

Spring 2020

## **Sense of Community among Independently Housed Individuals with Serious Mental Illness**

LaDonna L. Gleason

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Sense of Community among Independently Housed Individuals  
with Serious Mental Illness

by

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Bachelor of Arts  
University of South Florida, 2013

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Submitted in Partial Fulfillment of the Requirements

For the Degree of Master of Arts in

Psychology

College of Arts and Sciences

University of South Carolina

2020

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## DEDICATION

To my dad, Terry Noble – I miss you. Thank you for teaching me to question everything and to pursue the answers as far as they go.

## ACKNOWLEDGMENTS

With sincere gratitude, I would like to acknowledge several people, without whom this would not have been possible: my guys – Jason, Tyler, & Andrew, who gave me time and space and love and laughter to complete this work; my cohort – Ariel, Haylee, Jess, & Van, who have shared the stress, struggle, and triumph of this thing called grad school and made it all more possible; my committee member – Suzanne, who gave her time and expertise, and made this work better with every comment and suggestion; and of course, my mentor – Bret, who encouraged me to think big, but step surely, even if that meant building smaller bridges. The path is long and the way forward, for me, takes all of you. I thank you all.

## ABSTRACT

People with serious mental illness often struggle to fully integrate into their communities and feel accepted within their own neighborhoods. Prior research suggests that people who participate in supportive or supported housing programs may benefit from support designed to facilitate integration within one's community. However, little prior research has explored how sense of community is constructed for individuals who live in the community without benefit of support programs. With so little research concerned with sense of community for those without housing services, there exists a large gap in the literature for this population. The purpose of the current study was to add to this literature by examining the relationships between individual and neighborhood experiences and sense of community for people with serious mental illness who live independently in the community without supported housing services. Factors proposed to be important to sense of community for individuals living independently in the community with serious mental illness were housing-related variables (e.g., length in current housing, history of homelessness, and housing instability), psychiatric distress, perception of social support, relations with neighbors, and the neighborhood social climate. These factors were examined hierarchically as levels of analysis based on proximity to the individual using a hierarchical regression analysis. The full regression model revealed that positive relations with one's neighbors and a neighborhood social climate that is perceived as accepting, significantly and positively predicted sense of community among people with serious mental illness who live independently in the community without benefit of support

services. This study adds to the growing body of literature that highlights the importance of social ecological factors for establishing a felt sense of community within one's neighborhood. Policy shifts that incorporate mental health programming with an eye toward the health of neighborhoods and communities could go a long way toward helping people with serious mental illness enjoy a sense of belonging and community where they live.

## TABLE OF CONTENTS

DEDICATION .....	iii
ACKNOWLEDGEMENTS .....	iv
ABSTRACT .....	v
LIST OF TABLES .....	ix
LIST OF FIGURES .....	x
CHAPTER 1: INTRODUCTION .....	1
1.1 Overview .....	1
1.2 Sense of Community within Housing Models .....	3
1.3 Gap in the Literature .....	5
1.4 Factors Affecting Sense of Community .....	7
1.5 Organization of analyses by proximal vs. distal levels .....	13
1.6 Study Aims & Hypotheses .....	15
CHAPTER 2: METHOD .....	17
2.1 Procedures .....	17
2.2 Measures .....	18
2.3 Data Analytic Plan .....	22
CHAPTER 3: RESULTS .....	28
3.1 Demographics .....	28
3.2 Analyses .....	29
CHAPTER 4: DISCUSSION .....	35



4.1 Main Findings .....	35
4.2 Discussion by Study Aims and Hypotheses.....	37
4.3 Salience of Proximal vs. Distal Factors .....	41
4.4 Limitations and Directions for Future Research.....	42
4.5 Conclusions.....	43
REFERENCES .....	45
APPENDIX A: SENSE OF COMMUNITY .....	55
APPENDIX B: RESIDENTIAL HISTORY.....	56
APPENDIX C: BRIEF SYMPTOM INVENTORY.....	57
APPENDIX D: INTERPERSONAL SUPPORT EVALUATION LIST-12 .....	59
APPENDIX E: NEIGHBOR RELATIONS .....	61
APPENDIX F: NEIGHBORHOOD SOCIAL CLIMATE .....	62

