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Coercive Sexual Environments: Exploring the Linkages to Mental Health in Public Housing

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Abstract

Previous qualitative research from the U.S. Department of Housing and Urban Development's Moving to Opportunity for Fair Housing demonstration program suggested the positive effects on girls, and not boys, of moving out of poor neighborhoods may be related to girls' reduced exposure to coercive sexual environments (CSEs). In this article, we use a new measure of CSE. Our aim is to test the hypothesis that living in a CSE is associated with poor mental health outcomes, especially for young women. Data for this study are from a survey of 124 adult and 79 youth respondents living in public housing in Washington, D.C. We found significant associations between perceptions of CSE among adults and exposure to CSE among youth with poor mental health. These results establish that the CSE appears to have an independent effect on mental health as the qualitative findings suggested. They point toward community-level interventions that aim to reduce the CSE in public housing and other poor communities.

Introduction

A large number of observational studies have established an association between residing in neighborhoods of concentrated disadvantage and negative physical and mental health outcomes for children and youth (Brooks-Gunn and Duncan, 1997; Ellen and Turner, 1997; Leventhal and Brooks-Gunn, 2004; Popkin and McDaniel, 2013; Sampson, 2012; Sampson, Morenoff, and Gannon-Rowley, 2002; Sampson, Sharkey, and Raudenbush, 2008; Wodtke, Harding, and Elwert, 2011). Moreover, experimental evidence from the U.S. Department of Housing and Urban Development's (HUD's) Moving to Opportunity for Fair Housing (MTO) demonstration program indicates that moving out of high-poverty neighborhoods may be especially helpful for the well-being of young women (Ludwig et al., 2011). One possible reason for this indication is that, in some neighborhoods, concentrated disadvantage and chronic violence may lead to the emergence of a coercive sexual environment (CSE) that results in chronic fear of sexual harassment and sexual violence (Briggs, Popkin and Goering, 2010; Popkin, Acs, and Smith, 2010; Popkin et al., 2015; Popkin, Leventhal, and Weismann, 2010; Smith et al., 2014). If living in a community with a high level of CSE has negative effects on young women's mental health, this phenomenon may explain why moving away from severely disadvantaged neighborhoods has positive effects for girls but not boys.

Concentrated poverty and disadvantage pose well-established risk factors to youth: developmental and cognitive delays; poor physical and mental health; and the likelihood of dropping out of school, engaging in risky sexual behavior, and becoming involved in delinquent and criminal activities (Brooks-Gunn and Duncan, 1997; Ellen and Turner, 1997; Leventhal and Brooks-Gunn, 2004; Sampson, 2012; Sampson, Morenoff, and Gannon-Rowley, 2002; Sampson, Sharkey, and Raudenbush, 2008; Wodtke, Harding, and Elwert, 2011). Neighborhoods mired in chronic disadvantage suffer a range of social ills, including high rates of violent crime, social disorder, and domestic violence (Kawachi, Kennedy, and Wilkinson, 1999; Sampson, Raudenbush, and Earls, 1997). In these disadvantaged communities, violence is pervasive, both within and outside the home (Fox and Benson, 2006; Hannon, 2005). The chronic violence both stems from and helps to perpetuate low levels of collective efficacy; that is, "social cohesion among neighbors combined with their willingness to intervene on behalf of the common good" (Sampson, Raudenbush, and Earls, 1997: 918). Research has shown collective efficacy can reduce both intimate homicide rates and nonlethal partner violence (Browning, 2002).

We have theorized that when disadvantage and violence are great and collective efficacy is low, a gender-specific neighborhood mechanism can emerge that has differential effects on male and female youth (Smith et al., 2014). To be specific, some communities develop what we have termed a *coercive sexual environment*, or CSE, wherein threats of sexual harassment, sexual exploitation, and sexual violence of women and girls, even those very young, are part of everyday life (Popkin, Acs, and Smith, 2010; Popkin, Leventhal, and Weismann, 2010; Popkin and McDaniel, 2013). For girls in the inner city, experience with early and coerced sex can combine with structural deprivations to promote a life trajectory marked by school dropout, early motherhood, little or no connection to the labor market, and unstable family formation (Dunlap, Golub, and Johnson, 2004).

