Neighborhood Context of Reception and HIV Risks among Latino Immigrants in Carrboro/Durham, NC

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Abstract

This paper builds on social disorganization theory to formulate and test a multilevel model of HIV risks, namely use of sex workers, among Latino immigrants in Durham, NC. Data for the analysis come from 1466 face-to-face interviews with Latino migrants from 32 apartment complexes in Durham. We demonstrate that risk behaviors, as well as other social disadvantages, are directly connected with individual and neighborhood processes of social disorganization and community attachment. At the individual level, time in the U.S. alters immigrants' propensities to engage in risk behaviors. At the neighborhood level, factors such as a highly unbalanced gender composition, large share of recent migrants, concentration of socially isolated individuals, and visible indicators of disorder such as littering are all associated with heightened exposure to risk behaviors. As a result, HIV risks concentrate in well defined neighborhoods; implications for public health interventions are discussed.

Extended abstract

A long-standing research tradition in the social sciences focuses on how local community processes affect health behaviors above and beyond individual level factors. A fundamental assumption in this literature is that communities exhibit structural ecological properties that are distinct from the characteristics of their individual members and affect the social bonds and attachments that regulate behavior. At the same time, the immigrant adaptation literature stresses that properties of the context of reception, such as government policies, public opinion towards immigrants, and characteristics of the co-ethnic community, can directly impact immigrant outcomes. Despite its emphasis on macro level conditions, though, the immigrant adaptation literature has for the most part neglected the health impact of variation in local community or *neighborhood* context.

In this paper, we integrate these two literatures to formulate and test a multi level model of HIV risk behaviors, namely use of sex workers, among Latino immigrants to Durham, NC. Our theoretical framework builds on expectations derived from the social disorganization theory of crime and deviance and applies them to the link between neighborhood context of reception and HIV risks among Latino migrants in the U.S.

Data for the analysis come from face-to-face interviews conducted with 1466 Latino migrants from 32 apartment complexes in Durham, NC. We demonstrate that sexual risk behaviors, as well as other social disadvantages, are directly connected with individual and neighborhood processes of social disorganization and community attachment. At the individual level, time in the U.S. alters immigrants' propensities to engage in risk behaviors. At the neighborhood level, certain characteristics, such as a highly unbalanced gender composition, large share of recent migrants, concentration of socially isolated individuals, and visible indicators of disorder such as littering are all associated with heightened exposure to HIV risk. As a result, HIV risks concentrate in well defined areas of residence. Identifying such neighborhoods can be a particularly useful strategy for the development of more targeted and cost-effective interventions that use neighborhoods as the unit of analysis and affect both the individual and contextual forces enhancing exposure to HIV risks among immigrants.

Theoretical framework: Social disorganization, community attachment, and risk behaviors - individual and neighborhood level processes.

Social disorganization theory was originally formulated to explain the experience of European migrants arriving to the U.S. at the turn of the century. According to this perspective, migration is a socially disorganizing experience that exposes migrants to new norms and patterns

of behavior and disrupts the socio-interactional processes accounting for social cohesion in communities of origin. As a result, the social ills observed among migrants at place of destination, such as alcoholism, depression, or family violence, are the product of the breakdown of social bonds and community attachments, rather than the effect of cultural traits or imported patterns of behaviors.

Subsequent theoretical developments, especially within the criminology literature, more precisely defined social disorganization as the inability of communities to achieve the common goals of their residents and maintain effective social controls, particularly over the behavior of young men. This perspective was subsequently formulated in a systemic model of community attachment that views the local community "as a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and on-going socialization processes" (Kasarda and Janowitz, 1974: 329). The structure of such social organization has both individual and neighborhood level components.

At the individual level, the systemic model of community attachment stresses the role of length of residence as a key factor affecting the social bonds regulating behaviors. As length of residence increases, social bonds strengthen community involvement and reduce risk practices. For immigrants increased time in the U.S. not only affects their bonds and feelings of belonging to the community but also the capacity to form more stable, non-commercial sexual relationships.

