

# Neighborhood Effect on Adolescent Sexual Behavior

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# Significance of the Issue

- Much **higher** teen pregnancy, teen births, abortion, and sexually transmitted infection (STI) **rates in US** than other developed countries
  - Teenage childbearing → lifelong consequences on adolescents' wellbeing
  - STI → serious reproductive health outcomes
- **High likelihood of unprotected sex** among adolescents
- **Racial/ethnic variation** in sexual behavior: high levels of and increase in lifetime sexual intercourse among African American and Latino American adolescents between 2001 and 2005

# Sources of Variation

## Individual level factors

- Biological & developmental characteristics
- Relationship with parents, peers, & partners
- Values, beliefs, attitudes, sense of control over life
- Educational aspiration
- Receipt of sexual education
- Access to reproductive health services

# Sources of Variation

## Family level factors

- Family structure
- Socioeconomic status (SES)
- Parental authority & control
- Parental time & supervision

# Sources of Variation

## Social contextual level factors

- Social inequality
- Societal attitudes to sexuality
- Policies and programs (sex education, governmental programs)
- School contexts: programs, connectedness
- Neighborhood contexts

# Neighborhood Effect

## Potential mechanisms

- **Institutional resources:** educational, recreational, social activities, childcare, medical facilities
- **Collective efficacy:** formal/informal control & regulation (monitoring & supervision)
- **Normative environment:** social norms, role models
- **Labor market opportunities:** affects adolescents' expectations regarding future employment opportunities

# Neighborhood Effect

## Measures

- Institutional resources: SES, services, facilities
- Collective efficacy: residential stability, ethnic diversity, social cohesion, % married households
- Normative environment: education level, occupation, teen fertility, female family headship
- Labor market opportunities: employment rate

# Census Indicators

- Important Census indicators
  - SES: most consistent, but indicators vary by outcome
  - Residential stability
  - Ethnic diversity
- Beneficial effect of affluence on academic outcomes
- Harmful effect of low quality environments on behavior problems
- SES, residential stability, & employment associated with teen sexuality and fertility



# Research Findings

## Association with adolescent sexuality outcomes

- Poverty (+), affluence (-)
- Unemployment rate (+)
- Percent managerial/professional workers (-)
- Female participation in labor force (+/-)
- Percent foreign-born residents (-)
- Percent married households (-)
- Percent idle youth (+)
- Variation by race/ethnicity and gender
  - More benefits of high SES for white youth
  - Boys more susceptible to environment

# Significance of the Study

- Estimate neighborhood effects net of individual and family differences including after-school supervision, children's educational aspiration, family structure & SES
- Test various neighborhood structural indicators from the Census
- Use multilevel modeling to account for interdependence of observations within clusters and to examine cross-level interactions

# Specific Aims

- Identify which neighborhood characteristics are associated with adolescent sexual behavior, controlling for individual and family characteristics
- Examine if neighborhood effects differ for gender and racial/ethnic groups (cross-level interaction)

# Hypotheses

- The likelihood of ever having had sex among children and adolescents is greater in lower SES neighborhoods than in higher SES neighborhoods, controlling for individual and family characteristics.
- The neighborhood effects are stronger for boys than girls.
- The protective effect of more affluent neighborhood is stronger for Whites than racial/ethnic minorities.

# Data Sources

## Wave I 2000-2001 Los Angeles Family and Neighborhood Survey (L.A. FANS) data

- A longitudinal study of a representative sample of Los Angeles County individuals
- Information on social background, household socioeconomic status, family life, neighborhood life, health status, etc.
- Multi-stage sampling design
  - 65 census tracts from 3 poverty strata (non-poor, poor, very poor)
  - Blocks sampled & dwelling units listed
  - Households sampled (40 to 50 households per tract interviewed)