Previous research supports the idea that girls and boys experience the effects of chronic disadvantage in very different ways, especially as they enter adolescence. In the 1990s, Anderson argued that young men in inner-city neighborhoods felt pressured to act tough to maintain respect, following the “code of the street,” and girls gained status and respect through getting pregnant (Anderson, 1999). In a more recent example, one study of African-American youth growing up in high-crime communities found that young men focus on maintaining respect and avoiding the risk of gun violence, whereas young women focus on the fear of being the object of predatory behavior (Cobbina, Miller, and Brunson, 2008). In her graphic portrayal of life for low-income, urban, African-American girls, Miller (2008) emphasized how neighborhood environments place girls at risk, noting that teens often believe that the girls are to blame because of the way they behave or dress (Miller, 2008).

HUD’s experimental MTO program found strikingly different outcomes for adolescent girls and boys whose families received special vouchers to enable them to move from distressed public housing to lower poverty communities. Girls in the experimental group fared unexpectedly better in terms of mental health and their level of engagement in risky behavior (Ludwig et al., 2011; Sanbonmatsu et al., 2011). This result first appeared at the MTO Interim Evaluation (Orr et al., 2003); we conducted subsequent qualitative studies to explore this unexpected finding. That work suggested key differences in how neighborhood safety matters for male and female adolescents, with girls in high-poverty, high-crime communities also coping with pervasive sexual harassment and constant fear of sexual violence—in essence, a CSE (Briggs, Popkin, and Goering, 2010; Popkin, Leventhal, and Weismann, 2010). We conducted additional qualitative studies and used data from the MTO Final Evaluation Survey (Sanbonmatsu et al., 2011) to explore the relationship between perceptions of neighborhood violence and disadvantage, reports of unwanted sexual attention, and mental health outcomes for girls. This research revealed that, in neighborhoods of concentrated disadvantage, young women live with chronic fear of sexual harassment and intimate partner violence, including rape, which has negative consequences for both their behavior and their mental health (Briggs, Popkin, and Goering, 2010; Popkin, Leventhal, and Weismann, 2010; Smith et al., 2014). We hypothesize that relief from these environmental threats to girls’ sexual safety and the fear related to these threats account for the female-specific positive effect of moving away from distressed neighborhoods.

In this article, we build on this work to examine whether a CSE is associated with poorer mental health outcomes and with victimization, specifically, sexual harassment. We use new data to show that scales measuring CSEs appear to have an independent effect on mental health. We observed this outcome in our analysis of the MTO Final Survey, but we are able to demonstrate it more strongly with our new CSE scales. We specifically examine the association between CSEs and mental health outcomes for both adults and young people living in public housing in Washington, D.C. Our first hypothesis is that perception of living in a CSE is associated with poor mental health for both adults and young people. Our second is that these associations will persist when other indicators of neighborhood quality are held constant. Our third is that these associations will be weaker for adolescent boys than for adolescent girls.

