

Neighborhood, Family and School Environments: Associations with the Timing of Adolescent First Sex

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A major focus of policy and research is on delaying the timing of first sex to help reduce high rates of adolescent pregnancy and STIs in the U.S. A wide range of approaches exist for delaying adolescent sexual initiation, and these approaches address the importance of a number of different social contexts and environments that shape adolescent sexual behavior. However, few studies examine the relative influence of varying adolescent environments on the timing of first sex, nor do they examine whether multiple environments interact with each other to influence sexual behavior. This study uses data from Rounds 1-8 of the National Longitudinal Survey of Youth (NLSY97) to examine whether and how different adolescent environments including neighborhood, family, school, and their surrounding physical environment are associated with an earlier timing of first sex. We also examine whether micro-level factors (e.g., family structure, parent involvement, parent background and education) are more or less protective against early sexual experience in more socioeconomically disadvantaged neighborhoods. Contextual data provide county-level indicators of neighborhood disadvantage (e.g., poverty, unemployment, single motherhood, educational attainment).

Conceptual Framework

We draw upon social disorganization and relative deprivation theories to examine the role of neighborhood disadvantage in predicting the timing of adolescent first sex and the interrelationships between neighborhood disadvantage and other family and school environments. Much of the framework for the modern concept of neighborhood disadvantage begins with social disorganization theory, which argues that neighborhood-level factors decrease the prevalence and strength of local social ties in disadvantaged neighborhoods and consequently decrease community-level social control of crime and other problem behaviors,⁴⁶ with some evidence that these factors are associated with risky adolescent sexual behaviors.^{3,5,7,8,10,11,29,33} Structural factors such as poverty, unemployment, education, and teen birth rates have been

found to reduce social ties within communities. These factors diminish the resources necessary to support basic institutions (such as family, churches, schools, and voluntary organizations) in neighborhoods, all of which foster networks of social connection.^{57,58} Additionally, Anderson (1990) suggests that in disadvantaged neighborhoods where traditional roads to success are blocked, “street” codes encouraging risky behaviors often develop.¹ However, risky adolescent sexual behaviors can be mitigated by collective efficacy,^{43,45} shared values and collective goals—including those focused on positive outcomes for local youth.^{10,11} Relative deprivation theory is used to demonstrate whether and how contextual disadvantage moderates the association between other adolescent environments and adolescent sexual behavior.⁴⁹ We focus specifically on whether the associations between family, school and physical environments and the timing of first sex (prior to age 18) vary by level of neighborhood disadvantage.

Research has identified the importance of neighborhoods,^{8-10,53} families,^{12,22,40,41} schools^{13,20,31,55} and other aspects of the physical environments^{4,5} for the timing of adolescent sexual debut and other characteristics of adolescent sexual relationships, although research on how these environments interact is more limited. This study will extend previous research by examining the influence of neighborhood disadvantage on the timing of first sex relative to a number of other micro and macro-level contexts including the family, school and adolescents’ physical environment. Based on relative deprivation theory, we also consider whether neighborhood disadvantage moderates the associations between each environment and the transition to sex during adolescence.

Prior Research

Neighborhood Disadvantage and the Timing of First Sex

Previous research suggests that a number of dimensions of neighborhood context and disadvantage are associated with adolescent sexual debut. For example, neighborhood

concentrated poverty,^{3,10,11,33} a lower proportion of college educated adults,⁹ a higher unemployment rate,⁵² and a higher teen non-marital birth rate⁹ have all been linked to earlier timing of first intercourse for adolescents. In an attempt to objectively study the cumulative effects of neighborhood level factors on individual behaviors, researchers often aggregate measures of disadvantage to assess whether there are increasing risks due to more concentrated disadvantage. For the purposes of the current study, we develop an index of neighborhood disadvantage, which combines multiple dimensions of neighborhood disadvantage into a single cumulative measure.

Family Environments and the Timing of First Sex

An expanding research literature has found that parental support and connectedness, including parental warmth, parent/child closeness, and child attachment to and regard for parents, can have a positive influence on adolescent reproductive health.³⁶ Strong parent-child relationships are associated with later adolescent sexual initiation,^{10,18,39,47} lower frequency of intercourse,^{17,23,42} and with fewer sexual partners^{14,16,19} among males and females.