At the neighborhood level, Shaw and McKay (1942) identify three structural conditions that undergird the spatial concentration temporal perpetuation of risks in particular areas; namely poor economic conditions, population turnover, and ethnic heterogeneity. These three structural conditions correlate with social disorganization because they inhibit the interactional processes

responsible for social control; they undermine communities' ability to establish institutions oriented towards the common good, restrict the development of primary relationships that result in informal structures of supervision and support, and impede communication among local residents obstructing attempts to define and reach common goals (Bursik, 1988). While these expectations have received substantial validation in the literature on crime, they have are also consistently associated with risk behaviors and health (Lee, 2002).

More recently, researchers have paid increased attention to the physical dimensions of the local environment that might also correlate with risk behaviors. In an influential article, Wilson and Kelling (1982) argued that minor incivilities and deteriorated physical conditions of neighborhoods can lead to more serious violent crime. Using the metaphor of "Broken Windows," this perspective highlights that an ambiance of disorder creates the impression that nobody is in control and that crimes can be committed. This includes elements of physical disorder such as graffiti, litter, broken windows, and general disrepair, and behavioral disorder such as public urination, loud and disorderly youth behavior, or street prostitution. These conditions can heighten crime in a community and are also associated with neighborhood health disparities (Wallace 1990; Cohen 2003).

In a different but related vain, Sampson and colleagues (1991, 1997) have built on the concept of social capital (Coleman, 1988) and self-efficacy (Bandura, 1986) to postulate a theory of collective efficacy applicable to neighborhoods and communities. Collective efficacy is defined as "social cohesion among neighbors combined with their willingness to intervene on behalf of the common good," that helps to reduce crime (Sampson, et al. 1997:918). The ability of neighborhoods to exercise collective efficacy depends in large part on social cohesion, trust,

and solidarity among residents, elements that are often lacking in immigrant receiving neighborhoods due to the marginalized and isolated social position of migrants.

Finally, Latino immigrant communities, especially those emerging in non-traditional areas of destination in the U.S., exhibit a highly unbalanced gender composition. The gender composition of communities has received little attention as a neighborhood dimension affecting risk behaviors. At the individual level, though, Hagan and colleagues have advanced a power-control theory of deviance that argues that the gendered division of labor in male dominated societies renders women the primary instruments of social control within the family. We argue that this instrumental role also extends to local communities. Having women in the neighborhood can contribute to a sense of family and community that might discourage men from participating in risk behaviors. From a social capital perspective, a more balanced gender composition could also be a resource that can trigger informal social controls and reduce risk behaviors, since women often serve as a link between migrants and their communities and families of origin.

Data and setting

Data for the analysis come from 1,466 face-to face interviews with Latino immigrants residing in 32 apartment complexes in Durham, NC. The area is a particularly interesting setting to examine the spatial concentration of risks, including sexual risk behaviors. Latino migrants were drawn to the area in the 1990s in response to the high tech boom in the nearby research triangle and the concomitant demand for workers in construction and service industries. In response, the Latino population experienced explosive growth, increasing from less than 1 to 9 percent of the total population between 1990 and 2000. This rapid growth is part of a larger trend

toward increasing Latino migration to nontraditional destinations throughout the southeastern United States.

The relatively recent arrival of Durham Latinos is evident in data from the 2000 Census, which shows that nearly 75 percent of area Latinos are foreign born, with more than 85 percent migrating to the United States after 1990. Not surprisingly, the vast majority of Latino migrants is undocumented, exhibit relatively low levels of English fluency, and are concentrated in low-skill employment with little occupational diversity (more than half of employed migrant men work in construction).

Like many areas of new migrant destination, the gender composition of the Latino population is highly uneven (Suro and Singer 2002), with more than 2 men aged 20 to 29 for every woman in the same age range. As a result, areas of high Latino concentration have become targets for a relatively well-developed sex industry that has made sex workers readily available. Street-walking sex workers solicit in areas where migrants congregate and a number of brothels (or "*casas de cita*") operate in and around apartment complexes with large numbers of unaccompanied male migrants. Groups of sex workers also frequent the apartments housing Latinos soliciting men gathered in common areas or going door to door in search of clients. In addition, a small number of bars and clubs tailored to serve the Latino community provide night time recreational activities. While women in these bars are less numerous than men, they include both Latinas and Anglo women, providing an avenue for non-commercial social interactions and access to the wider dating market (Cravey, 2003).

