Neighborhood Social Processes and Older Adult Well-Being: New Results from the Neighborhood Organization, Aging, and Health Study (NOAH)[*]

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EXTENDED ABSTRACT

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BACKGROUND

Extant research indicates that community characteristics – environmental, physical, social – impact upon the health and well-being of community residents (Arum, 2000; Barr, Diez-Roux, Knirsch, & Pablos-Mendez, 2001; Wilson, 1996). For older adults the tenure in and tether to the community may accentuate these associations (Cagney, Browning, & Wen, 2005). Cohesive neighborhoods may provide the opportunity for older adults to maintain community residence far past their ability to live independently; neighbors who shovel sidewalks or shop for groceries may create the "community glue" that facilitates interaction and enhances health. Further, a neighborhood more attuned to the needs of older adults is likely to actively prevent neighborhood deterioration (e.g., dimly-lit walkways, vacant buildings) that further contributes to neighborhood decline.

Neighborhood social process measures of the kind we describe are typically theorized and assessed with a population of families with young children in mind. Through a new data collection effort, the Neighborhood Organization, Aging, and Health Project (NOAH), we develop measures of neighborhood social processes tailored to older adults. We then examine the extent to which these mechanisms affect the self-rated health and social and emotional functioning of older persons.

THEORETICAL APPROACH

We employ theories of social disorganization and collective efficacy (Shaw & McKay, 1969; Sampson, Raudenbush, & Earls, 1997) and the ecological aspects of public space (Jacobs, 1961) to inform our characterization of neighborhood context and to identify any association between neighborhood context and older adult health.

Social disorganization and collective efficacy theories enable us to characterize both the structure and social process features of neighborhood life. Residential stability, poverty, and affluence, as structural characteristics of the neighborhood, may set the stage for neighborhood social processes to take root. The social processes of collective efficacy and physical and social disorder, in turn, may have independent effects on health. Collective efficacy captures the level of trust and attachment characterizing community residents and their capacity for mutually beneficial action. High levels of collective efficacy may translate into a heightened awareness of older adults in the community and a perception that their well-being is a community-level goal. Low levels of physical and social disorder may mean that it is easier for older adults to traverse the area around their homes, completing daily activities and potentially enhancing the likelihood that they remain community-resident.

Ecological theory emphasizes the ebb and flow of public space. In Jacobs' view, densely populated, mixed use neighborhoods draw pedestrians onto the street. Neighborhoods with residential density and diverse, evenly distributed commerce will tend to draw foot traffic across a large proportion of neighborhood streets. Throughout the day, such neighborhoods will be more likely to experience pedestrians traversing city streets on the way to work, the grocery store, restaurants, entertainment venues and other neighborhood destinations. The ecological dynamics generated by diverse, mixed use neighborhoods provide a foundation for effective informal social control of public space through encouraging a steady stream of "eyes on the street." The most effective monitoring of street space comes from what Jacobs calls the "natural proprietors" of neighborhoods—residents and local business owners. Regardless of who is on the street, residents and business owners will take an interest in active streets with increased monitoring as a crucial byproduct.

For Jacobs, then, street activity provides both immediate street monitoring and the social conditions for the emergence of effective informal social control norms, reducing the prevalence of crime. This neighborhood-level social process may be particularly important for older residents, for whom neighborhoods play an increasingly important role. Older adults experience a diminishing radius of daily activity as mobility declines, increasing the salience of the immediate neighborhood. Conditions, such as active streets, that reduce fear and encourage physical activity may have significant consequences for health status.

METHODS

Data
To address our hypotheses we need data sources that provide individual-level outcomes nested in neighborhoods, along with measures that capture individual- and neighborhood-level phenomena. To that end, we combine two data sources: 1) The Neighborhood Organization, Aging and Health Study (NOAH) and 2) the Decennial Census.

NOAH. The sampling design of NOAH relied on the 80 neighborhood subset randomly drawn for the systematic social observation study of the Project on Human Development in Chicago Neighborhoods (PHDCN). The PHDCN used the 1990 U.S. Census data for Chicago to identify 343 neighborhood clusters ("NCs")—groups of 2-3 census tracts that contain approximately 8,000 people. Major geographic boundaries (e.g., railroad tracks, parks, freeways), knowledge of Chicago's local neighborhoods, and cluster analyses of Census data guided the construction of NCs so that they are relatively homogeneous with respect to racial/ethnic mix, socioeconomic status, housing density, and family structure. The NOAH sample was derived from a list of adults 65+ who resided in the 80 neighborhood area. The data were collected in 2006-2007. *Measures* Four measures of neighborhood social context come from these data. The *Collective efficacy* measure was operationalized through combining measures of social cohesion and informal social control. Social cohesion was constructed from a cluster of conceptually related items measuring the respondent's level of agreement with the following statements: 1) People around here are willing to help their neighbors; 2) This is a close-