Family structure has also been associated with adolescent sexual activity. Previous research suggests that teens that grow up in a household with two biological parents are more likely to initiate sex at an older age than teens that grow up in other family structures.^{21,30,41}

Parent background factors also affect the timing of first sex. Adolescents with more highly educated parents, those with higher religious attendance, and mothers with a later timing of first birth are all associated with delayed sexual activity.²⁶

Research suggests that the influence of family environments on the transition to sex during adolescence may vary by the level of neighborhood disadvantage. For example, Roche et al. (2005) found that greater parental involvement was related to a lower likelihood of sex initiation only when youth lived in socioeconomically advantaged neighborhoods.⁴¹ Parental rules that focused on the child's activities inside (e.g. watching T.V.) and outside of the home (e.g.

hanging out with peers) were associated with the lowest likelihood of sex initiation for adolescents in disadvantaged neighborhood but with the highest likelihood of sex initiation for youth in advantaged neighborhoods.⁴¹ When parents imposed *few* rules on adolescents' activities, the likelihood of sex initiation was about equally high regardless of neighborhood characteristics.⁴¹

Further, qualitative research from Anderson (1999) suggests that coming from a strong, tight knit, financially stable, "decent" family in a socioeconomically disadvantaged neighborhood can instill high aspirations in youth, serving as a "bastion" against street culture (often including early sexual activity, drug use, and other forms of delinquency), but that coming from a "decent" home does not necessarily guarantee that an adolescent will rise above the neighborhood and other street influences surrounding them.² Anderson (1999) argues that in order for "decent" youth to successfully navigate differing influences in the home and in the wider neighborhood and school environment, the ability to effectively code switch(adopting one set of behaviors for the street and different behaviors for the home) is absolutely critical.²

School and Physical Environments and the Timing of First Sex

Physical and school environments may also play a role in the timing of first sex among teens. Studies have found that adolescents are more likely to become sexually active at an early age when they live in neighborhoods characterized by violence,⁴ crime,⁵ and physical decay.⁵³ Gang involvement^{31,56} and having peers who use tobacco,³⁴ drink alcohol,^{6,24,28} and use drugs^{9,13} are also associated with an earlier initiation of sex among adolescents. However, greater participation in extracurricular activities such as music, drama, clubs, or schools sports,^{20,37} higher education aspirations,^{25,31,48} and volunteering²⁸ are all correlated with delayed initiation of sex.

Recent research suggests that the associations between individual-level educational aspirations and expectations may vary by level of neighborhood poverty. For example, Cubbin et al. (2010) found that among 15-17 year olds in high-poverty neighborhoods (>20%), girls with a higher desire or likelihood of going to college and boys with higher positive life expectations had an increased likelihood of sex initiation, while in neighborhoods with lower poverty the opposite was true.¹⁵ They hypothesize that this could be because young people living in high-poverty neighborhoods who had not initiated sex by the time they reached age 15-17 have already delayed sexual initiation compared with their sexually active peers of the same age (in other words, positive college aspirations or life expectations may have already acted as a protective factor against earlier onset of sexual initiation).¹⁵

Controls

We control for additional individual-level factors that we expect to be associated with adolescent sexual initiation. Prior research suggests that adolescents who are male,⁵² black,³³ born in the U.S.,⁵² older,^{33,52} more physically developed compared to their peers,¹⁸ and who have dated more frequently^{35,50} are more likely to initiate sex at an earlier age.

Data

Data for these analyses are derived from the National Longitudinal Survey of Youth, 1997 Cohort (NLSY97), Rounds 1 – 8 (1997 – 2004), along with the restricted-use geocode supplement which contains detailed information on the geographic residence of each NLSY97 respondent. The NLSY97, sponsored and directed by the Bureau of Labor Statistics, U.S. Department of Labor, is a nationally-representative sample of 8,984 youth aged 12 – 16 in 1997. These data provide valuable information on parent-youth relationships, youth sexual experiences and partners, family background factors, and sociodemographic characteristics. Youth were

initially interviewed in 1997, and we include annual follow-up data through 2004. County-level indicators based on census data are included in the geocode supplement file.

Sample

We restricted our sample to 4,790 sexually inexperienced youth ages 12-14 at baseline (Round 1) because of our interest in the transition to first sexual intercourse and because key measures of parent involvement were only available for younger adolescents. We then excluded respondents who did not report any valid information about sexual experience in Rounds 2 through 8 ($n=81$), who were missing information on two critical independent variables (mother-youth relationship and parental monitoring) ($n=94$), and those who were married at the time of their first sexual relationship ($n=27$), for a final sample of 4,588 respondents.

We structured our analysis file into person-years consisting of a separate observation for each year in which a respondent was in our sample and was at risk of having sex for the first time through age 18. Because the dependent variable of interest is first sexual experience, we included only years leading up to and including the year of first sexual intercourse. Respondents were censored in the year they had sex or in Round 8 if they did not report having sex. Respondents with missing data on sexual experience were censored in the round prior to the round with missing data. The final sample of 4,588 youth provided 16,916 person-years of information, from which we removed 383 person-years in which respondents did not participate in an interview, for a final sample of 16,533 person-years (8,207 among males and 8,326 among females).

Measures

Dependent variable

The dependent variable of interest is the transition to first sexual intercourse. For each round from 1997 to 2004, respondents were asked, “Have you ever had sexual intercourse, that is, made love, had sex, or gone all the way with a person of the opposite sex?” Within each person-year, respondents receive a value of 1 if they reported sexual experience and a value of 0 if they had not yet had sex. Respondents who were missing on sexual experience in a particular year were coded on sexual experience based on their reported month and year of first sexual intercourse from a subsequent round.

