

**The Place of Community in Social Work Practice Research:  
Conceptual and Methodological Developments**

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### Abstract

Community is widely acknowledged as a fundamental aspect of social work practice and this formulation distinguishes social work from other professions. Because of this longstanding tradition, the field needs to make a greater investment in producing scientific knowledge to enable community change and to incorporate community context into practice. This type of research faces numerous challenges related to the complexity of community interventions, the lack of well- developed community measures, the difficulty of implementing experimental designs and the spatial dynamics of communities. However, there are recent substantive and methodological developments that should make it possible to advance research on community as agent, target and context for social work practice.

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### **Introduction**

Community is a ubiquitous concept in social work practice, but as such, it has presented formidable challenges to researchers, especially those who aspire to the goals of evidence based practice. The field, though, must come to terms with these methodological difficulties because community is a distinctive and essential element of social work and is, indeed, part of what distinguishes it from other professions. Moreover, new research techniques and tools have produced important advances in community studies in other fields, but these developments have not sufficiently influenced social work practice research to date. Therefore, this article will identify challenges to building an evidence base for community interventions and describe new research tools that have the potential to advance the state of knowledge in the field.

### **The place of community**

Aaron Rosen assiduously reminded the profession of the necessity to build a particular type of knowledge for practice, which he referred to as “knowledge for control” (Rosen, Proctor & Staudt, 1999). Such knowledge rests on evidence about how change occurs, whether that change produces desired outcomes and, most importantly, how beneficial change can be deliberately produced. The remainder of this article draws upon that framework and focuses on research whose purpose is to build social work knowledge for control with respect to community change. The discussion emphasizes communities that are place-based, such as urban neighborhoods, suburban subdivisions, villages and towns. These localized communities have geographic, psychological and social meaning and referents and they have consequences for the people who live and

work there (Chaskin, 1997). Although these are not the only communities of importance to social work, they are often the context for community practice (Weil, 1996).

With respect to social work practice in community, the question of building knowledge for control is complicated by the fact that community may be the agent of change, the target of change or the context for change. Figure 1 presents a diagram of the various points of entry for research on community change. The central concept of community can be studied as a dependent variable, independent variable, mediating variable or a moderator variable. There are numerous examples of features that have been put forward as essential for healthy, strong, sustainable or effective communities such as: social capital, including bridging and bonding capital (Putnam, 2000; Temkin & Rohe, 1998); community capacity including leadership, governance, and organization (Chaskin, Brown, Venkatesh, & Vidal, 2001); collective efficacy (Sampson, Raudenbush & Earls, 1997); sense of community (Brodsky, O'Campo & Aronson, 1999); social control (Sampson & Groves, 1989); neighboring, amenities and resources (Fuerstenberg, et al., 1999); institutional strength, inter-organizational relations, civic participation (Daley & Marsiglia, 2000); and stressors and violence (Buka, Stichick, Birdthistle & Earls, 2001), among others. Any and all of these may be the targets of social intervention. Practice research needs to demonstrate how interventions with communities can produce changes in these important attributes and processes. Moreover, knowledge for control requires evidence regarding the mediating processes that enable this change so that the exact methods can be specified and replicated.

On the right hand side of Figure 1, the symbol labeled “people” indicates that it is also important to demonstrate how community change affects the well being of

individuals. In fact, the ultimate goal of many community change efforts is to promote the health of the population, achieve employment gains, or reduce problem behaviors or conditions. It is also vital, as shown in Figure 1, for research to demonstrate the mediating processes through which community impacts upon individual outcomes. Knowledge about the workings of mediating processes in communities will allow interventions to be crafted toward greater precision and effectiveness. Community conditions or processes may also moderate the impact of direct practice interventions, and research is needed on the circumstances under which interventions are more or less effective and why.

Moreover, it is incumbent upon social work research to uncover deleterious community conditions that may appear to be individual risk factors. Interventions targeted at individuals' risk factors may be less effective and efficient than those that eliminate or reduce the root causes in the context (Shinn & Toohey, 2003). Finally, as symbolized by the reverse arrow in Figure 1, community change may be produced as a result of individual change, especially in the aggregate. For example, movement of residents in and out of communities may change the attributes and processes of the community, especially when that movement produces shifts in the age, socio-economic status, ethnicity, culture or other demographics which may in turn transform norms, expectations, relationships and practices within the community. Furthermore, individual residents acting on their own or as groups are powerful sources of community change.

## **Challenges of research on community and social work practice**

The above model reveals the pivotal place of community in social work practice research. However, research to inform this practice has been hampered by a number of practical, technical and theoretical problems including:

- *Defining community boundaries.* The specification of community as a unit for study and action has been unclear and problematic. Researchers have either been vague about the units that constitute the community or have relied on arbitrary statistical definitions that do not represent the importance of place. These ambiguities have undermined the authenticity and statistical power of community studies and biased downward the estimates of community effects.
- *Specifying interventions.* Community interventions have been difficult to specify so that they can be replicated. The fact that community interventions have many actors, complex objectives and generally call for community participation has made them challenging to document. They tend not to comply with the prevailing template for researchable interventions that can be captured in protocols and evaluated for fidelity and compliance.
- *Developing community measures.* Research cannot move forward without careful measurement, but methods to measure community attributes and processes have not been given as much attention as the psychometrics of individual behavior. Community researchers have tended to invent their own tools, making studies difficult to compare and build into an evidence base.
- *Applying multi-level statistical models.* Statistical models have not always been optimal for community level data. Until recently, statistical tests of

community effects were either reduced to models of individual perception, or ecological correlations among aggregated counts or rates. Neither type of model addressed the vital questions about places as ecological units, residents as individuals and the relationships among them. Moreover, one-level models often violated statistical assumptions.