The relatively recent development of the Durham/ Latino community required special considerations to approximate a representative sample (Smith and Furuseth, 2004). Our study relied heavily on Community Based Participatory Research (CBPR), which uses a critical

theoretical perspective that includes the "local theory" of community participants as collaborators in the research process (Israel et al. 2003). In our case, a group of 14-20 Latino men and women[1] from the community were directly involved between 2001 and 2008 in every stage of the research, including formulation and revision of the questionnaire, identification of survey locales, and development of strategies to guarantee the collection of meaningful information. In addition, the CBPR group was trained in survey methods and conducted all interviews. The group was instrumental in allowing us to reach the still nascent Latino community and in ensuring the quality of the information collected. The CBPR group helped us to achieve a refusal rate of 10.7 percent, a figure that compares favorably with those reported in other studies of recent migrants (Parrado, et al. 2005). In addition, regular group meetings were used to discuss results and to gain culturally grounded interpretations for the analyses.

We followed targeted random sample techniques to approximate a representative sample of the Durham/Carrboro Latino community. Based on CBPR discussions and our knowledge of the community, we identified 35 apartment complexes and blocks and 13 trailer parks that house large numbers of migrant Latinos. We then conducted a census of all the apartments in these areas to construct a sampling frame and randomly selected individual units to be visited by interviewers. Overall, our sampling procedure resulted in 1,522 face-to-face interviews with migrant Latino men ages 18 to 49 years in Durham/Carrboro, NC.

One advantage of our targeted design is that the areas of Latino concentration used for our sampling frame closely approximate theoretical (rather than the more common administrative definition, such as census tracts) conceptualization of neighborhoods. The literature is somewhat imprecise about what exactly constitutes a neighborhood. However, there is consensus that a neighborhood involves both a spatially identifiable environment separate

[1] The female component of the project is not discussed in the present paper.

from the larger context and a concentration of interactional processes among residents that results in norms and expectations about behaviors that are grounded in the local area. In our case, the sampling units have clearly geographically defined boundaries that allow their residents to identify them by name. In addition, the sampling units function as the area of residence where people spend most of their free time. They provide a spatially bounded environment where people develop friendships, get together to play cards or drink, and recreate during the weekend. As discussed above, it is this spatial and interactional configuration that also serves to concentrate risk factors for HIV in some neighborhoods more than others.

For the purposes of this analysis we limit our sample to the 1,466 surveys conducted in 32 neighborhoods where at least 10 immigrant Latino men were interviewed. We use the individual level data to construct aggregate measures of health risks and indicators of social disorganization. In addition, we use data from our sampling frame to construct a measure of the ethnic composition of the neighborhood.

Analytical strategy and model specification

The dependent variable in our analysis is reported sex worker use in the previous year. Following our theoretical framework explanatory variables include both individual and neighborhood level indicators. Individual level variables include measures of socioeconomic background, such as age, years of education, and wages, as well as an indicator of marital status. In recognition of the complex relationship between marriage and migration, we distinguish between single men, accompanied married men (who reside with a spouse), and unaccompanied married men (whose wives continue to reside in their communities of origin). Following the

systemic model of community social organization we include two measures of attachment, time in Durham and English language ability.

Neighborhood level dimensions follow our theoretical discussion. We include three indicators of neighborhoods structural position that correspond to Shaw and McKay's poor economic conditions, population turnover, and ethnic heterogeneity dimensions, namely median wages, percent recently arrived (defined as the proportion of migrant men with less than 3 years in the area); and percent of the neighborhood (i.e., apartment complex) population that is not Hispanic.

External indicators of social organization follow the physical and behavioral aspects highlighted in the broken windows perspective and include: percent of apartments that are vacant, whether the police or private security forces are visible in the complex, a littering index that is the sum of interviewers' positive answers to 5 observations (1- beer bottles can be seen outside the apartments, 2 – cigarettes butts can be seen on the ground, 3 – there is a lot of trash and glass outside the apartments, 4 – there are abandoned cars in the complex, and 5 – there are boarded up apartments), and the log of the number of crimes reported to the police within a quarter miles radius.