knit neighborhood; 3) People in this neighborhood can be trusted. Informal social control was tapped through items measuring the respondent's level of agreement with the following: 1) If a child was showing disrespect to an adult, how likely is it that people in your neighborhood would scold that child?; 2) If some children were spray-painting graffiti on a local building, how likely is it that your neighbors would do something about it?; 3) If a group of neighborhood children were skipping school and hanging out on a street corner, how likely is it that your neighbors would do something about it?; 4) If there was a fight in front of your house and someone was being threatened or beaten, how likely is it that your neighbors would break it up?; 5) How likely is it that neighborhood residents would organize to try to do something to keep the fire station open? The eight items were combined to form a single scale of collective efficacy ($\alpha = .80$). The *Collective Efficacy for Older Adults* measure is meant to draw out the same components of social cohesion and informal social control but to do so with the age and life course of older adults in mind. The measure was developed with the following: 1) Older people in this neighborhood are treated with respect; 2) Younger adults and children generally know who the older people in the neighborhood are; 3) Older people in this neighborhood socialize with younger adults as well as people their own age; 4) If you were sick, you could count on your neighbors to shop for groceries for you; 5) If an older person in your neighborhood was being threatened by a group of teenagers, how likely is it that neighborhood residents would intervene on his or her behalf?; 6) If there was a heat wave, how likely is it that people in your neighborhood would check on older or more vulnerable residents?; 7) If there was a snow storm, how likely is it that people in your neighborhood would help to keep the sidewalks and other public spaces clear?; 8) If there was a problem in the neighborhood that affected older adults, like crumbling sidewalks or unsafe parks, how likely is it that people in the neighborhood would help to get the problem corrected? The eight items were combined to form a single scale ($\alpha = .81$). The *Public Space Viability* measure, reflecting Jacobs' notion of public contact and neighborhood engagement, combines assessments of neighbors spending time outside their homes and neighbors monitoring the street from their windows ($\alpha = .63$). The *Physical and Social Disorder* measure asks respondents about litter, graffiti, public drinking and drug use and sales ($\alpha = .71$).

   Decennial Census. Census data allow us to construct measures of neighborhood socioeconomic structure and composition. *Measures* Three neighborhood-level measures come from these data. The first is a *structural disadvantage* factor score which includes percent below poverty, percent black, percent female-headed households, percent unemployed, and percent in a low-wage occupation. The second is a *residential stability* factor score which includes the percent living in the same house since 1985 and the percent of owner occupied dwellings. The third is an *immigrant concentration* factor score which includes percent Latino and percent foreign-born.

Analysis
The clustering of respondents within Chicago's neighborhoods renders standard OLS techniques inappropriate due to the likely underestimation of standard errors. Our analysis strategy employs Hierarchical Modeling (HM) techniques to adjust standard errors for the effects of clustering within neighborhoods. In order to correct independent

neighborhood-level measures of collective efficacy and network interaction/exchange for missing data and measurement error, we use empirical Bayes residuals from a three-level item-response model of the component items of these scales (Raudenbush & Bryk, 2002). We analyze the first 885 cases that have been released by our survey research firm, the National Opinion Research Center (NORC).

We begin with descriptive statistics that characterize our two outcome variables, key covariates of interest, and the study population (Figure 1). For the purposes of this abstract we will focus on the results found in Tables 1 and 2, which are models of self-rated health and the SF-8 general health status measure respectively. Note that the self-rated health measure is one item in the SF-8 composite measure. We analyze them separately for purposes of comparability (self-rate health) and comprehensiveness (SF-8).

RESULTS

Table 1 shows a series of five ordered logit models that predict positive self-rated health. As hypothesized, neighborhood-level disadvantage diminishes self-rated health in older adults. We also observe this in models that incorporate older adult collective efficacy and collective efficacy. The impact of disadvantage is attenuated by social and physical disorder (model 4). Older adult collective efficacy appears to have a greater impact on self-rated health than the conventional assessment of collective efficacy; the odds of being in any category of self-rated heath or above increased by a factor of two with a one unit increase of older adult collective efficacy. The Jacobs' variable, public space viability, does not affect self-rated health in this sample nor does residential stability or immigrant concentration.

Table 2 shows a series of five OLS regression models that predict the SF-8, a comprehensive measure of physical and emotional well-being. Similar to self-rated health, older adult collective efficacy is predictive and appears to have a greater impact that the conventional collective efficacy measure. The role of disadvantage in attenuating health and well-being is only observed when physical and social disorder is present in the model. As with self-rated health, the presence of social and physical disorder is critical to evaluations of physical and emotional well-being. And as above, residential stability and immigrant concentration have no effect on the SF-8 score. Importantly, public space viability does have a significant impact on the SF-8 evaluation ($p < 0.10$); the presence of informal monitoring and interaction contributes to this general sense of well-being.