Methods

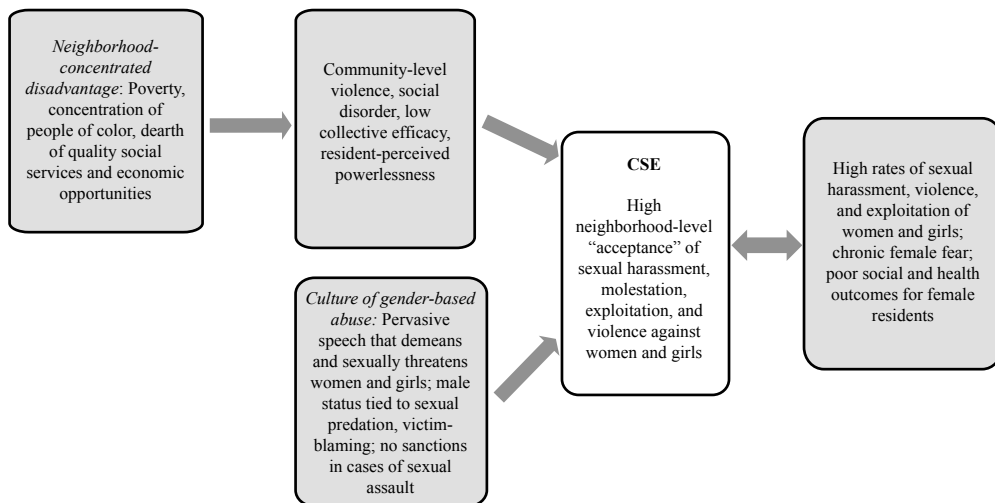
Conceptual Model

The conceptual model that emerged from our previous work and guided the current research is illustrated in exhibit 1. According to this model, neighborhoods of chronic disadvantage (Sampson, 2012) whose residents are nearly all people of color, that are characterized by high rates of poverty and a dearth of basic amenities such as libraries, playgrounds, parks, medical facilities, and grocery stores lead to bad outcomes for children and adults (Turner, Popkin, and Rawlings, 2009; Wilson, 1987). These neighborhoods have high levels of community violence and social disorder, and low levels of collective efficacy (Sampson, 2012). Our past work demonstrated that an additional dimension of neighborhood distress is the emergence of a CSE. In further work, we developed a scale with good psychometric qualities and high construct validity to measure this dimension of neighborhood quality (Popkin et al., forthcoming).

The CSE scales are designed to measure perceptions of and exposure to CSEs for adults and youth, respectively. For youth, items include how often respondents had seen the following in their neighborhood: prostitution, men or boys making unwanted sexual comments toward or touching women or girls, and men or boys physically hurting women or girls. The adult scale items include perceptions of how big a problem in the respondents' neighborhood are rape, prostitution, men or boys making unwanted sexual comments toward women, and men or boys hurting girls or women. Our psychometric analysis indicated that the CSE scales we developed for adults and youth have high Cronbach's alpha values (more than 0.75) and, therefore, good internal consistency. Our analyses of construct validity also suggest that CSEs fit into our model of neighborhood processes as we hypothesized (Popkin et al., forthcoming).

Exhibit 1

Conceptual Model



CSE = coercive sexual environment.

Data

HOST Demonstration

The data are from an evaluation of a demonstration project called Housing Opportunities and Services Together (HOST). HOST uses public and mixed-income housing as a platform for two-generation or whole family focus interventions. HOST tests the efficacy and cost-effectiveness of targeting the most vulnerable families with intensive, wraparound services. The HOST demonstration's goals are (1) improving employment, education, and physical and mental health outcomes for families and (2) reducing the level of violence and disorder for the community (Popkin and McDaniel, 2013). The HOST demonstration was fully implemented in three public and assisted housing communities in Chicago, Illinois; Portland, Oregon; and Washington, D.C. Each participating housing authority selected target participants from its list of leaseholders at the target site. Eligibility for the HOST program required the household to have children and, depending on the site, additional risk factors such as failure to comply with agency work requirements, an unemployed head of household, lease violations, or being at risk for eviction (Popkin and McDaniel, 2013; Popkin et al., 2012). The number of households targeted for HOST varied across sites, from more than 200 in Chicago to approximately 140 in Portland. In the first year of the demonstration at each site, we attempted to complete surveys with an adult and target youth in each HOST household to capture baseline measures for each target household; across the sites, response rates for adults exceeded 80 percent and for youth, 90 percent (Scott et al., 2013).

Our study focuses on adult and youth respondents from the Washington, D.C. HOST site because the survey measures in Washington benefited from substantial revisions made after it was fielded in Chicago and Portland. We measure exposure to CSE for youth because youth are more likely able to appropriately identify sexually exploitive acts rather than general perceptions of neighborhood problems related to sexual activity.

Survey Data

During the first HOST implementation year, we fielded two surveys—an adult survey and a youth survey—to capture baseline characteristics for HOST families and their communities. The adult survey asked heads of household about themselves and up to two focal children—one between the ages of 6 and 11 years and another between the ages of 12 and 18 years. Parents with a child in the older age range could then consent for that child to participate in a separate youth survey. The youth survey asked adolescents between the ages of 12 and 18 years about themselves.

