Bosch et al. 2002; Kaestle et al. 2005; Pettifor et al. 2004). In addition, sexual debut occurring early relative to the age norm for entering intimate relationships has been linked with low self-esteem and an elevated incidence of depression (Meier 2007).

That immigrants exhibit better health than natives across a variety of outcomes, despite higher levels of poverty, focused research attention on potential explanations for their health advantage (Cho et al. 2004; Hummer et al. 2007; Harris et al. 2009; Perreira and Ornelas 2011). Several studies show that immigrant youth are less likely than natives to participate in risky health behaviors like smoking and substance use (Gfroerer and Tan 2003; Kimbro 2009; Perreira and Ornelas 2011), but others point out that immigrants' health advantages are limited to recent arrivals and that they fade with time in the United States. With regard to sexual activity, Spence and Brewster (2010) and McDonald et al. (2009) show that first generation youth initiate sexual activity later than youth of the second and subsequent generations. They do not, however, consider how the health protection afforded by immigrant status varies over time or according to age at immigration. This oversight is important because there is growing evidence that age at

immigration is highly consequential for immigrants' integration prospects, including partner selection and family formation (Choi and Tienda 2011; Beck et al. 2012).

Building on previous research about nativity variations in health, and adolescent sexual activity in particular, our study extends the existing literature in two key ways. First, we consider whether and how *age at immigration* is associated with the timing of sexual activity for first generation youth. As a proxy for the extent of early socialization into host country institutions and values and consolidation of reference groups, age at immigration is the core dimension of Rumbaut's synthetic "decimal" generations, which are social aggregates "defined by age and life stage at migration for the foreign born, and by parental nativity for the native born" (Rumbaut 2004: 1160). Although there exists an extensive literature documenting associations between immigrant generation and myriad child and adolescent outcomes (Oropesa and Landale 1997b), there is no consensus about the precise age boundaries corresponding to the decimal generations because the importance of age depends on the outcome of interest.

Whether immigration at younger ages is associated with earlier initiation of sexual activity is an empirical question. On the one hand, youth who arrive before adolescence will likely be socialized into the values and norms of the host society, and hence their sexual behavior should more approximate that of their native born peers, which would likely mean earlier sexual debut. On the other hand, youth who arrive post-puberty may be more prone to early sexual debut because they face greater adaptation challenges, including a slower pace of second language acquisition (Knudsen et al. 2006) and larger educational gaps (Bleakley and Chin 2010), and perhaps a heightened need for the emotional support of a partnership. The association between age at immigration and the timing of sexual initiation will likely also vary by place of

origin, and in particular by normative differences between the source country and the United States in age at sexual debut and sexual activity outside of marriage.

Our second extension of the existing literature is attention to the influence of family structure and family *stability* for sexual debut. Prior work on the immigrant health advantage among children posits that this health advantage partly derives from immigrant children's greater tendency than natives to live in two-parent households and with married parents (Brandon 2002; Landale et al. 2011; Oropesa and Landale 1997a; Perreira and Ornelas 2011), which also suggests that they live in more stable families. Several studies provide evidence that parental partnership instability is independently associated with a higher risk of early sexual debut (Albrecht and Teachman 2003; Brauner-Otto and Axinn 2010; Capaldi et al. 1996; Fomby et al. 2010; Wu and Thomson 2001), which implies that stability in parental partnership could mediate any observed protective effect of immigrant status. However, the portrait of protective family arrangements painted by existing research may belie family instability because migration frequently involves family disruption and reconstitution as well as periods of doubling up with extended kin and non-kin (Adsera and Tienda 2012; Van Hook and Glick 2007). Because immigrants' family structure and relative parental partnership stability likely protect youth from risky behaviors, while other types of family instability pose risks, the net association with sexual debut is indeterminate. We use multiple measures of family instability to better capture the family volatility experienced by migrants. For example, consideration of changes in co-residence with mothers—as opposed to the changes in mothers' partnership status that researchers more typically measure—might allow us to proxy factors that can cause family instability for immigrant children like staged migration, deportation, and economic or political factors in the country of origin (Landale et al. 2011).

In sum, we address two questions that have been ignored in prior research about nativity variations in the lifecycle timing of initiation of sexual activity. First, is age at immigration associated with the timing of sexual debut and if so, does it prolong or accelerate sexual initiation? With regard to this question, we will also pay close attention to how the particular region of origin tempers or accentuates these associations. Second, does family instability accelerate the age at first intercourse for youth and if so, how does it mediate the relationship between nativity and sexual behavior? We also ask whether the consequences for sexual debut of family instability differ according to age at immigration.