- *Establishing the counterfactual.* Community research has also foundered on the grounds of causal attribution. Many of the principles of solid research design that support causal inference have been impractical in the study of community interventions. The gold standard of randomized experiments was virtually untried until recently, and the search for community effects has been mired in concern about selection bias and simultaneity.
- *Assessing spatial and geographic processes.* Community research has been essentially divorced from where the communities are actually located, and what processes within or between them are fostered or impeded by space or distance. Geography has been virtually unaccounted for in most studies of community intervention and influences of proximity and distance have been overlooked.

Lest these seem like insurmountable obstacles, the development of tools to overcome these challenges has taken off in recent years. Fueled by concerns about social exclusion and community sustainability, advances in computing power and the hard work of practitioners who believe in the importance and possibilities of community, there are a number of conceptual and technical breakthroughs of which the field should be aware. These are discussed below.

## **Defining community and neighborhood boundaries**

Research on communities must establish boundaries for the purposes of data collection and analysis. A common method of doing this when multiple communities are being studied has been to rely on statistical definitions of community, such as census tracts, school zones or zip codes. A limitation is that these units are unlikely to be identical to the spaces that influence residents' lives or the actual boundaries for action. Alternatively, in case studies of single communities, there is often a lack of specification of community boundaries at all. Actions and actors are described, but it is not clear where they are located and how they relate to the entire area that is the community. The problem is that if the community unit is not correctly specified for the purposes of the research, the effects will be obscured. Generally speaking, much research on community has used areas that are too large to be effective in terms of social intervention or effects. Community effects are thus biased downward. Moreover, it is important for researchers to realize that the community boundaries may change over time, or vary depending upon the purpose to which they are being put.

Advances in Geographic Information Systems (GIS) technology make it possible to use information from community members or other stakeholders to construct the boundaries of communities and to collect and analyze data that fit these socially constructed spaces. For example, Coulton, Korbin, Chan and Su (2001) asked random samples of neighborhood residents to draw out their personal views of their neighborhoods on GIS generated maps. These maps were digitized and analyzed using spatial statistics. Figure 2 displays one of these communities in which the residents' maps have been overlaid. The area in gray is a common area included by all residents' maps.

The circle has a radius the size of the average neighborhood map, and is drawn around the centroid of all the maps. Community units defined in these ways had different attributes than their respective census tracts or block groups.

Another approach to defining communities uses GIS to identify patterns of intersecting, pedestrian streets that are deemed to be areas of social interaction. Grannis (1998) has demonstrated that these natural breaks represent boundaries across which social interaction diminishes. He has used GIS to examine hypotheses about space and social organization and to define community units for further analysis.

The use of GIS tools to uncover socially meaningful boundaries can make community research more authentic, accurate and replicable. By examining resident perceptions, street intersections and geographic attributes, the research can link social, economic and behavioral data to community areas that are defined from varying perspectives. Such community units can also be linked to specific interventions, projects or actions that test hypotheses about practice. Vague or inappropriate boundaries undermine the power and generalizability of community research, but GIS combined with local perceptions can be used to derive clear and relevant definitions of community units.

### **Fidelity and replicability of community interventions**

Community interventions pose challenges for research because they are often implemented through a participatory action process that is incremental and emergent by design. Numerous individuals and groups may be involved in a complex and diverse set of activities, which are difficult to document and measure in sufficient detail so that they can be replicated. Although these initiatives are typically guided by a set of principles and draw upon practice experience, the tacit knowledge of members of the community is

often an important ingredient in shaping the intervention. Converting these sources of knowledge to an intervention plan that can be studied has proven daunting.

Several approaches to evaluation have the potential to improve the precision with which community interventions are described and documented while holding fast to the principles of participation. The Aspen Institute's Roundtable on Comprehensive Community Initiatives for Families and Children has issued a series of reports that describe a "theory of change evaluation" method (Connell, Kubisch, Schorr & Weiss, 1995; Fulbright-Anderson, Kubisch & Connell, 1998). In this technique, all participants in an initiative are solicited for their implicit theory about how they expect to achieve the desired improvements in their community. The change process is laid out in a series of early, interim and ultimate outcomes along with benchmarks that can be measured or observed. Often the benchmarks are ones that the community can be involved in monitoring. The so-called outcomes are changes that in other parlance may have been labeled inputs or process measures, but they are occurrences that are believed to be necessary and sufficient to push the process of change in the desired direction (Weiss, 1995).