The survey was fielded in Washington, D.C.'s Benning Terrace public housing development in the summer of 2013. Adult interviews were conducted on site in the homes or apartments of respondents, using Computer-Assisted Telephone Interviewing (CATI). Because of the sensitive sexual experience questions included in the youth survey, we adopted a bimodal method for conducting the youth interview. This approach entailed a CATI interview supplemented by a hardcopy completion of the sensitive sexual experiences questions.

Households were eligible for participating in HOST if they had at least one youth between the ages of 9 and 18 years. We attempted to survey all eligible households, conducting interviews with an adult and one youth in our target age range. If more than one youth in the household was eligible,

we selected a focal youth at random. Our response rate for the survey in Benning Terrace was 81 percent of the eligible adults and 87 percent of the eligible youth. We describe the 124 D.C. adult respondents and 79 D.C. youth respondents in exhibits 2a and 2b. Like the other residents in Benning Terrace, the adult respondents are very low-income African-American women (97 percent). The average adult respondent's age is 40. The youth respondents are all African-American teenagers who are, on average, 15 years old.

Exhibit 2a

Descriptive Statistics of Study Variables—Adult Sample

Study Variable	Percent of Sample	Mean Adult CSE Perception
All	100.0	3.95
Adult perception of neighborhood violence		
Neighborhood problem shooting and violence		
Big problem	67.7	4.82***
No or some problem	32.3	2.10
Neighborhood problem people being attacked or robbed		
Big problem	44.0	5.55***
No or some problem	56.0	2.70
Adult anxiety		
Anxious according to MHI-5 Scale		
Yes	34.4	4.84*
No	65.6	3.47
Adult depression		
Depressed according to CIDI Scale		
Yes	21.5	5.35**
No	78.5	3.56
Adult worry		
Worried a lot more than most people in past 12 months		
Yes	48.9	4.64**
No	51.1	3.36
Head of household sex		
Female	94.6	3.85
Male	5.4	5.00
Head of household marital status		
Married	10.8	4.50
Not married	89.2	3.87
Head of household employment status		
Worked in past 12 months		
Yes	43.0	4.00
No	57.0	3.90

CIDI = Composite International Diagnostic Interview. CSE = coercive sexual environment. MHI = Mental Health Inventory.

*p < .05. **p < .01. ***p < .001.

Source: DC HOST Adult Survey (2013)

Exhibit 2b

Descriptive Statistics of Study Variables—Youth Sample (1 of 2)

Study Variable	Percent of Sample	Mean Youth CSE Exposure Scale
All	100.0	1.97
Youth exposure to neighborhood violence		
Saw someone shoot or stab another person		
Never	86.1	1.75*
Once or more	13.9	3.36
Heard gunshots		
Never	20.3	0.43**
Once or more	79.7	2.36
Youth neighborhood violence victimization		
Someone pulled a knife or gun on you in past 12 months		
Never	91.1	1.81*
Once or more	8.9	3.57
Has been shot in the past 12 months		
Never	88.6	1.77*
Once or more	11.4	3.55
Has been cut or stabbed in the past 12 months		
Never	96.2	1.84**
Once or more	3.8	5.33
Has been jumped in the past 12 months		
Never	74.7	1.64*
Once or more	25.3	2.95
Youth exposure to neighborhood social disorder		
Saw someone dealing drugs out in the open in past 12 months		
Never	62.0	1.53*
Once or more	38.0	2.70
Saw drug paraphernalia on the ground/in public in past 12 months		
Never	59.0	1.21**
Once or more	41.0	3.06
Saw gang activity in past 12 months		
Never	60.8	1.16***
Once or more	39.2	3.22
Youth perceptions of neighborhood trust		
People look out for each other		
True	80.0	1.60**
False	20.0	3.53
Youth engagement with neighbors		
Know most of the people in neighborhood		
True	63.3	2.08
False	36.7	1.79
Have stopped on the street to talk with someone in past month		
True	82.3	2.07
False	17.7	1.50
Youth long-term anxiety		
Yes	17.7	2.50
No	82.3	1.86
Youth short-term anxiety		
Yes	43.0	2.67*
No	57.0	1.44