### **Data and Methods**

We use data from the 1997 National Longitudinal Survey of Youth (NLSY97), a representative longitudinal survey, to examine links between immigrant status and the timing of first sexual intercourse among young women and men in the United States. Interviews have been conducted annually since 1997 with a cohort of 8,984 young women and men who were aged 12-16 years on December 31, 1996. Baseline interviews were conducted with each youth and a participating parent in 1997; in subsequent years, only youth were interviewed. In addition to prospectively collected information, complete histories have been collected retrospectively on topics such as sexual activity, sexual maturation, family structure, and parental unions. We use a combination of retrospective and prospectively collected information from the fourteen available waves of the NLSY97 (1997-2010) to investigate nativity variations in the timing of first sexual intercourse.<sup>1</sup>

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<sup>1</sup> We are also investigating the possibility of supplementing the analyses from the NLSY97 with analyses from the National Longitudinal Study of Adolescent Health (Add Health), which has a larger sample of foreign-born youth. Add Health is a longitudinal study of a nationally representative sample of 20,745 adolescents in grades 7-12 in the United States during the 1994-95 school year. Four waves of data collection have been conducted, with the most recent in 2008, when sample respondents were ages 24-32.

To exploit the availability of time-varying indicators, we plan to employ event history methods. Event history methods are particularly useful for examining outcomes such as sexual initiation because they allow for precise ordering around the outcome of interest and explicitly incorporate right-censored cases. In particular, we plan to use discrete-time logit models to estimate the probability of sexual debut occurring in a given person-year. By interacting the key independent variables with the time-varying indicator of age, these models also provide a straightforward way of examining time dependence. We anticipate that associations between nativity and sexual debut may be greatest in early adolescence, when sexual activity is less common and perhaps more likely to constitute acting-out behavior, and when young people also find themselves in the midst of major emotional and physical developmental changes associated with puberty (Goldberg forthcoming).

We include all individuals in our analysis, regardless of whether they had experienced first sexual intercourse by the time of first interview in 1997, because of our particular interest in early sexual debut. About one-fifth of the sample initiated sexual activity before the first interview; therefore, excluding them from the analysis would bias the sample toward those with later first sex. Availability of histories from birth on sexual behavior, sexual maturation, and family structure allows us to ensure correct ordering of key events around sexual initiation, regardless of whether sexual initiation occurred before or after the first wave of data collection. We will explore the most appropriate way to control for the fact that some information will have been collected prospectively and some retrospectively.

We measure age at sexual debut using reports on the timing of first sexual intercourse from all fourteen available waves of the NLSY97. Respondents are asked at each wave whether they have yet experienced first intercourse, until reporting sexual initiation. We measure nativity

with regard to immigrant generation, age at immigration, and place of origin. Our measures of family structure and stability encompass parental partnership status and stability and parental co-residence and changes therein. Our empirical models also control for other factors linked with sexual initiation in prior research, such as religion and religiosity, parents' completed education, household income, number of adults in the household, age at puberty, parental monitoring and supervision, and parental support.

### **Preliminary Results**

Table 1 presents preliminary descriptive statistics at the individual level for the dependent and key independent variables. Figures 1, 2, and 3 display Kaplan-Meier survival estimates. In construction of the survival curves, all individuals interviewed in Wave 1 contribute person-years<sup>2</sup> from age 9 until they initiate sexual activity, drop out of the study, or reach Wave 14 (2010), whichever comes first.

Table 1 indicates that the mean age at first sexual intercourse for individuals who reported sexual intercourse at some point in the study period was 16.7 years for young women and 16.3 years for young men. Differences in the timing of sexual initiation between young women and men are most apparent in early adolescence. This is also displayed graphically in the survival curves in Figure 1. A log-rank test for equality of survival functions (not shown) indicates that the curves of male and female respondents are statistically significantly different. However, the gap between the two curves decreases in magnitude throughout adolescence, becoming almost nonexistent by age 20.

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<sup>2</sup> We use person-years rather than person-months because although respondents were asked the exact month and year of first sexual intercourse, if respondents were not able to estimate the month and year, they were then asked by the interviewers to give their age at sexual initiation. A non-trivial number of respondents have information on age at first sex rather than month and year.