The logic model and the measures that are made on each outcome can provide the type of detailed documentation needed for specifying replicable interventions. For example, the implementation of the Cleveland Community Building Initiative was studied in four neighborhoods using measures derived from a theory of change (Milligan, Coulton, York & Register, 1998). The fact that the same measures were applied in each place allowed comparison across the neighborhoods of the degree to which the intervention had fidelity to the theory. Similarly, some approaches to empowerment

evaluation involve careful documentation and monitoring of the intervention. Community participants are empowered through contributing to specification of objectives and monitoring results (Fawcett, et al., 1996; Eng & Parker, 1994). The internet can facilitate the collection of comparable documentation data from multiple participants and communities by imposing a uniform web-based template of definitions and criteria (Fawcett et al., 2003).

These illustrations point to the feasibility of studying comparable interventions in multiple communities while at the same time maintaining the principle of community participation. These methods should allow the field to move away from its reliance on the single and unique case study approach. Although case studies are rich in context and texture, they are limited in the degree to which they build the evidence base for practice. To cumulate knowledge, the field must be able to compare across replications and to determine when interventions are alike or different in important ways.

### **Measuring community attributes and processes**

Too much of the research on local communities relies upon compositional measures from the decennial census. Numerous studies claim to test community effects even though the only aspects of the community represented in the empirical models are socio-economic status and demographic make up of the population (For a review, see Ellen & Turner, 1997). However, to study community interventions, an array of social, economic and physical structures and processes need to be measured. Social work researchers must invest considerably more resources toward developing relevant and accurate measures of those aspects of community that are relevant to practice. Few currently available instruments capture what makes a community a desirable place to

raise children, or enables an area to demand its fair share of services, maintain responsive institutions, cope with threats or disasters or other such signs of a vital and healthy place. The term “ecometrics”, coined by Raudenbush and Sampson (1999a) conveys the importance of raising community measurement to greater prominence. It needs to garner the same attention that has led to the large inventory of well-validated instruments pertaining to individual behaviors, abilities, attitudes and so forth, which rest on a strong foundation of psychometric theory and methods. The measures available for communities are not nearly as well established.

There are several promising developments, though, regarding measurement of communities. These advances rest on the recognition that community concepts cannot be treated simply as if they were perceptions or characteristics of individuals. For example, it is now understood that special attention needs to be given to establishing the reliability of aggregate measures. When community residents respond to a survey and their responses are combined to represent an attribute of their community, the reliability of the individual measure is a necessary but not sufficient condition for a reliable measure of the aggregate. In other words, it cannot be assumed that some concept that is well measured on individuals can be summed or averaged to capture that aspect of community. More appropriately, generalizability theory can be applied to calculate the reliability of these aggregate measures (O’Brien 1990). Reliability coefficients can also be modeled equivalently through hierarchical linear modeling (Raudenbush & Bryk, 2002). The aggregate reliability coefficient is defined as:

$$\sum [\tau_{00} / (\tau_{00} + \sigma^2/n_j)] / J$$

where  $J$  is the number of neighborhoods,  $n$  is the sample size in each neighborhood,  $\tau_{00}$  is the proportion of variance between neighborhoods and  $\sigma^2$  is the proportion of variance within neighborhoods.

The reliability of the aggregate measure depends upon the number of respondents per community, the number of communities and the ratio of variation between and within communities. All else being equal, when community members have a fairly high level of agreement about an aspect of their community on which they are reporting, there will be high reliability for the measure. When there is poor agreement, it raises the possibility that there is really more than one community being represented in the community sample, or that the items are ambiguous enough that they mean different things to different people. For example, Coulton, Korbin & Su (1996) queried random samples of residents within 20 block groups on 10 dimensions of their neighborhood as a social environment for raising children. Generalizability coefficients confirmed the reliability of many of these scales when 20 respondents per block group were used as informants. Several scales though, showed poor aggregate reliability, even though they were based on scales that displayed good internal consistency reliability (i.e. Cronbach's alpha) at the individual level.

Contributing significantly to the advancement of community measurement theory and practice has been the massive undertaking of the Project on Human Development in Chicago Neighborhoods. This project has invested heavily in the development and validation of novel methods and instruments in over 380 neighborhood units (Raudenbush & Sampson, 1999). The multidisciplinary team of researchers has developed techniques of systematic social observation of block faces, using innovative

approaches to videotaping and coding that are designed to capture mediating processes (Sampson & Raudenbush, 1999; Sampson 2002). These have been combined with a wealth of geocoded administrative records and with resident surveys that can be used to expand upon and cross-validate the observations. Observational tools and administrative records have been used effectively for neighborhood research in other cities, but never on such a grand scale (e.g. Perkins & Taylor, 1996; Caughy, O'Campo & Patterson, 2001).

Finally, there are several collaborative efforts to make data and measures that are suitable for community analysis more readily accessible. The National Neighborhood Indicators Partnership (NNIP) is comprised of organizations in 35 cities that compile measures of community well being ([www.urban.org/nnip](http://www.urban.org/nnip)). NNIP promotes systematic and ongoing collection, dissemination and use of indicators that go beyond the usual census based measures and incorporate observation, administrative records, surveys and other data sources (Coulton & Hollister, 1998). The member cities all make the indicators available for use in social change efforts and support the fundamental democratization of information. Another effort to advance the field of community measurement is an online catalog provided by the Aspen Institute's Roundtable on Comprehensive Community Initiatives for Families and Children ([www.aspenmeasures.org](http://www.aspenmeasures.org)). This searchable inventory of measurement tools grew out of the groups' multi-year investigation into the challenges of evaluating community initiatives. The group concluded that investment in measurement was a necessary first step toward building credible knowledge about how interventions could change communities.