Our measure of collective efficacy captures the degree of isolation of residents in the apartments and is computed as the average number of times that residents reported not having anybody that a) would listen or support them; b) they trust; c) knows how things work in the U.S.; d) could help with errands; and e) could provide them with transportation. Finally, our measure of gender balance is the percent of apartments with at least one female resident.

Together the individual and neighborhood indicators results in a two-level model measuring the factors affecting use of sex workers among Latino immigrants. Since the clustering

of respondents within neighborhoods violates the independence assumption in standard regression, we formulate a 2-level Hierarchical Logit model that takes the following form,

$$\text{Level-1:} \quad \log[P/(1-P)]_{ij} = \beta_{0j} + \beta_{qj}X_{qij}$$
$$\text{Level-2:} \quad \beta_{0j} = \gamma_{00} + \gamma_{0s}Y_{sj} + \mu_{0j}$$

where P_{ij} is the probability of reported sex workers use in the past year for respondent *i* in apartment complex *j*; β_{0j} is an intercept term, X_{qij} are individual-level covariates *q* with β_{qj} parameters to be estimated. The level-1 intercept (β_{0j}) is modeled at level-2, where γ_{00} is an intercept, Y_{sj} are neighborhood-level covariate *s* for apartment complex *j* associated with γ_{0s} coefficients, and μ_{0j} is a random effect. In substantive terms, by estimating the intercept in level 2, this model captures neighborhood variation in sex workers use propensities.

Preliminary results

Neighborhood risk concentration

The first part of the paper examines the extent of neighborhood concentration in risk factors. In Figure 1 we show that sex worker use varies considerably across apartment complexes in Durham. Overall, 28% of men reported using sex workers in the previous year. However, in some neighborhoods virtually no commercial sex was reported, while in others over 45 percent of all men engaged in commercial sex.

The overlap in the spatial distribution of sex worker use and concentration of other risks is also important. We performed a common factor analysis of neighborhood dimensions of social disorganization and prevalence of sex worker use and grouped the complexes into neighborhoods with very low, low, medium, high, and very high level of social disorganization. Briefly, the main finding from the exercise, reported in Table 1, is that certain neighborhoods concentrate not only sexual risk behaviors, but also a host of other elements of social disorganization. In

particular, highly disorganized communities are characterized by frequent police presence and a disproportionate share of low-wage earners and vacant houses. More importantly, they also tend to have fewer non-Latino residents and to concentrate recently arrived migrants, which contributes to the relative dearth of women in highly disorganized communities.

Figure 2 maps variation in risk concentration across Durham, showing a wide dispersion of apartment complexes and risk across the area. We describe how this dispersion correlates with the development and expansion of the Latino population in Durham, arguing that it is the more historic, point-of-entry communities that continue to attract large numbers of unaccompanied recent arrivals, thus giving temporal stability to the neighborhoods most concentrating health risks.

Multivariate results

A major objective of the paper is to model variation across neighborhoods in sex worker use in a multivariate context. The primary objective is to discern which elements of social disorganization best explain the impact of neighborhood context on risk behavior. Table 2 shows results for 7 models that include individual level predictors and then add indicators of structural social disorganization, external social organization, collective efficacy, and gender balance. Briefly, results show that individual indicators of community attachment, namely time in the area, do correlate with sex worker use in a non-linear manner. At illustrated in Figure 3, results show that HIV risks are lower immediately after arrival, increase with time until roughly 4 years of residence, when they again begin to decline.

Estimates for the effect of neighborhood level variables on sex worker use are for the most part consistent with expectations from the social disorganization literature. However, results show that estimates are highly associated and they tend to cancel each other out.

Concentrations of recent arrivals and a lack of ethnic diversity both predict sex worker use, before other neighborhood indicators are included in the model. Likewise, indicators of "broken windows" such as littering and the need for extra security/police presence also positively predict sex worker use when introduced alone.