## Data Sources (cont'd)

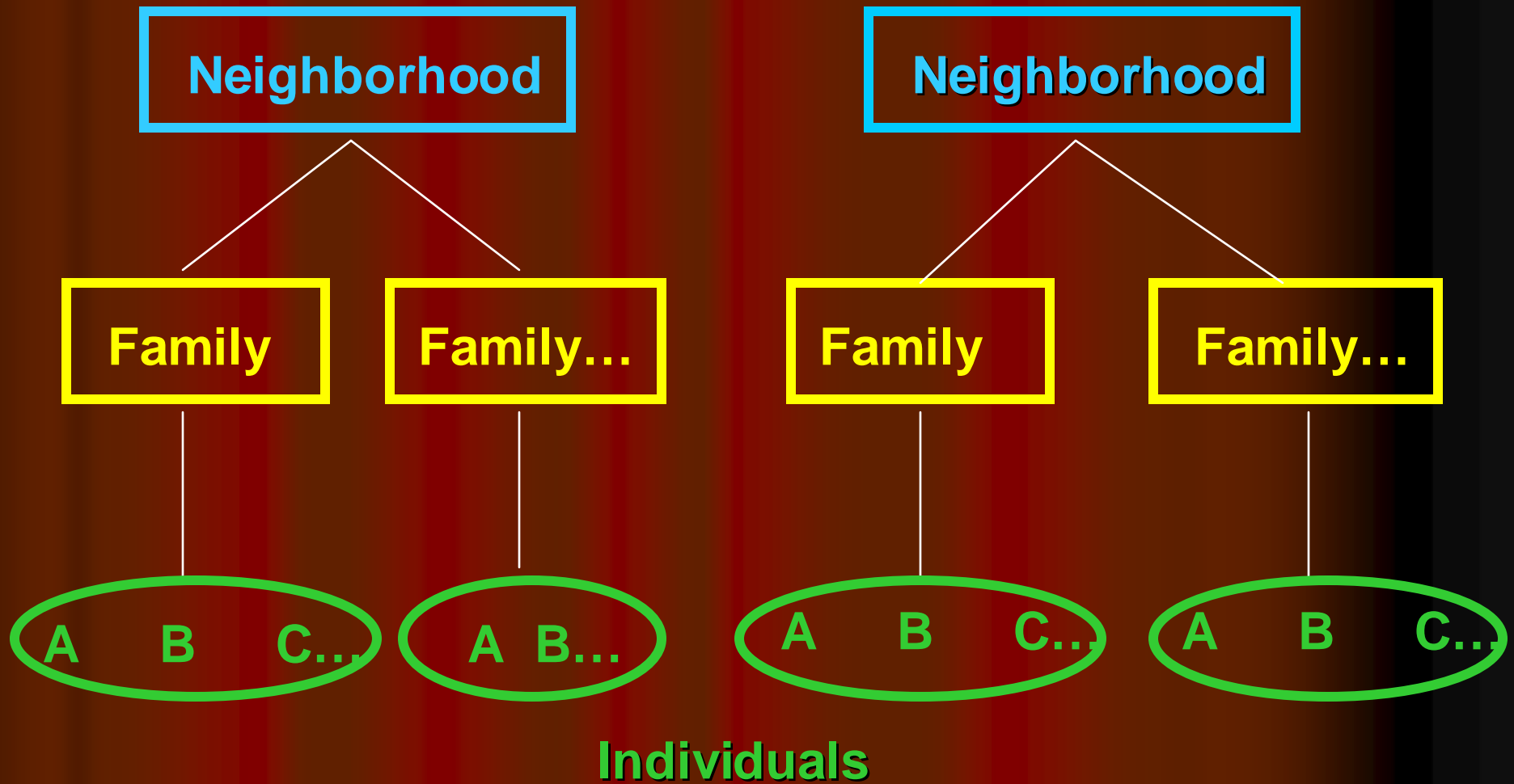
- In households with children, one child (age < 18) chosen at random → a sibling selected at random
- Sampled children age 9 or older interviewed about school, behavior, and family relations
- Children aged 12-17 answered a full set of behavioral questions including sexual behavior
- Additional information about a child provided by the child's primary care giver

## Data Sources (cont'd)

Neighborhood-level information from the Los Angeles Neighborhood Services and Characteristics (NSC) database

- Data from the 2000 Census Summary File 3 (SF-3), factor scores, composite scores derived from the SF-3 measures
- Includes SES, residential mobility, ethnic composition, racial/ethnic diversity, & family structure
- Linked to individuals and families of the L.A.FANS data