### **Multi-level designs and analysis**

In crafting social interventions, it is vital to be able to distinguish between the influence of individual, micro-level attributes or risk factors and effects of the larger context. It would be ideal to know what individuals bring with them regardless of context, which outcomes are mainly a consequence of the context to which individuals are exposed, and which are due to particular combinations of individual attributes and context. In fact, achieving a beneficial articulation between persons and their environments has been an organizing principle of social work. The availability of tools and methods for multilevel analysis should facilitate research on community context and practice (Teachman & Crowder, 2002; Raudenbush & Bryk, 2002).

Without the benefit of multilevel modeling, research on contextual effects has often been reduced to the individual level in which community is represented by linking neighborhood variables to person level data (e.g. Brooks-Gunn, Duncan, Klebanov & Sealand, 1993). Actual places are not specified, but represented as variables that describe selected characteristics of persons' census tracts, such as the poverty rate or presence of middle class neighbors. Such models are problematic on both substantive and statistical grounds. When community is specified as a set of individual-level variables, the place is not represented as an organic whole. Moreover, to the degree that persons are nested within communities, statistical assumptions of independence are violated. Alternatively, there are also limitations of models that aggregate individual outcomes to the census tract or other geographic unit in order to study community effects (e.g. Coulton, Korbin, Chow & Su, 1995). Although suggestive, ecological correlations cannot reliably demonstrate the influence of communities on individual residents.

Multilevel modeling, now readily available, allows researchers to examine individual and community influences within one model. These statistical models are based on nested research designs. In the case of community research, residents (level 1) are nested within communities (level 2). Communities might also be nested within larger regions such as labor markets or states (level 3). The total variance in any outcome can be decomposed into each level, for example, the variance that is between communities and within communities. At each level, a structural model can be specified and estimated. The structural models may include variables at both levels that are hypothesized to influence the dependent variable. If communities are assigned to treatment and control conditions, the impact can be modeled at level 2 as a dummy variable. If individuals have been assigned to treatment and control conditions, this could be modeled as a dummy variable at level one. Cross-level interaction effects are tested to determine whether the effects of variables at one level are moderated by variables at the other level. It is also possible to explore whether factors have cross-level indirect effects, which may be an important research question when community intervention is hypothesized to benefit individuals through changing personal risk and protective factors (Raudenbush, S. & Sampson, S., 1999b).

Hierarchical Linear Modeling (Raudenbush & Bryk, 2002) and its associated software (HLM) is the most commonly used approach to multi-level modeling in social work research. In the basic two level model, the statistical model for level 1 is:

$$Y_{ij} = \beta_{0j} + \sum_{q=1}^Q \beta_{qj} X_{qij} + r_{ij} \quad r_{ij} \sim N(0, \sigma^2)$$

where  $Y_{ij}$  is the outcome variable for respondent  $i$  in community  $j$ .  $\beta_{0j}$  is the mean of the outcome score for community  $j$ .  $X$  represents the individual level

predictors numbered from 1 to Q. Thus,  $X_{qij}$  is the  $q^{\text{th}}$  predictor, for respondent  $i$  in community  $j$ ;  $\beta_{qj}$  is the slope of the  $q^{\text{th}}$  predictor for site  $j$ . The  $r_{ij}$  are errors assumed to be independent and normally distributed with a mean of 0 and variance,  $\sigma^2$ .

Level 2 attempts to explain the between-community variation using a set of explanatory factors that are community specific characteristics and processes according to the following statistical model:

$$\beta_{hj} = \gamma_{h0} + \sum_{k=1}^K \gamma_{hk} W_{kj} + U_{hj} \quad U_{hj} \sim N(0, \tau_{hh})$$

where  $h$  is numbered from 0 to Q communities,  $W$  represents community factors numbered from 1 to K, and  $\gamma_{hk}$  represents the effect of the  $k^{\text{th}}$  community factor on the  $h^{\text{th}}$  parameter from level 1. In addition, there is an unexplained random effect ( $U_{hj}$ ) for each ( $j^{\text{th}}$ ) community.

The complete specification yields a large and complex parameterization including full cross-level interactions (Raudenbush & Bryk, 2002). The equations can be estimated simultaneously using restricted maximum likelihood by the HLM software.

Multilevel modeling is an effective tool to identify the degree to which community features may promote or undermine the effectiveness of social work interventions with individuals and families. This is vitally important, because interventions are often piloted without regard to where the subjects live. Yet, when successful interventions are taken to scale, they are going to be implemented in many communities that have particular features and circumstance. Community variation is one

possible reason why interventions that work in carefully controlled demonstrations may be more or less effective elsewhere (Hawkins et. al., 1992).