The final model shows that the likelihood of sex worker use decreases consistently as the percent of apartments with female residents increase. This is consistent with our extension of power control theory and the role of women in facilitating social organization. Likewise, sex worker use is higher in communities that lack collective efficacy, though the effect is non-linear. In the final paper, we will elaborate on how this non-linearity reflects the double-edged nature of social support in immigrant gateway neighborhoods, which provide shelter, transportation, and employment contacts to newly arrived migrants but represent highly disorganized areas of concentrated risk openly targeted by sex workers.

Conclusions:

This paper examines the relationship between neighborhood level context of reception and immigrant adaptation in the form of HIV risk behavior. We show that neighborhood elements of social disorganization are indeed important determinants of risk in the form of participation in commercial sex. In particular, the concentration of recently arrived and unaccompanied men, and the concomitant lack of female presence, serves to amplify HIV risk in a handful of communities. Moreover, a host of associated elements of disorganization, such as "broken windows" and a lack of collective efficacy, also contribute to higher rates of sex worker use in high-risk neighborhoods.

Implications for public policy and public health research will be discussed, emphasizing the utility of neighborhoods as a point of intervention in interventions seeking to reduce the spread of HIV and other STIs in migrant communities.

Table 1: Variation in neighborhood characteristics by level of social disorganization

		Level of social disorganization				
	Average	Very low	Low	Medium	High	Very High
Police	0.5	0.0	0.3	0.3	0.8	1.0
Total # Crimes	138	108	205	163	90	156
Median Wages	9.9	11.0	9.9	9.8	9.7	8.9
Percent Vacant	13.5	6.7	20.2	8.2	11.0	21.2
Percent Recent	45.4	35.0	36.2	45.1	52.2	57.3
Percent Non-Hispanic	20.5	32.9	22.5	16.8	18.0	11.1
Percent Households with women	61.0	74.3	73.0	56.7	52.6	48.5
Mean Lack of Efficacy	1.4	1.2	1.5	1.7	1.4	1.1
N	32	6	7	4	10	5

Table 2: Multi-level model assessing the connection between social disorganization and sex worker use

Intercept	-0.876	**	(0.372)	-2.310	**	(1.154)	-1.417	**	(0.425)	-2.415	**	(0.730)	0.098		(0.470)	-2.739	**	(1.594)	-1.175	**	(0.864)
Socioeconomic and demographic background																					
Age	0.006		(0.010)	0.006		(0.010)	0.006		(0.010)	0.005		(0.010)	0.006		(0.010)	0.006		(0.010)	0.006		(0.010)
Years of education	-0.026		(0.022)	-0.029		(0.022)	-0.022		(0.022)	-0.026		(0.022)	-0.021		(0.022)	-0.022		(0.023)	-0.022		(0.023)
Hourly wages	-0.008		(0.013)	-0.008		(0.013)	-0.007		(0.013)	-0.009		(0.014)	-0.007		(0.012)	-0.008		(0.013)	-0.007		(0.012)
Family status (reference single)																					
Married	-2.783	**	(0.247)	-2.783	**	(0.247)	-2.795	**	(0.247)	-2.758	**	(0.247)	-2.759	**	(0.247)	-2.755	**	(0.248)	-2.743	**	(0.247)
Married without spouse	-0.261		(0.176)	-0.287	*	(0.176)	-0.284	*	(0.176)	-0.261		(0.175)	-0.307	*	(0.177)	-0.314	*	(0.178)	-0.307	*	(0.177)
U.S. social capital																					
Years in Durham	0.483	**	(0.109)	0.464	**	(0.110)	0.466	**	(0.110)	0.476	**	(0.109)	0.463	**	(0.109)	0.458	**	(0.111)	0.459	**	(0.110)
(squared)	-0.079	**	(0.019)	-0.074	**	(0.019)	-0.075	**	(0.019)	-0.078	**	(0.019)	-0.075	**	(0.019)	-0.074	**	(0.019)	-0.074	**	(0.019)
(cubic)	0.003	**	(0.001)	0.003	**	(0.001)	0.003	**	(0.001)	0.003	**	(0.001)	0.003	**	(0.001)	0.003	**	(0.001)	0.003	**	(0.001)
Speaks Some English	-0.047		(0.150)	-0.018		(0.150)	-0.032		(0.150)	-0.054		(0.148)	-0.031		(0.149)	-0.011		(0.151)	-0.031		(0.149)
Structural social organization																					
Median wages				0.111		(0.101)										0.109		(0.115)			
Percent recently arrived				0.014	*	(0.008)										0.006		(0.010)			
Percen non-Hispanic				-0.017	**	(0.008)										-0.005		(0.010)			
External social organization																					
Percent vacant							0.004		(0.007)							0.006		(0.009)			
Police/Security in complex							0.345	**	(0.167)							0.135		(0.233)			
Littering index							0.095	**	(0.044)							0.048		(0.051)			
Number of Crimes (log)							0.000		(0.001)							0.028		(0.091)			
Collective efficacy																					
Mean lack of contacts										2.551	**	(1.020)				1.178	**	(1.323)	1.900	**	(1.057)
(squared)										-0.910	**	(0.368)				-0.397	**	(0.474)	-0.684	**	(0.379)
Gender balance																					
Percent female													-0.018	**	(0.005)	-0.010		(0.008)	-0.015	**	(0.006)