With regard to the key nativity measures of interest, Table 1 indicates that 5% of young women and men in the sample were born outside the U.S. Of these, about 75% of young women and 63% of young men were below the age of 10 when arriving in the U.S. Eleven percent of female and 12% of male respondents could be categorized as second generation, born in the U.S. to at least one parent who was foreign born. Figure 2 provides preliminary evidence that the timing of sexual debut differs by immigrant generation. Log-rank tests suggest that, overall, for both young women and men, these differences are statistically significant. First generation male and female respondents have the latest age at sexual initiation. For the young men, differences in the timing of first intercourse between second and third generation youth are minimal, while for the young women the second generation initiates sexual activity later than the third at most ages. The timing of sexual debut also appears to differ by age at immigration (Figure 3), with those arriving before age 10 initiating sexual activity earlier than those arriving between ages 10 and 16. However, these differences are statistically significant for only the young men (not shown).<sup>3</sup>

Finally, Table 1 presents preliminary descriptive statistics on family instability. Parental partnership instability is a common experience in the study sample, with 37% experiencing at least one change in the marital status of their primary caregiver (usually their mother) between birth and the first study wave. These changes include divorces, separations, widowings, and remarriages. The mean number of changes was 0.7 for female and male respondents, with nine percent experiencing three or more changes.

The full paper will include results from discrete-time logit models with a host of time-varying and time-invariant covariates. The measures of nativity will be expanded to include

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<sup>3</sup>We will shortly receive restricted access to indicators of the country/region of birth of respondents and their parents and grandparents. As such, ancestry is not yet included in the preliminary results.

place of origin. The family instability measures will be expanded to include parental separations and reunions, and measured for each year from birth to age at sexual debut or censoring.

### **References:**

- Adsera, Alicia and Marta Tienda. 2012. "Comparative Perspectives on International Migration and Child Wellbeing." *Annals of the American Academy of Political and Social Science*, 643: 6-15.
- Bosch, F.X., A. Lorincz, N. Munoz, C.J.L.M. Meijer, and K.V. Shah. 2002. "The Causal Relation between Human Papillomavirus and Cervical Cancer." *Journal of Clinical Pathology* 55: 2440-265.
- Beck, Audrey N., Miles Corak and Marta Tienda. 2012. "Age at Migration, Social Boundaries and the Adult Attainments of Child Migrants." *Annals of the American Academy of Political and Social Science*, 643: 134-159.
- Bleakley, Hoyt and Aimee Chin. 2010. "Age at Arrival, English Proficiency, and Social Assimilation among US Immigrants." *American Economic Journal: Applied Economics* 2:165.
- Brandon, Peter David. 2002. "The Living Arrangements of Children in Immigrant Families in the United States." *International Migration Review* 36(2): 416-436.
- Cho, Youngtae, W. Parker Frisbie, Robert A. Hummer, and Richard G. Rogers. 2004. "Nativity, Duration of Residence, and the Health of Hispanic Adults in the United States." *International Migration Review* 38(1): 184-211.
- Choi, Kate and Marta Tienda. 2011. "Amended Partner Preferences: Intermarriage and the Lifecycle Timing of Migration." Presented at the Annual meetings of the Population Association of America, Washington D.C., April.
- Elmelech, Yuval, Katie McCaskie, Mary Clare Lennon, and Hsien-Hen Lu. *Children of Immigrants: A Statistical Profile*. New York: Columbia University National Center for Children in Poverty.
- Goldberg, Rachel E. Forthcoming. "Family Instability and Early Initiation of Sexual Activity in Western Kenya." *Demography*.
- Gfroerer, Joseph and Lucilla Tan. 2003. "Substance Use among Foreign-Born Youths in the United States: Does the Length of Residence Matter?" *American Journal of Public Health* 93(11): 1892-95.
- Harris, Kathleen M., Krista M. Perreira, and Dohoon Lee. 2009. "Obesity in the Transition to Adulthood: Predictions Across Race/Ethnicity, Immigrant Generation, and Sex." *Archives of Pediatric and Adolescent Medicine* 163(11): 1022-28.
- Hummer, Robert A., Daniel A. Powers, Starling G. Pullum, Ginger L. Gossman, and W. Parker Frisbie. 2007. "Infant Mortality among the Mexican-Origin Population in the United States." *Demography* 44(3): 441-457.
- Kaestle, Christine E., Carolyn T. Halpern, William C. Miller, and Carol A. Ford. 2005. "Young Age at First Sexual Intercourse and Sexually Transmitted Infections in Adolescents and Young Adults." *American Journal of Epidemiology* 161(8): 774-780.