### **Establishing the counterfactual**

Although the question of what is solid evidence for practice is open to debate, many proponents see the randomized experiment as the gold standard. The reason is that a plausible counterfactual is needed to prove a causal relationship. The counterfactual represents what would have happened to the community or its residents in the absence of a condition or intervention of interest (Shadish, Cook & Campbell, 2002). A control group, created through random assignment, is arguably the best approximation of this counterfactual. Studies of community interventions or effects have faced serious challenges in the establishment of the counterfactual (Hollister & Hill, 1995; Granger 1998). Case studies and observational designs have predominated, leading to the inability to rule out selection bias, reverse causality and other threats to causal inference. However, the ideal of random assignment is very difficult to achieve when communities are the unit of analysis, either as independent or dependent variable. There are several recent developments, though, that hold promise in this regard.

Although it has been problematical to imagine the random assignment of communities to treatment and control groups, it is not unrealistic to think of community comparisons as the basis for a counterfactual. There is growing interest in whether the effectiveness of interventions can be studied using a combination of matched comparison communities and time series designs. By combining these techniques, communities that receive an intervention can be matched with comparison communities and tracked on important outcomes over a baseline period. Following the onset of the intervention, they

can be tracked on these same outcomes going forward. An interrupted time series is a stronger design than a simple pre-post test, because the baseline trend can serve as a counterfactual (Bloom, 2003). By adding the matched comparison communities, the trend is not only observed in intervention communities but can be compared with trends in communities without the intervention, eliminating history and maturation as alternative explanations for change (Shadish, Cook & Campbell, 2002).

In the community development field this approach has been tested using a difference in differences model (Galster, Temkin, Walker & Sawyer, 2003). In three cities, trends in housing values were compared for intervention neighborhoods and other neighborhoods that were not part of the community development initiative. The authors concluded that the comparison neighborhoods provided a better counterfactual when there was a longer pre-intervention time series available for comparison. Moreover, the matching was more effective when the baseline trend was stable enough to be clearly ascertained.

A similar approach has been successfully applied in the Jobs Plus initiative (Bloom, 1996). Treatment and comparison public housing communities were compared on employment outcomes before and after an intervention that was geared toward transforming the community into one that supported employment. Time series analysis was made possible by measuring employment trends in these communities for multiple years prior to and after the intervention to determine the difference in differences. The comparison of each community with itself over time through repeated measures presumably controls for unobserved, non-time varying, differences in the treatment and comparison communities other than the intervention, thus presenting a more compelling

counterfactual than case studies or simple pre and post test designs. These methods do require archival data to create a historical time series that is long enough to identify the trend, and thus may not be feasible in some instances.

A refinement of the matching algorithm involves matching multiple block groups or census tracts pulled from an entire region or large city to the block groups or census tracts that are within a target area for intervention. Working with small block groups rather than trying to find a match for the entire target area provides more degrees of freedom and many more units to pick from. The matches can be made using a number of characteristics, based either on direct matching or a propensity score model (Fraser 2004). Thus, the design does not require finding matches for target areas as a whole, which might be quite infeasible, but for the many (smaller) units of geography within an intervention community. Researchers at MDRC have explored applying this technique to the evaluation design for neighborhood employment interventions (Seith, Verma, Bloom & Galster, 2003). Their findings suggest the need for having sufficient numbers of neighborhood units to work with and an extensive array of characteristics on which to make a solid match. Without that, it is possible that heterogeneity (or error variance) within the treatment and comparison communities may overwhelm the power of any practical comparisons. The feasibility of using matched comparison communities to evaluate interventions to promote maternal and infant health has also been explored with some success in Baltimore (O'Campo, Caughy, Aronson, Xue, 1997).

Another type of community research question that calls for design improvements pertains to studies in which community is the independent variable. These investigations attempt to determine the effects of communities on the people who live there or to isolate

the moderating effect of community on the success of interventions. These types of studies usually suffer from internal validity problems due to selection; that is, persons either choose or are constrained to be in particular communities. This leads to an undeterminable correlation between unmeasured personal characteristics and neighborhood characteristics. Another internal validity problem of these studies is simultaneity or reverse causality; this occurs if individuals choose communities as a result of their outcomes, such as when employment success allows individuals to choose better neighborhoods rather than vice versa. Up until recently, the only tools researchers had at their disposal to correct for these biases were imperfect statistical adjustments (Glazerman, Levy & Myers, 2003; Angrist, Imbens & Rubin, 1996).

Moving to Opportunity (MTO) is an important experiment that tackles these problems head on and establishes the feasibility of random assignment as a tool in community research. The MTO experiment was implemented in five cities to determine whether public housing residents' outcomes could be improved by enabling them to move to low-poverty census tracts. Volunteers were randomly assigned to one of 3 conditions: an MTO treatment group that was offered housing vouchers and mobility counseling to relocate to neighborhoods with poverty rates of less than 10 percent; a Section 8 comparison group that was offered rent vouchers to move anywhere outside of public housing; or a control group that was not offered vouchers at all. Findings are beginning to emerge in several early reports for each city (Ladd & Ludwig, 2003; Ludwig, Duncan & Ladd, 2003; Katz, Kling & Liebman, 2003; Leventhal & Brooks-Gunn, 2003; Hanratty, McLanahan & Pettit, 2003; Rosenbaum, Harris & Denton, 2003) and in a combined interim five-year impact evaluation (Orr, et al., 2003). Overall, the

results are mixed. The treatment group shows large improvements in sense of safety and neighborhood satisfaction, but there are only modest impacts on some aspects of health and behavior, and no effects on parental employment and income.