Independent variables

We include measures of neighborhood disadvantage, parent involvement, family structure, adolescent perceptions of their school and physical environments, and parent background. We use county-level measures of neighborhood disadvantage measured for the county in which the respondent lived in 1997¹ to create a standardized index of neighborhood disadvantage ($\alpha=0.8743$). This index consists of the logged (to minimize skewness) percent of families with income below the poverty level, the log of the civilian labor force unemployment rate, the square root (also to minimize skewness) of the percent of the population 25+ with less than four years of high school, and the square root of the percent of births to moms under 20. The neighborhood disadvantage index was recoded into a categorical measure of low, medium and high disadvantage by taking one standard-deviation above (for high disadvantage) and below (for low disadvantage) the mean.

Parent involvement measures include the respondents’ relationship quality with their residential parents, parental monitoring, and family routines all measured at Round 1. Parent-teen relationship quality is a three-item summative index (range: 0-12) capturing whether the teen thinks highly of or enjoys spending time with his or her residential mother and/or father, and

¹ Neighborhood disadvantage index items were taken from the 1997 NLSY geocode data which provides county-level data from 1989 and 1990.

whether his or her mother and/or father is a person he or she wants to be like. Parental monitoring and awareness measures how well the mother and/or father knows who their teen is with when they are not at home, ranging from 0 (parent knows nothing) to 4 (parent knows everything). The family routines index (range: 0-28) assesses the number of days per week in which the teen does the following with his or her family: eats dinner, does something fun, does something religious, and does household chores.

We include a four-category measure of family structure, comparing teens living with two biological or adoptive parents with those living with one biological and one other non-bio parent, a single biological parent, or any other family structure type.

We use four separate indices measured at Round 1 to capture the respondent's perception of the school and physical environments in which they live. Physical environment risk is a 5-item index of both youth and interviewer reports that capture the relative safety of the respondent's neighborhood and home life. Respondents are asked how often they hear gunshots in the average week, and if their home has electricity or heat when they need it. Interviewers report if the homes in the respondent's neighborhood are well kept, if the respondent's home is well kept, and if the interviewer felt concerned for their safety during the interview. Scores range from 0 to 7 where higher scores indicate higher risk. The enriching environment index is a 3-item index consisting of youth reports of whether they have a computer in their home, own a dictionary and if they spend any time taking additional classes or lessons (e.g., music, dance, language, etc.) in a typical week. Scores range from 0 to 3 where a higher score indicates a more enriching environment. Respondent reports of school environments in the NLSY97 are measured as the proportion of kids in the respondents' grade who engage in a specific behavior, with the following categories: 1) Almost none (less than 10%); 2) about 25%; 3) about half (50%); 4) about 75%; and 5) almost all (more than 90%). A positive school environment index consists of four items. Respondents received a point if 75% or more of kids in their grade attend church

regularly, 75% or more play sports, are in a club, or other school activity, 75% or more of kids in their grade have college aspirations, and at least 50% of kids in their grade volunteer. The negative school environment index is a 5-item scale is the respondent report if 25% or more of the kids in their grade smoke, get drunk often, do drugs, are in a gang, or skip classes.

Parent background measures are all taken from Round 1. Parent religious attendance ranges from 1 (never) to 7 (every day). Residential parents' highest level of educational attainment (range: 1-20 years) is used as a proxy for socioeconomic status. We also include a dichotomous measure of whether the respondent's mother was younger than age 20 at her first birth to indicate whether the respondents' mother was a teen mother.

To control for individual characteristics, we include time-invariant controls for race/ethnicity, whether the respondent was foreign-born (vs. native born), whether he or she had started puberty (based on menarche for females and if pubic or facial hair growth or voice cracking were "under way" or had occurred for males by Round 1), and the frequency with which the respondent dated in the last year (not at all, once a month, and more than once a month). We also include a time-varying control for the respondent's age.

Analytic Methods

We conduct t-test analyses to test for differences between our parent, family, school, and individual factors over neighborhoods with low, medium, and high disadvantage. Multivariate analyses include additive discrete-time logistic regression models for event-history analyses of the transition to first sexual experience for the full sample. The first model uses only parent involvement measures to predict the timing of first intercourse, the second adds family structure, the third adds adolescents' perceptions of their school and physical environments, the fourth adds parental background characteristics, and the fifth adds neighborhood disadvantage to determine if neighborhood context matters for the timing of first sex after accounting for other micro-level

factors. The final model adds individual controls. Additionally, we run separate models for respondents in low, medium, and high disadvantaged neighborhoods to examine whether the effects of parent involvement, family structure, school and physical environments, and parent background on the timing of first sex differ by level of neighborhood disadvantage.

Missing Data. There was less than 5% missing data for all of our independent variables. Missing data was plugged with the mean for continuous variables and with the mode for categorical variables. All analyses incorporate weights and were run in STATA 10. Multivariate results are presented in terms of odds ratios.