- Kimbrow, Rachel Tolbert. 2009. "Acculturation in Context: Gender, Age at Migration, Neighborhood Ethnicity, and Health Behaviors." *Social Science Quarterly* 90(5): 1145-66.
- Knudsen, Eric, James Heckman, Judy Cameron and Jack Shonkoff. 2006. "Economic, Neurobiological, and Behavioral Perspectives on Building America's Future Workforce." *Proceedings of the National Academy of Science* 103:10155-62.
- Landale, Nancy S., Kevin J.A. Thomas, and Jennifer Van Hook. 2011. "The Living Arrangements of Children of Immigrants." *The Future of Children* 21(1): 43-70.
- McDonald, Jill A., Jennifer Manlove, and Erum N. Ikramullah. 2009. "Immigration Measures and Reproductive Health among Hispanic Youth: Findings from the National Longitudinal Survey of Youth, 1997-2003." *Journal of Adolescent Health* 44: 14-24.
- Meier, Ann M. 2007. "Adolescent First Sex and Subsequent Mental Health." *American Journal of Sociology* 112(6): 1811-47.
- Oropesa, Ralph S. and Nancy S. Landale. 1997a. "Immigrant Legacies: Ethnicity, Generation, and Children's Familial and Economic Lives." *Social Science Quarterly* 78(2): 399-416.
- Oropesa, Ralph S. and Nancy S. Landale. 1997b. "In Search of the New Second Generation: Alternative Strategies for Identifying Second Generation Children and Understanding their Acquisition of English." *Sociological Perspectives* 40:429-55.
- Perreira, Krista M. and India J. Ornelas. 2011. "The Physical and Psychological Well-Being of Immigrant Children." *Future of Children* 21(1): 195-218.
- Pettifor, Audrey E., Ariane van der Straten, Megan S. Dunbar, Stephen C. Shiboski, and Nancy S. Padian. 2004. "Early Age at First Sex: A Risk Factor for HIV Infection among Women in Zimbabwe." *AIDS* 18:1435-42.
- Resnick, Michael D., Peter S. Bearman, Robert W. Blum, Karl E. Bauman, Kathleen M. Harris, Jo Jones, Joyce Tabor, Trish Beuhring, Renee E. Sieving, Marcia Shew, Majorie Ireland, Linda H. Bearinger, and Richard J. Udry. 1997. "Protecting Adolescents From Harm: Findings from the National Longitudinal Study on Adolescent Health." *Journal of the American Medical Association* 278: 823-32.
- Rumbaut, Rubén G. 2004. "Ages, Life Stages, and Generational Cohorts: Decomposing the Immigrant First and Second Generations in the United States1." *International Migration Review* 38:1160-205.
- Sandfordt, Theo G.M., Mark Or, Jennifer S. Hirsch, and John Santelli. 2008. "Long-Term Health Correlates of Timing of Sexual Debut: Results from a National US Study." *American Journal of Public Health* 98: 155-161.
- Spence, Naomi J. and Karin L. Brewster. 2010. "Adolescents' Sexual Initiation: The Interaction of Race/Ethnicity and Immigrant Status." *Population Research and Policy Review* 29: 339-362.
- Tienda, Marta and Ron Haskins. 2011. "Immigrant Children: Introducing the Issue." *The Future of Children* 21(1): 3-18.
- Van Hook, Jennifer and Jennifer E. Glick. 2007. "Immigration and Living Arrangements: Moving Beyond Economic Need Versus Acculturation." *Demography* 44(2): 225-249.
- van Roode, Thea, Nigel Dickson, Katrina Sharples, and Charlotte Paul. 2012. "Patterns of Sexual Partnering and Reproductive History: Associations with Timing of First Birth in a Birth Cohort." *Perspectives on Sexual and Reproductive Health* 44(1): 48-56.