Exhibit 2b

Descriptive Statistics of Study Variables—Youth Sample (2 of 2)

Study Variable	Percent of Sample	Mean Youth CSE Exposure Scale
Youth worry		
Yes	54.4	2.48*
No	45.6	1.36
Head of household sex		
Female	97.4	1.98
Male	2.6	2.00
Head of household marital status		
Married	7.6	1.97
Not married	92.4	2.00
Head of household employment status		
Worked in past 12 months		
Yes	46.8	1.91
No	53.2	2.02
Youth gender		
Female	40.5	1.93
Male	59.5	2.00

CSE = coercive sexual environment.

*p < .05. **p < .01. ***p < .001.

Source: DC HOST Youth Survey (2013)

Variables

Exhibits 2a and 2b contain descriptive statistics on all variables in the analysis. Exhibit 3 provides detailed descriptions of the item wording for each variable.

Exhibit 3

Descriptions of Variables for Construct Validity Analysis (1 of 3)

Variable Name	Item Wording or Description	Scale
Coercive Sexual Environments Perceptions Scale (Adult)	Index of how big of neighborhood problems are rape or sexual attacks, women or girls trading sex for money, men or boys making unwanted sexual comments or gestures toward girls or women, and men or boys hurting women or girls	Index ranges from 0 (respondent does not perceive their neighborhood as having a problem with sexually coercive actions) to 8 (respondent perceives their neighborhood as being highly sexually coercive)
Coercive Sexual Environments Exposure Scale (Youth)	Index of how often in the past year the respondent experienced someone making unwanted sexual comments, jokes, or gestures; someone touched, grabbed, or pinched them in a sexual way that they did not want; someone spread sexual rumors about them; and someone e-mailed or texted them sexual pictures, photographs, or messages that they did not want	Index ranges from 0 (no exposure to a coercive sexual environment in their neighborhood) to 8 (high exposure to a coercive sexual environment in their neighborhood)

Exhibit 3

Descriptions of Variables for Construct Validity Analysis (2 of 3)

Variable Name	Item Wording or Description	Scale
Collective Efficacy Scale (Adult)	Index of whether people in neighborhood are willing to help, share the same values, are close knit, can be trusted, and generally get along with each other, and the likelihood that neighbors do something if saw children skipping school, spray-painting graffiti, showing disrespect toward an adult, or if a fight breaks out in front of their home or the fire station closest to their homes was going to be shut down	Index ranges from 1 (respondent does not agree or it is unlikely) to 4 (respondent strongly agrees or it is very likely)
Social Disorder Scale (Adult)	Index of how big of a problem were groups of people hanging out, people selling drugs, people using drugs, and gangs	Index ranges from 1 (respondent believes it is no problem at all) to 3 (respondent believes it is a big problem)
Violence Scale (Adult)	Index of how big of a neighborhood problem are shootings and violence, and people being attacked or robbed	Index ranges from 1 (respondent believes it is no problem at all) to 3 (respondent believes it is a big problem)
Adult perception of neighborhood violence		
	How big of a neighborhood problem are shootings and violence?	Dummy variable, equals 1 when problem is considered big
	How big of a neighborhood problem are people being attacked or robbed?	Dummy variable, equals 1 when problem is considered big
Youth exposure to neighborhood violence		
	During the past 12 months, how often did you see someone shoot or stab another person?	Dummy variable, equals 1 when once or more
	During the past 12 months, how often have you heard gun shots?	Dummy variable, equals 1 when once or more
Youth neighborhood violence victimization		
	During the past 12 months, how often did someone pull a knife or gun on you?	Dummy variable, equals 1 when once or more
	During the past 12 months, how often did someone shoot you?	Dummy variable, equals 1 when once or more
	During the past 12 months, how often did someone cut or stab you?	Dummy variable, equals 1 when once or more
	During the past 12 months, how often were you jumped?	Dummy variable, equals 1 when once or more
Youth exposure to neighborhood social disorder		
	During the past 12 months, how often did you see someone dealing drugs out in the open?	Dummy variable, equals 1 when once or more
	During the past 12 months, how often did you see drug paraphernalia on the ground/in public?	Dummy variable, equals 1 when once or more
	During the past 12 months, how often did you see gang activity (graffiti, selling drugs, violence)?	Dummy variable, equals 1 when once or more