A concern is that these early results may lead to the conclusion that neighborhoods have little effect on outcomes for families and children. However, MTO also illustrates that random assignment of individuals to a mobility experiment has some limits in terms of what can be learned about community effects. Most importantly, since the treatment group was assigned to a low poverty rate, not particular places, the study does not actually permit a test of the effects of other community characteristics and social processes. Moreover, even the influence of the poverty factor is diminished because many families in the treatment group actually did not relocate to a low poverty neighborhood, as the lease up rate was only about 50 percent (Orr, et al., 2003). Additionally, the new neighborhoods, although lower in poverty, tended to still be in the central city rather than the suburbs, implying a restriction of range on neighborhood quality. Nevertheless, the massive and successfully implemented MTO experiment represents a very important advancement in rigorous designs to study residential relocation and the effects of neighborhood poverty.

### **Spatial patterns and processes**

Most social work practice research to date treats place-based communities as independent entities without explicit investigation into the role that proximity or contiguity plays. Within communities, conditions are assumed to be constant, rather than varying depending on geographic location. However, social processes and services within and between communities may be affected by geography, and interventions may be more

or less effective depending on their spatial properties. Recently available spatial statistics and GIS tools can be used to investigate these patterns.

A potentially useful application in social work research is the determination of the role that distance plays in the success of community interventions or well being of community residents. Using GIS tools, the distances among residents or local organizations or between communities and other places can be calculated and used in various analyses of social interventions or outcomes. For example, several studies have used GIS tools to develop measures of the geographic distance to regional job openings in inner city neighborhoods (Coulton, Leete & Bania, 1999; Allard & Danziger, 2002). These indexes of job access have been shown to potentially moderate the success of welfare to work programs. Also, distance matrixes to services have been used to construct service access measures. Using this technique, researchers have shown that living in a neighborhood with better geographic access enables individuals to more appropriately utilize services (Allard, Tolman & Rosen, 2003). Geographically specific business information also has been used to demonstrate that access to amenities such as shopping and personal services is restricted in African-American neighborhoods, possibly to their detriment (Helling & Sawicki, 2003). Improved geographic access to jobs, services and amenities could serve as important outcome measures for community interventions.

Spatial statistics can also be used to investigate the degree to which phenomenon are spatially clustered. Local area autocorrelation statistics (Moran's I) and contiguity analyses can reveal whether particular events are spatially related (Griffith, 1987). For example, Sabol and Mikelbank (2003) examined spatial clustering and interaction of

sellers and purchasers of illegal drugs across neighborhoods in Cleveland (See Figure 3). They used GIS software and SpaceStat (Anselin, 1992) to calculate local autocorrelation statistics and weighted measures of contiguity between the residential neighborhood and the neighborhood in which the drug offense was committed. The areas with darker colors in the map are indicative of clusters of buying and selling activity. The bar charts show whether the buyers of drugs come from nearby or far away to engage in these behaviors. Breaking up such negative spatial patterning might be an important and measurable outcome of community interventions.

Another way that the spatial locations of communities can be taken into account in research is through testing spatially lagged models. These models also use spatial contiguity matrices and weights developed from GIS data and have been applied in studies of violence in Chicago neighborhoods (Morenoff, Sampson & Raudenbush, 2001). Their spatial dependence analysis demonstrated that relative distance to other violent neighborhoods was influential over and above internal neighborhood conditions in explaining violent behavior.

Determining the pattern of geographic dispersion of an outcome is another application of GIS that might be fruitful for studying community interventions. For example, neighborhood employment interventions have worked to link inner city communities with suburban employers so that neighborhood residents can travel there to get better jobs (Reardon 2001). An outcome such as employment dispersion can be quantified using a spatial descriptive statistic, the standard deviation ellipse (SDE). This technique was illustrated by Coulton, Bania, Leete and Cook (2001) who examined the geocoded employer addresses of former welfare recipients (See Figure 4). The SDE,

computed using Crime Stat v. 1.0 (Levine, 2000), represented the degree to which these addresses were dispersed in latitude and longitude from a geographic centroid. Results showed that the African American residents were relatively isolated within the metropolitan labor market compared to white residents. Another example of a spread measure as an outcome of intervention comes from a study of the impact of supported housing on community crime patterns. Galster, Petit, Santiago & Tatian (2002) used GIS to calculate an index of the degree to which crime incidents radiated around supported housing developments. They demonstrated that the dispersion of crime depended on how the housing was situated within the neighborhood. In this case, a spatial index was used to study the effect of varying practices with respect to supported housing, a community intervention.