Results

Sample Characteristics

Table 1 presents means for the respondent-level sample separately for those in low, medium, and high disadvantaged neighborhoods. Approximately 69 percent of respondents in high-disadvantaged neighborhoods had any early sexual initiation (first sex at or prior to age 18) compared to 58 percent of those in low- and 61 percent in medium-disadvantaged neighborhoods.

Parent involvement varied slightly across levels of neighborhood disadvantage, with higher levels of parental monitoring in medium-disadvantaged neighborhoods (2.8 versus 2.7) and fewer family routines in low-disadvantaged neighborhoods compared with medium and high disadvantaged neighborhoods (14.7 compared to 15.3 and 15.5, respectively). A higher percentage of respondents in high disadvantaged neighborhoods lived in a single biological parent family or other family structure compared with respondents in either low- or medium-disadvantaged neighborhoods.

Respondents in high-disadvantaged neighborhoods scored highest on the physical environment risk index followed by those in medium- and then low-disadvantaged

neighborhoods (1.4 followed by 1.1 and 0.8, respectively). Similarly, individuals in high-disadvantaged neighborhoods lived in homes with the least opportunity for enrichment. Youth in high-disadvantaged neighborhoods had an average score of 1.7 versus an average of 1.9 in medium disadvantaged neighborhoods, and 2.0 in low disadvantaged neighborhoods.

In terms of family background, parents' highest education and whether the respondents' mother was a teen mother varied across neighborhoods in the expected direction with lower levels of education and higher percentages of mothers that were teen mothers as you move from low to medium to high disadvantaged neighborhoods. Of our individual-level controls, only gender varied across level of neighborhood disadvantage, with a higher percentage of males in medium disadvantaged neighborhoods (51.6%) compared with low (46.8%) and high (46.0%) disadvantaged neighborhoods.

Multivariate results

Table 2 presents findings from discrete-time logit models predicting the transition to sexual experience at or before age 18. Model 1 indicates that higher parent teen relationship quality, greater parental awareness and monitoring, and greater family routines lower the odds of sexual initiation. The results in Model 2 suggest that compared to respondents with two biological parents living in the home, those with a stepparent, single parent, or other family structure have higher odds of early sex. Higher scores on the physical environment risk index and negative school environment index also increase the odds of engaging in first sex at or before age 18 (see Model 3). Higher scores on the enriching environment scale reduce the odds of early sex. In terms of parent background characteristics, having parents who attend religious services reduces the odds of the transition to sex, whereas having a mother who was a teen mother increases the odds. Living in a high disadvantage neighborhood (when compared to low) increases the odds of having sex at or before age 18, although the addition of neighborhood disadvantage in Model 5 does not attenuate the effects of the parent, family, school environment

or physical environment factors. In Model 6, the addition of individual controls reduces the effects of parental monitoring, family routines, and residing in an “other” family form (compared to having 2 biological parents in the household) to nonsignificance. Being a racial/ethnic minority (black or Hispanic compared to white), being older, having an earlier onset of puberty, and early dating (compared with no dating at all) increase the odds of early sex, whereas foreign-born respondents had reduced odds of early intercourse.

Table 3 presents the results from the full model (Model 5) separately for adolescents in low, medium, and high disadvantaged neighborhood contexts.

Results from Table 3 indicate that within low disadvantaged communities (Model 1), family background and school influences play the largest role in the transition to first sex. When compared to youth in homes with two biological parents, those living with a stepparent have increased odds of early sex. Having a mother who was a teen parent, being black (compared to white), and being an older teen increases the odds of early sex. Both positive and negative school environments, as well as dating also increase the odds of early sex.

Among respondents in the medium disadvantaged category (Model 2), parental monitoring, an enriching environment, parents with greater religiosity and educational attainment, being male, and being foreign-born reduce the odds of transitioning to sex prior to age 18. Youth growing up in a stepfamily or in a single parent household (compared to those living with two biological parents), those with a negative school environment, those whose mother was a teen mother, older teens and those who were dating at baseline had higher odds of transitioning to sex before age 18.

Higher quality parent-youth relationships, an enriching environment, and parent religiosity lowered the odds of early first sex among respondents in high disadvantaged neighborhoods (Model 3). Residing in a stepfamily (compared to living with two biological

parents), having a negative school environment, being male, being an older teen, and early dating all increased the odds of initiating first intercourse prior to age 18.

Preliminary Conclusions

The results presented here suggest that a number of contexts matter for the timing of adolescent sex, including neighborhood, parent involvement and family structure, youth's perceptions of their school and physical environments, and parent background. Preliminary bivariate analyses also suggest that characteristics of youth's family, school and physical environments vary depending on the level of neighborhood disadvantage. For example, parental monitoring and awareness is actually higher among families in neighborhoods with medium-level disadvantage (compared to low disadvantaged neighborhoods), and family routines are the lowest in low disadvantaged neighborhoods. As expected, we also found that a higher percentage of respondents living in high disadvantaged neighborhoods lived in single parent family homes than youth in other neighborhoods, and had more negative perceptions of their physical environment.