Exhibit 3

Descriptions of Variables for Construct Validity Analysis (3 of 3)

Variable Name	Item Wording or Description	Scale
Youth perceptions of neighborhood trust		
	People in this neighborhood look out for each other	Dummy variable representing true/false response
Youth engagement with neighbors		
	You know most of the people in your neighborhood	Dummy variable representing true/false response
	In the past month, you have stopped on the street to talk with someone who lives in your neighborhood	Dummy variable representing true/false response
Adult Anxiety	Anxious according to five-item mental health inventory (MHI-5) Scale	Dummy variable representing yes/no response
Adult Worry	People differ a lot in how much they worry about things. Did you have a time in the past 12 months when you worried a lot more than most people?	Dummy variable representing yes/no response
Adult Depression	Depressed according to Composite International Diagnostic Interview (CIDI) Depression Scale	Dummy variable representing yes/no response
Youth Long-Term Anxiety	Did you ever have a period lasting 1 month or longer when you were anxious or worried most days?	Dummy variable representing yes/no response
Youth Short-Term Anxiety	Did you ever have a time in your life when you were much more nervous or anxious than most people with the same problems as you?	Dummy variable representing yes/no response
Youth Worry	Did you ever have a time in your life when you were “a worrier”—that is, when you worried a lot more about things than other people with the same problems as you?	Dummy variable representing yes/no response
Head of household sex	What is your/his/her sex?	Dummy variable equals 1 for female
Head of household union status		Dummy variable equals 1 for married or living in a marriage-like situation
Head of household employment status	Respondent worked in the past 12 months	Dummy variable representing yes/no response
Youth gender	Focal child sex	Dummy variable, equals 1 for female

Dependent Variables: Mental Health. Three mental health outcome variables were measured for adults and three for youth. For adults, the variables are *anxiety*, *worry*, and *depression*.¹ For young people, the variables are *short-term anxiety*, *long-term anxiety*, and *worry*.²

¹ *Anxiety* is a five-item scale from the National Survey of America’s Families, which adapted the questions from the Mental Health Inventory: http://www.urban.org/uploadedPDF/Methodology_6.pdf. *Worry* is a single question taken from the National Health Interview Survey: https://www.ihs.us/ihs-action/variables/WORMORE#survey_text_section. *Depression* is the seven-item scale Composite International Diagnostic Interview—Short Form used in the National Health Interview Survey. A score of 3 or more classifies as a probable case of major depression with dysphoric mood or anhedonia: <http://www.hcp.med.harvard.edu/wmhcid/about.php>.

² All three youth mental health indicators are single items from the 2004 National Comorbidity Survey: Adolescent Supplement: <http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/28581>.

Independent Variable. The independent variables for the analysis are the measures we have developed of CSEs (Popkin et al., forthcoming). Examples of items capturing this construct are adult perceptions of how much of a problem in their neighborhood are rape, or men or boys hurting women or girls, and youth neighborhood exposure to transactional sex and unwanted sexual advances. The adult measure of perceptions of CSE and the youth measure of exposure to CSE each have alpha values of more than 0.75. (Descriptive statistics on the distribution of the adult and youth CSE scales are provided in exhibit 4.) The mean CSE perception scale score was 3.95, demonstrating that, on average, adults perceived all four CSE actions as somewhat of a problem, two CSE actions as big problems, or one CSE action as a big problem and two CSE actions as somewhat of a problem. The mean youth CSE exposure was 1.97, meaning youth were, on average, exposed to one CSE action more than once in the past year or two CSE actions once in the past year. The lower 50 percent of youth were exposed to only one CSE action in the past year.