## **Conclusion**

Social workers and others who work with and on behalf of communities are up against a general skepticism about whether disadvantaged communities can change for the better. Yet, there are thousands of local initiatives that are trying to reinvigorate and restore communities on the ground and the concept of building community resonates loudly here and around the globe (Naparstek & Dooley, 1997). What is needed is a solid knowledge base of community change, built on convincing evidence. New tools are becoming available every day to enhance the quality and impact of community research; social work researchers need to take better advantage of them. It is important to move the field toward more rigorous research designs, drawing upon matching, time series and other principles of experimentation. Statistical analyses to examine community influences ought to be multi-level and spatial statistics should be incorporated into community

intervention studies. Concerted efforts must be made to engage in more systematic and comparable methods of documenting community interventions and boundaries.

Moreover, the field needs to invest in ecometrics, not just psychometrics.

Moving forward on a community research agenda will require more collaborative work across communities towards several objectives. Comparisons require that similar interventions be tested in multiple places, and a single researcher can seldom implement this alone. Moreover, community intervention research depends upon collaboration with community partners built on established relationships and deep knowledge of place. Also, to implement strong designs in which communities are matched or profiled beforehand, there is a need for an infrastructure of community measures and data. It is seldom feasible to establish a baseline trend, for example, unless systems for gathering and storing data about communities are in place in various locales. Finally, collaboration is needed to craft interventions that use common concepts and techniques, so that similar interventions can be tested in multiple places. This is necessary to allow knowledge to be cumulative and a knowledge base to be built.

Social work has deep roots in community and, more than other professions, has given voice to the profound importance of local communities for human development and social justice. As such, social work should be the leader in advancing scientific knowledge about how and why communities can change. This type of “knowledge for control”, which Aaron Rosen has described, is challenging to produce where communities are concerned (Rosen, 2003); but there are now many new tools available that, if applied, will allow the field to move forward.

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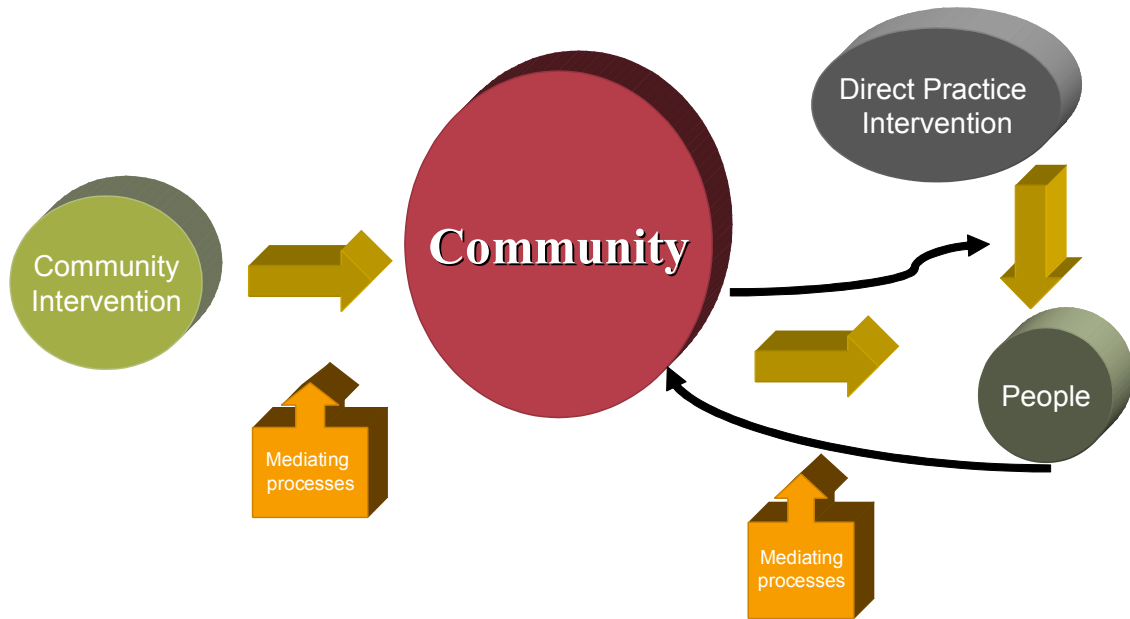
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## The Place of Community