Separate multivariate analyses by level of neighborhood disadvantage show that many risk and protective factors associated with the transition to sex operate in similar ways across all levels of neighborhood disadvantage, with a few exceptions. For example, parental monitoring is significantly associated with reduced odds of experiencing the transition to sex before age 18 for youth in medium disadvantaged neighborhoods, but parent-teen relationship quality is more protective for youth in high disadvantaged neighborhoods. Youth in single parent family households in medium disadvantaged neighborhoods only have increased odds of early transition to first sex. Higher scores on the physical risk index also increase the odds of teen sex, whereas more enrichment opportunities and educated parents represent protective factors against sexual

initiation within medium disadvantaged neighborhoods, but not within low or high disadvantaged neighborhoods.

Interestingly, for respondents in low disadvantaged neighborhoods, having a positive school environment may increase the odds of early sexual initiation. Finally, for youth in both low and medium disadvantaged neighborhoods, but not for those in high disadvantaged neighborhoods, having a teen mom raises the odds of early sexual initiation.

References

- ¹Anderson, E. (1990). *Streetwise: Race, class, and change in an urban community*. Chicago: University of Chicago Press.
- ²Anderson, E. (1999). *The code of the street: Decency, violence, and the moral life of the inner city*. New York: W.W. Norton and Company.
- ³Averett, S. L., Rees, D. I., & Argys, L. M. (2002). The impact of government policies and neighborhood characteristics on teenage sexual activity and contraceptive use. *American Journal of Public Health, 92*(11), 1773-1778.
- ⁴Berenson, A. B., Wiemann, C. M., & McCombs, S. (2001). Exposure to violence and associated health-risk behaviors among adolescent girls. *Archives of Pediatrics & Adolescent Medicine, 155*(11), 1238-1242.
- ⁵Billy, J. O. G., Brewster, K. L., & Grady, W. R. (1994). Contextual effects on the sexual behavior of adolescent women. *Journal of Marriage & the Family, 56*(2), 387-404.
- ⁶Blum, R. W., Beuhring, T., & Rinehart, P. M. (2000). *Protecting teens: Beyond race, income and family structure*. Minneapolis, MN: Center for Adolescent Health, University of Minnesota.
- ⁷Booth, R. E., & Zhang, Y. (1997). Conduct disorder and HIV risk behaviors among runaway and homeless adolescents. *Drug and Alcohol Dependence, 48*(2), 69-76.
- ⁸Brewster, K. L. (1994). Neighborhood context and the transition to sexual activity among young black women. *Demography, 31*(4), 603-614.
- ⁹Brewster, K. L., Billy, J. O., & Grady, W. R. (1993). Social context and adolescent behavior: The impact of community on the transition to sexual activity. *Social Forces, 71*(3), 713-740.
- ¹⁰Browning, C. R., Leventhal, T., & Brooks-Gunn, J. (2004). Neighborhood context and racial differences in early adolescent sexual activity. *Demography, 41*(4), 697-720.
- ¹¹Browning, C. R., Leventhal, T., & Brooks-Gunn, J. (2005). Sexual initiation in early adolescence: The nexus of parental and community control. *American Sociological Review, 70*(5), 757-778.