DISCUSSION

Preliminary results indicate that neighborhood social process measures may benefit from an age-graded approach to their construction. In our analysis the more general measure of collective efficacy was still adequate in its measurement properties and predictive of health, but it did not have the same impact as the measure tailored to older adults. Further analysis is needed to understand the relationship between the two constructs and to determine when and how each should be used in research on neighborhood social context.

Additional analyses will include the entire data set. All 1500 cases have been collected, with final data delivery in November 2007. We expect that these initial data comprise a population that was healthier and potentially more satisfied with neighborhood life than is likely the case in Chicago. NORC has worked diligently to include hard-to-reach cases and their initial assessment of the remaining data indicates that they have been successful in completing cases for a representative group of older Chicagoans. We also are in the process of linking these data to Medicare claims, which will provide a rich opportunity to explore additional health status measures along with utilization.

We will continue to explore alternative specifications of collective efficacy and of Jacobs-informed measures. We also will explore key cross-level interactions between individual-level characteristics, such as gender and race, and our neighborhood-level social process measures.

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Table 1. Ordered Logit Models of Self-Rated Health: Neighborhood-Level Predictors (All Models Control for Individual Level Characteristics)*

Independent Variables	Model				
	1	2	3	4	5
Disadvantage	-.019 *	-.017 *	-.016 *	-.011	-.017
Immigrant concentration	-.004	-.002	-.002	.000	-.004
Residential instability	-.001	.000	.000	.001	-.002
Collective efficacy (older adults)	-	.705 ***	-	-	
Collective efficacy	-	-	.559 *	-	
Disorder	-	-	-	-.639 *	
Public space viability	-	-	-	-	.098

* $p < .10$ ** $p < .05$ *** $p < .01$ (two-tailed tests). Standard errors in parentheses.

*Controls for age, gender, race/ethnicity, marital status, home ownership, education, and reports of loneliness

Table 2. OLS Regression Models of Logged SF-8 Scale: Neighborhood-Level Predictors
(All Models Control for Individual Level Characteristics)*

Independent Variables	Model				
	1	2	3	4	5
Disadvantage	-.002	-.016	-.002	-.004 *	.000
Immigrant concentration	.002	.002	.000	.000	.001
Residential instability	.002	.001	.000	.000	.000
Collective efficacy (older adults)	-	.190 ***	-	-	-
Collective efficacy	-	-	.166 ***	-	-
Disorder	-	-	-	-.180 ***	-
Public space viability	-	-	-	-	.074 *

p < .10 ** *p* < .05 *** *p* <.01 (two-tailed tests). Standard errors in parentheses.

*Controls for age, gender, race/ethnicity, marital status, home ownership, education, and reports of loneliness
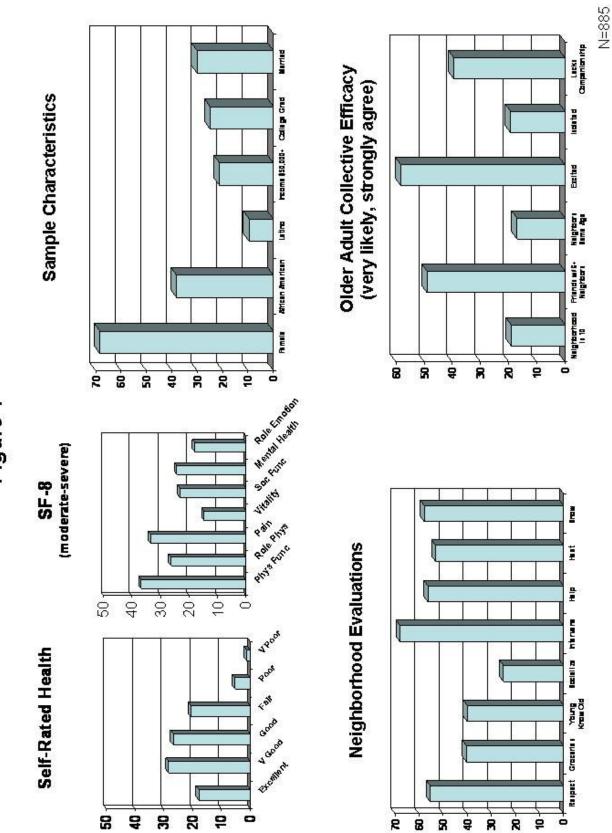
Figure 1