**Table 1. Descriptive statistics for young women and men aged 12-16 in 1997  
(percentages unless otherwise noted)**

<b>Characteristic</b>	<b>Total</b>	<b>Female</b>	<b>Male</b>	<b>Sig.</b>
<i>Sexual behavior<sup>1</sup></i>				
First sex age 14 or below	22.11	18.50	25.5	***
First sex age 19 or below	86.42	86.45	86.39	
Mean age at first sex	16.52 (3.17)	16.72 (2.88)	16.32 (3.40)	***
<i>Nativity</i>				
Immigrant generation				
First generation	5.34	5.37	5.32	
Second generation	11.82	11.42	12.21	
Third generation plus	82.83	83.21	82.48	
Of first generation, timing of arrival in U.S.				
Arrival in U.S. < age 10	68.46	74.63	62.54	
Arrival in U.S. ages 10-16	31.54	25.37	37.46	*
<i>Family instability from birth through Wave 1 (1997)</i>				
Mean number of changes in primary caregiver's marital status	0.71	0.74	0.68	
Any change	36.89	38.65	35.23	*
Three or more changes	8.96	9.28	8.66	
<b>N individuals</b>	<b>8,984</b>	<b>4,373</b>	<b>4,611</b>	

Notes: Results are based on data weighted to adjust for sample design. Standard deviations are in parentheses below means.

† p<.1; \* p<.05; \*\* p<.01; \*\*\* p<.001 for differences between young women and men.

<sup>1</sup> These measures of sexual behavior include only individuals whose first sexual intercourse was observed in the study period (N=8,317). They do not include those who had not initiated sexual activity by wave 14 in 2010, or who dropped out of the study before reporting sexual activity, though these individuals do contribute person-years in the survival analyses.

Source: 1997 National Longitudinal Survey of Youth, 1997-2010

Figure 1. Kaplan-Meier survival estimates by gender

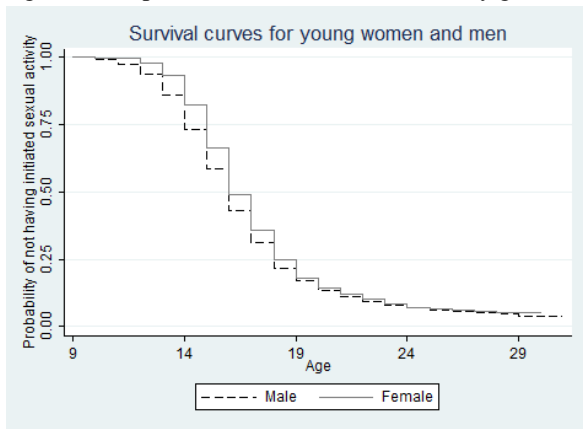


Figure 2. Kaplan-Meier survival estimates by immigrant generation

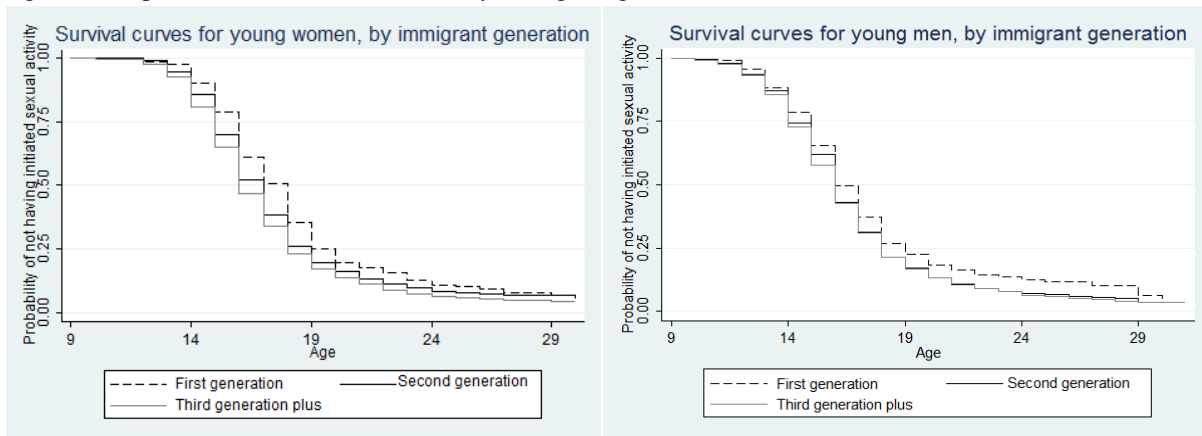


Figure 3. Kaplan-Meier survival estimates for first generation, by age at immigration