- ¹²Catalano, R. F., Berglund, L., Ryan, J. A. M., Lonczak, H. S., & Hawkins, J. D. (2002). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *Prevention and Treatment, 5*.
- ¹³Chewning, B., & Van Koningsveld, R. (1998). Predicting adolescents' initiation of intercourse and contraceptive use. *Journal of Applied Social Psychology, 28*(14), 1245-1285.
- ¹⁴Cleveland, H. H., & Gilson, M. (2004). The effects of neighborhood proportion of single-parent families and mother-adolescent relationships on adolescents' number of sexual partners. *Journal of Youth & Adolescence, 33*(4), 319-329.
- ¹⁵Cubbin, C., Brindis, C. D., Jain, S., Santelli, J., & Braveman, P. (2010). Neighborhood poverty, aspirations and expectations, and initiation of sex. *Journal of Adolescent Health, 47*(4), 399-406.
- ¹⁶Davis, E. C., & Friel, L. V. (2001). Adolescent sexuality: Disentangling the effects of family structure and family context. *Journal of Marriage and Family, 63*, 669-681.
- ¹⁷Dittus, P. J., & Jaccard, J. (1999). Direct and indirect communication of maternal beliefs to adolescents: Adolescent motivations for premarital sexual activity. *Journal of Applied Social Psychology, 29*(9), 1927-1963.
- ¹⁸Dittus, P. J., & Jaccard, J. (2000). Adolescents' perceptions of maternal disapproval of sex: Relationship to sexual outcomes. *Journal of Adolescent Health, 26*(4), 268-278.
- ¹⁹Fingerson, L. (2005). Do mothers' opinions matter in teens' sexual activity? *Journal of Family Issues, 26*, 947-974.
- ²⁰Halpern, C. T., Joyner, K., Udry, J. R., & Suchindran, C. (2000). Smart teens don't have sex (or kiss much either). *Journal of Adolescent Health, 26*(3), 213-225.
- ²¹Hogan, D. P., Sun, R., & Cornwell, G. T. (2000). Sexual and fertility behaviors of American females aged 15-19 years: 1985, 1990, and 1995. *American Journal of Public Health, 90*(9), 1421-1425.
- ²²Hope, T. L., & Chapple, C. L. (2004). Maternal Characteristics, parenting, and adolescent sexual behavior: The role of self-control. *Deviant Behavior*(26), 25-45.
- ²³Jaccard, J., & Dittus, P. J. (2000). Adolescent perceptions of maternal approval of birth control and sexual risk behavior. *American Journal of Public Health, 90*(9), 1426-1430.
- ²⁴Kinsman, S. B., Romer, D., Fustenberg, F. F., Jr., & Schwarz, D. F. (1998). Early sexual initiation: The role of peer norms. *Pediatrics, 102*(5), 1185-1192.
- ²⁵Kirby, D., Coyle, K., & Gould, J. B. (2001). Manifestations of poverty and birthrates among young teenagers in California zip code areas. *Family Planning Perspectives, 33*(2), 63-69.
- ²⁶Kirby, D., Lepore, G., & Ryan, J. (2005). *Sexual risk and protective factors: Factors affecting teen sexual behavior, pregnancy, childbearing, and sexually transmitted disease*. Washington, DC: The National Campaign to Prevent Teen Pregnancy.
- ²⁷Kohen, D. E., Leventhal, T., Dahinten, V. S., & McIntosh, C. N. (2008). Neighbourhood disadvantage: Pathways of effects for young children. *Child Development, 79*(1), 159-169.
- ²⁸Kowaleski-Jones, L., & Mott, F. L. (1998). Sex, contraception and childbearing among high-risk youth: do different factors influence males and females? *Family Planning Perspectives, 30*(4), 163-169.

- ²⁹ Ku, L., Sonenstein, F. L., & Pleck, J. H. (1993). Neighborhood, family, and work: Influences on the premarital behaviors of adolescent males. *Social Forces*, 72(2), 479-503.
- ³⁰ Lammers, C., Ireland, M., Resnick, M., & Blum, R. (2000). Influences on adolescents' decision to postpone onset of sexual intercourse: a survival analysis of virginity among youths aged 13 to 18 years. *Journal of Adolescent Health*, 26(1), 42-48.
- ³¹ Lanctot, N., & Smith, C. A. (2001). Sexual activity, pregnancy, and deviance in a representative urban sample of African American girls. *Journal of Youth & Adolescence*, 30(3), 349-372.
- ³² Leventhal, T., & Brooks-Gunn, J. (2000). The neighborhoods they live in: The effects of neighborhood residence on child and adolescent outcomes. *Psychological Bulletin*, 126(2), 309-337.
- ³³ Longmore, M. A., Eng, A. L., Giordano, P. C., & Manning, W. D. (2009). Parenting and adolescents' sexual initiation. *Journal of Marriage and Family*, 71(969-982).
- ³⁴ Mandara, J., Murray, C. B., & Bangi, A. K. (2003). Predictors of African American adolescent sexual activity: An ecological framework. *Journal of Black Psychology*, 29(3), 337-356.
- ³⁵ Miller, B., Norton, M. C., Curtis, T., Hill, E. J., Schvaneveldt, P., & Young, M. H. (1997). The timing of sexual intercourse among adolescents: Family, peer, and other antecedents. *Youth & Society*, 29(1), 54-83.
- ³⁶ Miller, B. C. (1998). *Families matter: A research synthesis of family influences on adolescent pregnancy*. Washington, DC: The National Campaign to Prevent Teenage Pregnancy.
- ³⁷ Miller, K. E., Sabo, D. F., Farrell, M. P., Barnes, G. M., & Melnick, M. J. (1998). Athletic participation and sexual behavior in adolescents: The different worlds of boys and girls. *Journal of Health & Social Behavior*, 39(2), 108-123.
- ³⁸ Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, 24, 1-24.
- ³⁹ Ream, G. L., & SavinWilliams, R. C. (2005). Reciprocal associations between adolescent sexual activity and quality of youth-parent interactions. *Journal of Family Psychology*, 19, 171-179.
- ⁴⁰ Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., et al. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study on Adolescent Health. *JAMA: Journal of the American Medical Association*, 278(10), 823-832.
- ⁴¹ Roche, K. M., Mekos, D., Alexander, C. S., Astone, N. M., Bandeen-Roche, K., & Ensminger, M. E. (2005). Parenting influences on early sex initiation among adolescents: How neighborhood matters. *Journal of Family Issues*(26), 32.
- ⁴² Sabo, D. F., Miller, K. E., Farrel, M. P., Melnick, M. J., & Barnes, G. M. (1999). High school athletic participation, sexual behavior and adolescent pregnancy: A regional stud. *Journal of Adolescent Health*, 25(3), 207-216.
- ⁴³ Sampson, R., Raudenbush, S., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, 277, 918-924.
- ⁴⁴ Sampson, R. J. (1997). Collective regulation of adolescent misbehavior: validation results from Chicago neighborhoods. *Journal of Adolescent Research*, 12(2), 227-244.