## LIST OF TABLES

Table 2.1 Rates of item-level missing data.....	26
Table 3.1 Correlation coefficients for regression predictors and outcomes .....	32
Table 3.2 Summary of covariates for hierarchical regression analysis of individual-level factors predicting sense of community among people with serious mental illness (N=300) .....	33
Table 3.3 Summary of hierarchical regression analysis of factors predicting sense of community among people with serious mental illness (N=300) .....	34

LIST OF FIGURES

Figure 2.1 Hierarchical regression model.....27

# CHAPTER 1

## INTRODUCTION

### 1.1 Overview

Sense of community has been studied broadly as an important component of the community integration and social inclusion of people living with serious mental illness. In research and clinical practice, diagnoses that are typically and collectively termed serious mental illness include major depressive disorder, bipolar disorder, and schizophrenia-spectrum disorders (Kloos, 2010). People with these disorders typically have limited income and few opportunities for work, and they typically rely on public sector mental health care (Kloos, 2010). They often experience significant challenges to functioning in their lives, including unemployment, attenuated social support systems, and cognitive impairments that can affect all other areas of functioning (Kloos, 2010; Green, 2006; Müller, Nordt, Lauber & Rössler, 2007; Tsai, Desai, & Rosenheck, 2012). Community integration is premised on the idea that individuals with serious mental illness are entitled to the same opportunities to live, work, socialize, and engage in pleasurable activities within their communities as those without (Wong & Solomon, 2002). These opportunities span all three dimensions of community integration, including physical integration (i.e., participation in activities of daily living within the community), social integration (i.e., regular social contact with neighbors and other members of the community), and psychological integration (i.e., the sense of membership or belonging to one's community; Aubry & Myner, 1996; Wong et al., 2002). It is the psychological

integration of people with serious mental illness that has been studied most often as sense of community. First discussed by Sarason (1974) and later proposed by McMillan & Chavis (1986) as a construct that might be measured quantitatively, sense of community is defined as “a feeling that members have of belonging, a feeling that members matter to one another and to the group, and shared faith that members’ needs will be met through their commitment to be together” (McMillan et al., 1986; p.9). Because of the psychological nature of the construct, sense of community involves the perception or the felt sense that one belongs in community with others. Having this sense of belonging within one’s own community is important for all people. However, it may be especially important for people challenged by serious mental illness.

The purpose of the current study is to identify individual and community-level factors that are relevant to the felt sense of community among people with serious mental illness who are independently housed. People with serious mental illness often struggle to fully integrate into their communities and feel accepted within their own neighborhoods. Yet with support and community-based interventions focused on social inclusion, people with these challenges could live fulfilling lives fully integrated within their own communities. Identifying factors that facilitate or create barriers to establishing a felt sense of community can inform policy and interventions that promote community integration among this population. These factors will be examined hierarchically as levels of analysis based on proximity to the individual, and relevance to sense of community will be determined. Results from this research can inform policy makers, community service providers, and other stakeholders about factors that promote sense of community among independently housed people with serious mental illness. To provide a structural

framework for the study, the following sections of this paper will: 1) review how community integration and sense of community have been studied among people with serious mental illness to date, 2) review factors previously researched in the context of supportive and supported housing as specific challenges and facilitators that relate to the felt sense of community among people with serious mental illness, and 3) determine the relationship of these factors to the sense of community among people with serious mental illness living independently in the community.

## **1.2 Sense of Community within Housing Models**

Following the shift from institutionalized care for people with serious mental illness to community care settings in the 1950s, housing services have played a role in facilitating sense of community to varying degrees of success. The early days of custodial housing (i.e., board and care homes) were largely unsuccessful in helping people integrate more broadly into the community as they primarily provided in-home care services (Nelson & Laurier, 2010). With the advent of supportive housing services, support staff provided clients rehabilitation services that integrated community experiences with a focus on skill building (e.g., life skills, social skills), independence, and work (Nelson et al., 2010). In the supportive housing model, housing is provided on a continuum dependent on staff-determined client need where clients are placed into custodial care group homes, halfway or quarter-way houses, or clustered apartments where multiple clients live in close proximity (2010). Research has shown supportive housing models to be effective in reducing homelessness and public service use among people with serious mental illness, reducing hospitalizations, and for promoting both quality of life and sense of community (Culhane, Metraux, & Hadley, 2002; Nelson,