Figure 1: Neighborhood variation in sex worker use

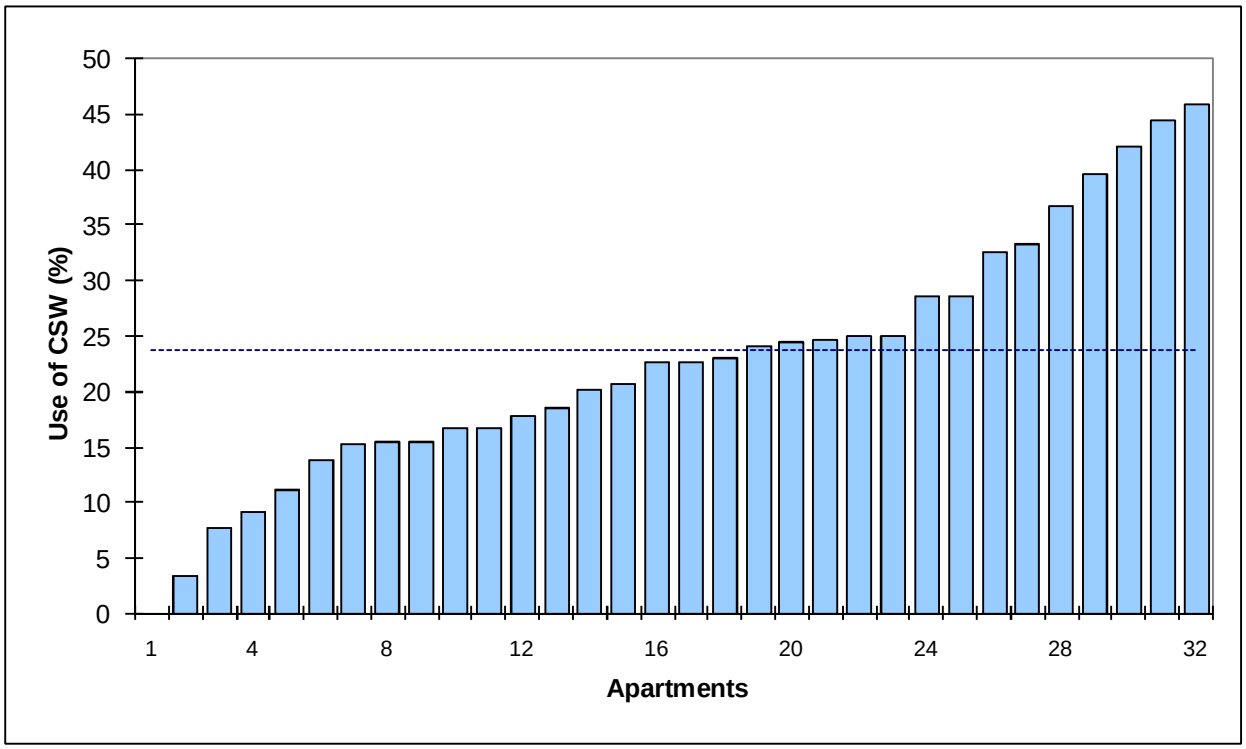

Figure 2: Map of concentrated disadvantage index