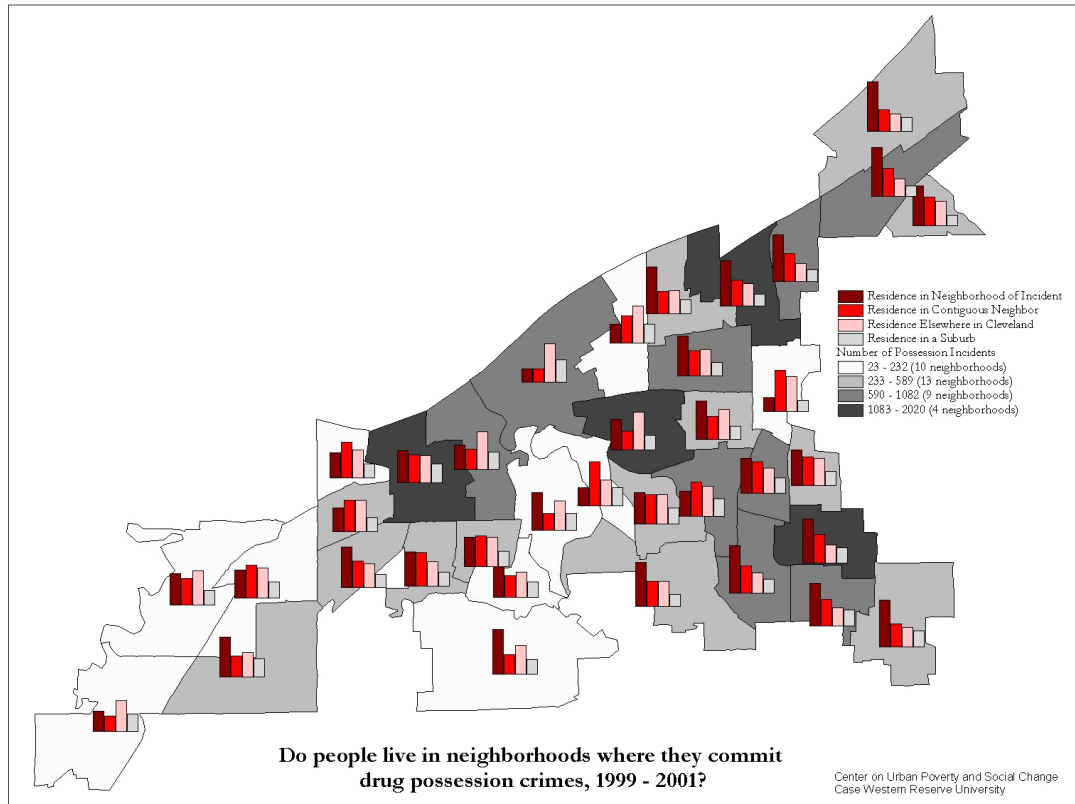


MANDEL SCHOOL OF APPLIED SOCIAL SCIENCES

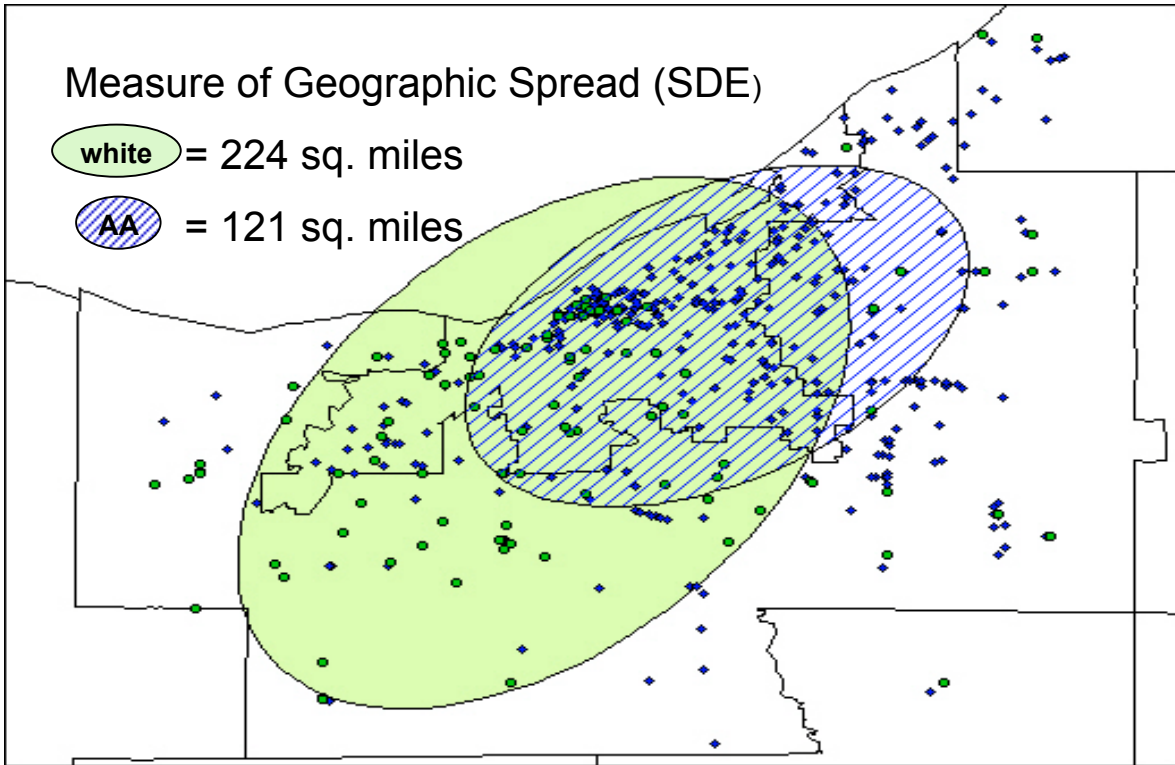
**Figure 1: Model of Community in Social Work Research**



**Figure 2. Using Resident Perceptions for Neighborhood Boundaries**



**Figure 3. Example of clustering and contiguity in spatial analysis**



**Figure 4. Example of spread of employment locations using the Standard Deviation Ellipse**