Aubry, & Lafrance, 2007; Nelson et al., 2010; Forenza & Lardier, 2017). However, in the supportive housing model, support services and housing are linked, in that to lose one often means the loss of the other. Additionally, with supportive housing, clients are offered little choice on type or location of housing, and some research has indicated client dissatisfaction with this model. A review of twenty-six client preference surveys administered across the nation found that clients consistently reported preferences to live independently, either alone or with a romantic partner, rather than with other supportively housed clients; the majority of clients surveyed also expressed a strong preference for support staff to be available on call, whereas few respondents wanted to room with live-in staff (Tanzman, 1993). From this and other ideas stemming from client-centered movements emerged the supported housing model where clients choose the type of housing they prefer, and support staff provide assistance in acquiring long-term, stable, and affordable housing that meets client preference (Carling, 1993; 1995). The availability of scatter-site housing choices, where clients live among people without mental illness or housing supports, is another common aspect of supported housing, although findings have been mixed; some clients in scatter-site housing report sense of community commensurate with non-mentally ill neighbors and some report feelings of isolation, while others report greater sense of community in non-scatter-site housing (Siegel, Samuels, Tang, Berg, Jones, & Hopper, 2006; Townley & Kloos, 2011; Bengtsson-Tops, Ericsson, & Ehliasson, 2014). In the purest form of the model, additional support services are offered and available, including crisis support, financial management assistance, medication support, and help with participating in leisure/community activities (Carling, 1993). Importantly, however, these services are

“de-linked” from housing and accessing additional services is entirely by client choice (Nelson et al., 2010). The supported housing model has also been found to be effective in reducing homelessness and hospitalizations among people with serious mental illness and a history of chronic homelessness, as well as in promoting housing satisfaction, quality of life, and the use of community-based treatment-related services (Aubry, Ecker, & Jetté, 2014). Yet, some have noted that much of this research comes from studies with homeless populations and that there is little research involving housed or precariously housed adults with serious mental illness (Kyle & Dunn, 2008). It is further unclear how well individuals who are independently housed and managing serious mental illness without benefit of support services are able to integrate within their communities. The current study intends to address this gap in the literature.

### **1.3 Gap in the Literature**

Despite the importance of sense of community as an integral part of community integration, there have been very few studies focused on sense of community for people with serious mental illness who live in supported housing (Wong & Solomon, 2002; Prince & Gerber, 2005; Townley & Kloos, 2009; Townley & Kloos, 2011; Townley & Kloos, 2014). Further, only scant research exists on sense of community, specifically, or even community integration more broadly, for people with serious mental illness that reside in the community without housing supports (Townley, Miller, & Kloos, 2013; Terry, Townley, Brusilovskiy & Salzer, 2019). Yet, there are over 11 million people who experience serious mental illness in the United States alone and only a fraction of these individuals receives supportive or supported housing services (National Institute of Mental Health, 2019). While exact figures are difficult to come by, a look at the number



of housing subsidies (a key component of housing support services) provided to U.S. households gives a rough estimate for the gap in services. There are a more than 10 million people living in roughly 5 million American households that receive housing subsidies; 2.4 million of these are people with disabilities (Center on Budget and Policy Priorities, 2019). However, this figure includes all types of disabilities (i.e., physical, intellectual, and psychiatric), making the number of people with serious mental illness who are living in the community with housing supports much lower than the 2.4 million people reported here. This could mean that less than 20% of the 11 million people with serious mental illness receive supported housing services, some of which might include support services that promote sense of community. While a focus on tangible housing supports may be necessary for this population, it is nevertheless insufficient to support the tenets of recovery among people managing serious mental illness (i.e., wellness, living a self-directed life, and reaching one's full potential; Substance Abuse and Mental Health Services Administration, 2012). By incorporating a focus on a sense of community and social inclusion, we might better support individuals as they strive toward recovery from serious mental illness.