across Durham/Carrboro, NC

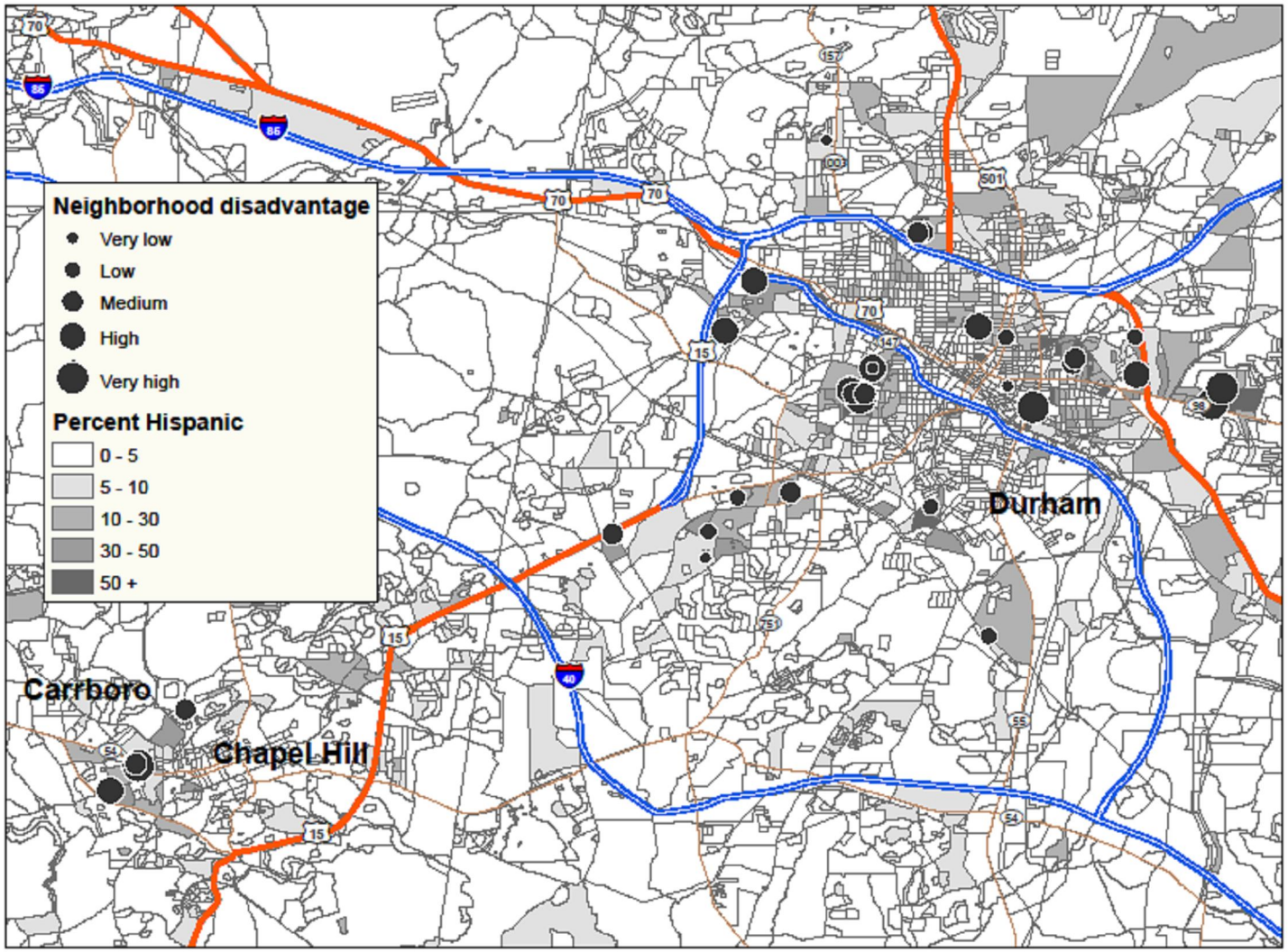

Figure 3: Relationship between time in Durham and likelihood of sex worker use

