Neighborhood effects on sexual and reproductive health: A review of the literature

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Background
Recent epidemiological studies have demonstrated the importance of neighborhood environment to a variety of individual health risks and outcomes. The increasing use of multilevel statistical models recognizes the existence of heterogeneity within and between communities and makes use of natural community-level clustering to explain variation in health outcomes. Ultimately such research would inform novel and innovative multilevel interventions to improve sexual and reproductive health.

Methods
We reviewed the literature on neighborhood effects on sexual and reproductive health to inventory specific research questions pursued, methodologies used, and current research findings.

- Searches in PubMed and POPLINE with keywords (“sexual behavior,” “contraception,” “family planning,” “unwanted pregnancy,” “unintended pregnancy,” “fertility,” OR “intimate partner violence”) AND (“neighborhood,” “contextual,” “multilevel,” or “community”)
- All studies are quantitative, US or International, in English language, and published between January 1985 and February 2011
- Excluded articles that examined sexual and reproductive health outcomes only as mediators, school-based studies, qualitative studies, maternal and child health, MSM, and HIV-related outcomes

Results
Our search yielded 36 studies that matched our inclusion criteria.

Sexual and reproductive health outcomes
All studies sought to examine whether community or environmental conditions affected the sexual and reproductive health outcomes of interest. We classified articles into these outcome categories:

- Contraceptive/condom use or knowledge of intentions
- Sexual risk behavior and age at first sex
- Risk of STIs
- Unintended, unwanted, or non-marital pregnancy or birth
- Preferred family size
- Intimate partner violence

Analytical techniques
Some of those that didn’t use a multilevel model had insufficient data on neighborhood constructs, methodology, and indices. Models used included random intercept multilevel models, GEE and structural equations models. Those that used random intercept multilevel models with poisson distribution (number and % of studies)

Neighborhood constructs (see Figure 2)

- Grouped common neighborhood characteristics into 8 larger constructs
- Classified each analysis by key outcomes and neighborhood constructs
- Identified 93 unique analyses across 8 constructs and 6 outcomes

Neighborhood effects on sexual and reproductive health:

- Sexual experience prevalence
- Median age at marriage
- Fertility level
- Prevalence of multiple partnering
- HIV prevalence
- Presence of regulations, laws or policies
- Collective efficacy
- Social control
- Social cohesion
- Crime or violence
- Report of seeing violence
- Prevalence of violence experience

Service availability
- Access to adolescent health/primary care
- Access to adolescent health/primary care
- Access to family planning
- Access to family planning
- Access to IPV

Neighborhood and community effects
- 64% of the analyses found a significant direct effect of a neighborhood construct on a sexual or reproductive health outcome.
- Structural disadvantage/social disorganization (63%), socioeconomic status/economic disadvantage (65%), and service availability (74%) were the most commonly reported significant associations.

Discussion
General methodological limitations
- Lack of consistency of neighborhood level measures, composites and indices
- Ambiguous theoretical rationale for individual measures versus constructs
- Measure selection driven by data availability
- Internal and or external consistency
- Temporality of exposure to neighborhood conditions and outcome measures
- Residence and time of exposure often unclear

Associations between neighborhood level conditions and individual sexual and reproductive health outcomes remain inconclusive due to lack of appropriate data and methodological technique. Further research designed to collect multilevel data should examine the complex interactions of neighborhood contextual factors and individual sexual behavior. Such multilevel analyses will improve our understanding of unintended pregnancy, IPV, and sexual health and inform new, innovative multilevel interventions

See handout for references.