- ⁴⁵ Sampson, R. J., & Raudenbush, S. W. (1999). Systematic social observation of public spaces: a new look at disorder in urban neighborhoods. *American Journal of Sociology*, 105(3), 603-651.
- ⁴⁶ Shaw, C. R., & McKay, H. D. (1969). *Juvenile delinquency and urban areas*. Chicago The University of Chicago Press.
- ⁴⁷ Sieving, R., McNeely, C., & Blum, R. (2000). Maternal expectations, mother-child connectedness, and adolescent sexual debut. *Archives of Pediatrics & Adolescent Medicine*, 154, 809-816.
- ⁴⁸ Smith, C. A. (1997). Factors associated with early sexual activity among urban adolescents. *Social Work*, 42(4), 334-346.
- ⁴⁹ Spriggs, A. L., Halpern, C. T., Herring, A. H., & Schoenbach, V. J. (2009). Family and school socioeconomic disadvantage: Interactive influences on adolescent dating violence victimization. *Social Science & Medicine*, 68, 1956-1965.
- ⁵⁰ Stack, S. (1994). The effect of geographic mobility on premarital sex. *Journal of Marriage and Family*, 56(1), 204-208.
- ⁵¹ Teitler, J., & Weiss, C. C. (2000). Effects of neighborhood and school environments on transitions to first sexual intercourse. *Sociology of Education*, 73, 112-132.
- ⁵² Upchurch, D. M., Mason, W. M., Kusunoki, Y., & Johnson Kriechbaum, M. (2004). Social and behavioral determinants of self-reported STD among adolescents. *Perspectives on Sexual and Reproductive Health*, 36(6), 276-287.
- ⁵³ Upchurch, D. M., Sucoff, C., & Levi-Storms, L. (1999). Neighborhood and family context of adolescent sexual activity. *Journal of Marriage & the Family*, 61(4), 920-933.
- ⁵⁴ Vesely, S., Wyatt, V., Oman, R., Aspy, C., Kegler, M., Rodine, S., et al. (2004). The potential protective effects of youth assets from adolescent sexual risk behaviors. *Journal of Adolescent Health*, 34(5), 356-365.
- ⁵⁵ Voisin, D. R., & Neilands, T. B. (2010). Low school engagement and sexual behaviors among African American youth: Examining the influences of gender, peer norms, and gang involvement *Children and Youth Services Review*, 32(1), 51-57.
- ⁵⁶ Voisin, D. R., Salazar, L. F., Crosby, R., DiClemente, R., Yarber, W. L., & Staples-Horne, M. (2004). The association between gang involvement and sexual behaviors among detained adolescent males. *Sexually Transmitted Infections*, 80(6), 440-442.
- ⁵⁷ Wilson, W. J. (1987). *The truly disadvantaged: The inner city, the underclass, and public policy*. Chicago: University of Chicago Press.
- ⁵⁸ Wilson, W. J. (1996). *When work disappears: The world of the new urban poor*. New York: Knopf.

Table 1: Sample Characteristics

	Low	Medium	High	
	(n=728)	(n=3148)	(n=712)	
	Mean/%	Mean/%	Mean/%	
<u>Timing of First Sex Outcome</u>				
Sex at or before age 18	58.2%	61.4%	68.8%	b,c
<u>Parent Involvement</u>				
Parent-teen relationship quality	9.10 (2.12)	9.08 (2.31)	9.04 (2.67)	a
Parental monitoring and awareness	2.71 (1.01)	2.80 (1.07)	2.86 (1.28)	a,b
Family routines	14.73 (4.53)	15.28 (5.12)	15.51 (6.16)	b,c
<u>Family Structure</u>				
Family Structure				b,c
2 bio parents	60.3%	58.6%	51.7%	
1 bio parent, 1 non-bio parent	11.2%	14.9%	13.2%	
Single bio parent	26.5%	23.7%	30.5%	
Other family structure	2.0%	2.8%	4.6%	
<u>Neighborhood Perspective</u>				
Physical environment risk index	0.80 (.90)	1.09 (1.19)	1.42 (1.53)	a,b,c
Enriching environment index	2.02 (.65)	1.86 (.75)	1.66 (.88)	a,b,c
Positive school environment	1.94 (1.03)	1.87 (1.14)	1.88 (1.32)	
Negative school environment	2.17 (1.59)	2.22 (1.70)	2.21 (1.92)	
<u>Parent Background</u>				
Parent religious attendance	4.20 (1.89)	4.33 (2.03)	4.47 (2.27)	a,b,c
Resident parents' highest education status	14.64 (2.77)	13.65 (2.82)	12.72 (2.89)	a,b,c
Respondent's mom was a teen mom	12.7%	20.6%	27.3%	a,b,c
<u>Controls</u>				
Male	46.8%	51.6%	46.0%	a,c
Race/Ethnicity				
White	77.2%	74.0%	53.8%	
Black	10.1%	12.3%	30.6%	
Hispanic	10.8%	12.6%	14.7%	
Other	1.8%	1.1%	1.0%	
Foreign-born	10.7%	8.5%	6.9%	
Age at baseline interview	13.32 (0.89)	13.29 (0.95)	13.30 (1.09)	
Puberty	73.8%	74.4%	73.0%	
Dating frequency at baseline				
Never	57.6%	67.7%	70.0%	
Up to 1/month	30.8%	22.7%	23.0%	
>1/month	11.7%	9.6%	6.9%	