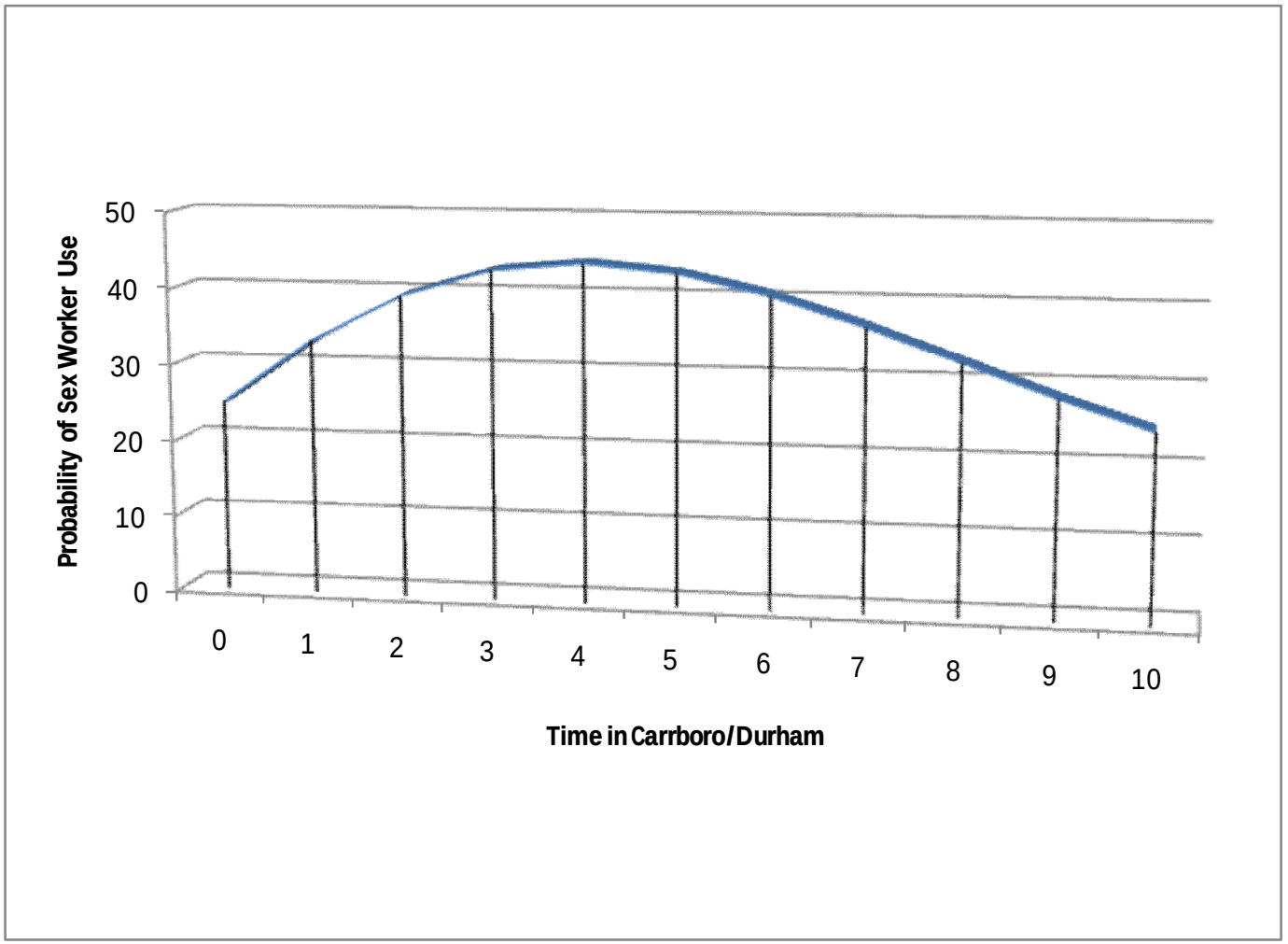

Figure 4: Relationship between neighborhood isolation and likelihood of sex worker use