Exhibit 4

Distribution of CSE Scales

	Mean	SD	Minimum	Quar- tile 1	Median	Quar- tile 3	Maxi- mum	N	Standardized Chronbach Coefficient Alpha
Adult CSE perceptions	3.94624	2.6677	0	2	4	6	8	93	0.855
Youth CSE exposure	1.97468	2.25306	0	0	1	3	8	79	0.765

CSE = coercive sexual environment. SD = standard deviation.

Control Variables. In the multivariate models, we control for both neighborhood and individual factors that may confound the association between CSEs and the dependent variables. The neighborhood measures are adult and youth exposure to violence, youth neighborhood victimization, adult and youth exposure to neighborhood social disorder, and adult and youth perceptions of neighborhood trust and engagement with neighbors (collective efficacy). At the individual level, we control for adult age, union status (married or in a marriage-like relationship or not), and employment status. In the youth multivariate models, we control for the same characteristics of the youth's parent as in the adult models and also for youth gender.

Regression Methods

To assess the association between CSEs and our outcomes, we regressed the mental health indicators on the CSE scale with and without confounders. We used logistic regression because the outcomes are dichotomies.

First, we used regression to estimate the unadjusted association between CSEs and the outcomes (model 1). Next we estimated the association adjusted for the individual control variables (model 2). Then we estimated the association net of neighborhood violence (model 3), social disorder (model 4), and collective efficacy (model 5) in turn. Finally, for youth only, we estimated a model with CSEs, the control variables, and an interaction between CSEs and being female (model 6).

Results

Our first hypothesis is that a CSE is associated with poor mental health outcomes. In the second column of exhibit 5, the odds ratios, which are the unadjusted estimates of the association between the CSE and the outcomes, indicate support for this hypothesis. For adults, the perception of a CSE is associated with an increased likelihood of anxiety, worry, and depression. A 1-point increase on the adult neighborhood CSE perception scale is associated with a 1.2 times increased likelihood of being anxious and worried and a 1.3 times increased likelihood of being depressed. For youth, exposure to a CSE is associated with short-term anxiety and worry. A 1-point increase in the CSE exposure scale relates to a 1.2 times increased likelihood of having short-term anxiety and 1.3 times increased likelihood for being worried. The second hypothesis is that these associations persist in the face of controls for individual characteristics and other neighborhood characteristics (violence, social disorder, collective efficacy). The numbers in columns three through six in exhibits 5 and 6 provide partial support for this hypothesis. Among adults, the association between CSE perception and mental health is eliminated when controls for social disorder (model 4) are introduced; this is also true of the association between youth exposure to CSE and short-term anxiety.

The third hypothesis is that, among youth, the association between CSEs and the outcomes would be stronger for girls than for boys. We tested this hypothesis by running model 2 (CSE plus individual controls) with an interaction term between being female and CSE. Exhibit 7 contains the results. CSE is not more strongly associated with negative mental health outcomes for girls than for boys—in fact, in the models containing an interaction, the estimate for both is not significantly different from zero.³

Exhibit 5

Odds Ratio of Mental Health Outcomes on CSE for Adults and Youth by Model

	Model 1 (Unadjusted)	Model 2 (CSE + Controls)	Model 3 (M. 2 + Neighborhood Violence)	Model 4 (M. 2 + Social Disorder)	Model 5 (M. 2 + Collective Efficacy)
Adults					
Anxiety	1.23*	1.24*	1.33*	1.13	1.27*
Worry	1.21*	1.21*	1.12	1.18	1.19*
Depression	1.33*	1.32*	1.39*	1.22	1.33*
Youth					
Short-term anxiety	1.29*	1.28*	1.39*	1.24	1.34*
Long-term anxiety	1.13	1.09	1.05	1.11	1.27
Worry	1.28*	1.27*	1.32*	1.33*	1.27*

CSE = coercive sexual environment.

*p < .05.

³ We tested for collinearity using tolerance statistics, and the model tolerated all independent variables, meaning the variables are not collinear.