^alow is significantly different from medium at $p < 0.05$

^blow is significantly different from high at $p < 0.05$

^cmedium is significantly different from high at $p < 0.05$

Table 2: Weighted Odds Ratios from Logistic Regression Predicting First Sexual Experience at or before Age 18 (n=13,500)

	m1	m2	m3	m4	m5	m6
<u>Parent Involvement</u>						
Parent-teen relationship quality	0.96***	0.97***	0.98*	0.98*	0.98*	0.98
Parental monitoring	0.88***	0.87***	0.91***	0.91***	0.91***	0.93**
Family routines	0.98***	0.98***	0.99***	0.99*	0.99*	0.99
<u>Family Structure</u> (ref: 2 bio parents)						
1 bio parent, 1 non-bio parent		1.58***	1.47***	1.38***	1.38***	1.43***
Single bio parent		1.61***	1.39***	1.34***	1.33***	1.32***
Other family structure		1.65***	1.41***	1.40**	1.39**	1.33*
<u>Neighborhood Perspective</u>						
Physical risk index			1.09***	1.06**	1.06**	1.08***
Enrichment index			0.90***	0.93**	0.93*	0.91**
Positive school environment			0.99	1.00	1.00	0.99
Negative school environment			1.16***	1.16***	1.16***	1.08***
<u>Parent Background</u>						
Parent religious attendance				0.94***	0.94***	0.93***
Resident parents' highest education Status				0.99	0.99	0.97**
Respondent's mom was a teen mom				1.23***	1.23***	1.23**
<u>Neighborhood Disadvantage</u> (ref: Low)						
Med					1.05	1.13
High					1.26**	1.29**
<u>Controls</u>						
Male						0.93
Race (ref: White)						
Black						1.45***
Hispanic						1.09
Other						1.16
Foreign-born						0.74***
Age at baseline interview						1.35***
Puberty						1.12
Frequency of Dating (ref: none)						
Up to 1/month						2.11***
>1/month						3.05***
Wald	44.63***	40.95***	36.89***	38.63***	34.77***	62.79***
Df	3	6	10	13	15	24

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

Table 3: Weighted Odds Ratios from Logistic Regression Analysis Predicting First Sexual Experience at or before Age 18 for Low, Medium, and High Disadvantaged Neighborhoods

	Model 1 LOW (n=2211)	Model 2 MED (n=9297)	Model 3 HIGH (n=1992)
<u>Parent Involvement</u>			
Parent-teen relationship quality	1.00	0.99	0.94*
Parental monitoring	0.94	0.93*	0.90
Family routines	0.98	0.99	1.00
<u>Family Structure (ref: 2 bio parents)</u>			
1 bio parent, 1 non-bio parent	1.62**	1.40***	1.42**
Single bio parent	1.25	1.39***	1.14
Other family structure	1.31	1.22	1.74
<u>Neighborhood Perspective</u>			
Physical risk index	1.02	1.10***	1.03
Enrichment index	1.01	0.89**	0.89
Positive school environment	1.13*	0.95	0.99
Negative school environment	1.14***	1.07***	1.09*
<u>Parent Background</u>			
Parent religious attendance	0.94*	0.93***	0.91***
Resident parents' highest education status	0.98	0.97*	0.95
Respondent's mom was a teen mom	1.63**	1.19*	1.13
<u>Controls</u>			
Male	0.90	0.89*	1.27**
Race (ref: White)			
Black	1.62**	1.43***	1.30
Hispanic	1.67*	0.99	0.95
Other	0.85	1.33	1.20
Foreign-born	0.75	0.79*	0.53
Age at baseline interview	1.38***	1.37***	1.30***
Puberty	1.13	1.15	0.91
Frequency of Dating (ref: none)			
Up to 1/month	1.83***	2.23***	2.04***
>1/month	3.68***	3.19***	1.83*

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