# Data Structure





# Variables

- Outcome variable: ever having had sex (binary)
- Neighborhood predictor variables
  - **SES**: median family income, high status factor, concentrated affluence factor
  - **Ethnic composition**: racial/ethnic diversity score, % White, % African American, % Latino
  - **Family structure**: % female headed household
  - **Residential stability**: residential stability factor

# Variables (cont'd)

## Control variables

- Family characteristics
  - Family structure: two-parent family
  - Parent education level: mother's years of schooling
- Individual characteristics
  - Age
  - Gender
  - Race/ethnicity: White, African American, Latino (1<sup>st</sup> & 2<sup>nd</sup> generation and 3<sup>rd</sup>+ generation)
  - Child's educational aspiration
  - After-school care: adult supervision

# Analysis

## Bivariate Analysis

Correlation, ANOVA, chi-square test, and simple logistic regression to examine the associations between ever having had sex and predictor and control variables

## Multivariate Analysis

Two-level hierarchical logistic regression accounting for clustering of individuals in neighborhoods (no use of family as a level due to a low level of clustering by family: 773 individuals in 652 families)

# Individual Characteristics (n=773)

Characteristic		Mean (SD) or %
Age (years)		12.7 (2.6)
Gender	Male	51%
	Female	49%
Race/ethnicity	White	26.3%
	African American	12.1%
	Latino	
	1 <sup>st</sup> generation	14.4%
	2 <sup>nd</sup> generation	39.5%
	3 <sup>rd</sup> + generation	12.5%
Adult supervision		55.3%

# Family Characteristics (n=652)

Characteristic	Mean (SD) or %
Two-parent family	59.4%
Mother's years of schooling (yrs)	11.2 (4.5)

# Neighborhood Characteristics (n=65)

Characteristic	Mean (SD)
Median family income (\$)	43,735 (26,235)
% non-Hispanic white	23.5 (24.8)
% African American	10.0 (10.9)
% Latino	51.4 (27.0)
% female-headed household	10.8 (5.3)

# Distribution by individual & family characteristics

Characteristic		Ever having sex
Race/ethnicity†	White	11.3%
	African American	25.3%
	3 <sup>rd</sup> + generation Latino	21.1%
	1 <sup>st</sup> /2 <sup>nd</sup> generation Latino	14.7%
Supervised†	Yes	14.3%
	No	26.0%
Family structure‡	Two parents	9.8%
	Single parent	23.1%
Total		15.4%

† Significant ( $p < 0.01$ ) based on a Chi square test of equal distribution

‡ Significant ( $p < 0.001$ ) based on a Chi square test of equal distribution

# Results of two-level simple logistic regression\*

Neighborhood Characteristic	Odds Ratio of Having Had Sex
Median family income	0.89†
High status factor	0.73‡
Concentrated affluence factor	0.76†
% non-Hispanic white	0.27‡
% African American	4.34†
% Latino	2.60‡
% female-headed household (std)	1.30‡
Racial/ethnic diversity score	1.00
Residential stability factor	0.90

\* Adjusted for clustering of individuals in neighborhoods

†  $p < 0.05$ ; ‡  $p < 0.01$



## Results of two-level multivariate logistic regression\*

Neighborhood Characteristic	Odds Ratio of Having Had Sex
% non-Hispanic white	0.20†
% Latino	3.46
High status factor	0.72
Concentrated affluence factor	0.77
% female-headed household (std)	1.21

\* Controlling for individual's age, gender, race/ethnicity, supervision, educational aspiration, and family structure and SES, and accounting for clustering of individuals in neighborhoods

†  $p < 0.01$

# Key Findings

- Neighborhood effect hypothesis supported: percent White most consistent
- Racial/ethnic differences canceled out when neighborhood factors accounted for
- Inter-level interaction: neighborhood effects for boys only
  - Percent White:  $OR=0.099$  ( $p<.01$ )
  - Concentrated affluence:  $OR=0.58$  ( $p<.05$ )
  - Percent female-headed household:  $OR=1.41$  ( $p<.05$ )
- No race/ethnicity-neighborhood interaction