Exhibit 6

OLS Coefficients for Sexual Harassment Scale on CSE for Adults and Youth by Model

	Model 1 (Unadjusted)	Model 2 (CSE + Controls)	Model 3 (M. 2 + Neighborhood Violence)	Model 4 (M. 2 + Social Disorder)	Model 5 (M. 2 + Collective Efficacy)
Sexual harassment scale adult	0.16***	0.18***	0.14*	0.15*	0.17**
Sexual harassment scale youth	0.68***	0.73***	0.75***	0.47*	0.54**

CSE = coercive sexual environment. OLS = ordinary least squares.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Exhibit 7

Association of CSE With Outcomes for Youth by Gender (model 2)

	Male ^a	Female ^b
Short-term anxiety ^c	1.22	1.15
Long-term anxiety ^c	1.00	1.30
Worry ^c	1.11	1.57
Sexual harassment scale ^d	0.48*	0.65*

CSE = coercive sexual environment.

* $p < .05$.

^a Main effect in presence of interaction may be interpreted as effect for male respondents.

^b Interaction term.

^c Odds ratios.

^d Ordinary least squares coefficients.

Discussion

The hypotheses tested lend additional weight to experimental, qualitative, and psychometric evidence that a CSE is a distinctive aspect of neighborhoods of concentrated disadvantage that may have deleterious effects on the mental health and experiences of young people who reside there. Our results show that CSE perceptions among adults and CSE exposure among youth are associated with poor mental health. For the most part, these associations persisted in the face of controls for other, related aspects of neighborhood quality, although controlling for social disorder diminished the associations between CSE perceptions and adult mental health and CSE exposure and youth short-term anxiety. This finding suggests that CSE is more closely related to social disorder than are other aspects of neighborhood quality.

We did not find that exposure to CSE was associated with poor mental health more so for girls than boys as we hypothesized.

Our study has some important limitations. It is cross-sectional, so no inferences about causality are possible. We also have a small sample, which might have interfered with our ability to observe the gender interaction we hypothesized. Moreover, our respondents were from one neighborhood

and public housing development and are not generalizable. In addition, our adult sample is nearly exclusively women, making it impossible to draw conclusions about men in this community. Our scale did not include any items about the harassment of gender minority people, which might be part of CSE (Higa et al., 2014).

Despite these limitations, our findings represent an important step forward in understanding how CSE relates to health and mental health outcomes. Further, the importance of these findings is greater when considered in combination with other results. Experimental and qualitative results strongly suggest that girls who leave neighborhoods of concentrated disadvantage experience improvements in mental health and that those improvements are due to a reduction in exposure to a CSE (Briggs, Popkin, and Goering, 2010; Popkin, Leventhal, and Weismann, 2010; Smith et al., 2014). Our own psychometric work has established that exposure to neighborhood CSE can be measured and is distinct from, but related to, other indicators of neighborhood disadvantage. In this study, we show that, net of other indicators of neighborhood disadvantage, exposure to CSE is associated with poor mental health among both adults and children and the experience of sexual harassment, the latter for girls more so than boys. These results establish that the mechanism we theorized to explain the positive effect of moving out of poor neighborhoods on girls is plausible.

The finding that the association between CSE and mental health is reduced or eliminated when social disorder is controlled suggests that CSE is more closely related to social disorder than the other indicators of neighborhood characteristics that we examined. These results point toward community-level interventions to reduce CSE as an important component of interventions to improve neighborhood conditions in public housing developments and other disadvantaged neighborhoods. Such interventions are distinguishable from others that are aimed at reducing social organization—with which CSE is highly correlated, because they will contain specific components that address the issue of gender norms and gendered behavior.

The finding that the negative association between CSE and mental health is not stronger for girls was a surprise; it may be the consequence of small sample size. Nevertheless, the theory of CSE posits that this component of social disorder has differential effects on boys and girls, rather than no effects on boys.

Important next steps include examining CSE and its relationship to outcomes in the context of longitudinal research and with larger and more generalizable samples. The findings from this body of research have important implications for public health and social service interventions in such disadvantaged neighborhoods and for the ability of individuals living there to lead healthier lives.

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