With so little research concerned with sense of community for those without housing services, there exists a large gap in the literature for this population. Which factors affect sense of community among independently housed individuals with serious mental illness is an empirical question that bears answering. The following sections provide a review of the literature for factors that relate to sense of community among individuals with serious mental illness. Because of the dearth of sense of community literature inclusive of independently housed individuals managing serious mental illness,

this review will necessarily be drawn from research on individuals who live in supportive and supported housing.

#### **1.4 Factors Affecting Sense of Community**

**Psychiatric distress.** For people actively managing mental illness, experiencing a felt sense of community can be affected by level of functioning and symptom distress. Perceiving that one's surrounding neighborhood is welcoming and accepting of people with mental illness may influence both levels of distress and the sense of belonging within one's community. Among a sample of people living in the community with serious mental illness, Kloos and Townley (2011) found that the perception that one belonged and was accepted in the neighborhood mediated the relationship between neighborhood factors (i.e., neighbor relations, satisfaction, and safety) and psychological well-being (i.e., relative lack of distress), in that those who positively evaluated specific neighborhood factors had fewer symptoms of psychiatric distress when they perceived that their neighborhood was welcoming and accepting of them. In a study with vulnerably housed and homeless individuals with significant psychiatric need, people who reported better mental health functioning tended to have higher psychological integration, or sense of community (Ecker & Aubry, 2016). The inverse is true as well in that people with worse mental health functioning report lower psychological integration (Gulcur, Tsemberis, Stefancic, & Greenwood, 2007). Psychiatric distress is a unique intraindividual level factor for individuals with serious mental illness that both influences and is influenced by interactions across other systems and levels of analysis, and is therefore an important factor to examine further in the current study. In the current study,

psychiatric distress will be examined as a possible factor influencing sense of community.

**Homelessness and housing instability.** People with serious mental illness are often affected by homelessness and housing instability (Yanos, Barrow, & Tsemberis, 2004). For some, the experience of homelessness can affect one's sense of belonging in a community once stable housing has been re-established (Yanos et al., 2004). Qualitative research suggests that a history of homelessness may affect the self perception that one "fits in to" or belongs within a new community; factors related to this sense of fit include the perceived racial/ethnic match with others in the neighborhood, the perceived match of values held by the newly housed person and the neighborhood, and the perceived openness of the neighborhood toward difference (2004). These "differences" were discussed by participants in the Yanos et al. (2004) study as relating to minority status, experiences with homelessness, and experiences with mental illness. Of course, people without these experiences can and do encounter difficulties with establishing a sense of belonging. Yet, there is evidence to suggest that the confluence of some of these factors can have an exacerbating effect.

Length in residence could also affect one's sense of community, in that the longer one lives in a neighborhood, the greater one's opportunity for developing a strong sense of community within that neighborhood. Conversely, shorter lengths in residence or more frequent transitions from neighborhood to neighborhood may disrupt this process. This may be especially salient for people with serious mental illness who tend to have fewer financial resources and may struggle with maintaining stable housing (Kloos, 2010). However, length in current housing has been differentially implicated in sense of

community and psychological integration research among this population (Nemiroff, Aubry, & Klodawsky, 2011; Patterson, Moniruzzaman, & Somers, 2014). More nuanced research on housing stability and sense of community may be necessary to parse these effects. The current study will look at how housing tenure affects sense of community and will be examined through both length in current residence and experience of housing instability.

Several measurement approaches have been taken to assess housing instability for this population in previous research. Some research has utilized clinician ratings of client housing stability over a six-month period (Drake, Wallach, & Hoffman, 1989). Other studies have used calculated indices based on days spent homeless versus housed to determine stability for as much as eighteen months of housing history (Dickey et al., 1996; Rollins et al., 2012). Still others have called for a more nuanced definition of instability that assesses multiple dimensions of housing security, ranging from education and employment status to standing in the legal system and harmful substance use (Frederick, Chwalek, Hughes, Karabanow, & Sean, 2014). Because the current study focuses on sense of community, a recent history of maintaining stable housing (i.e., living in fewer residences in a given time) was thought to afford the opportunity to build a sense of community. Conversely, it was thought that recent, frequent moves might disrupt the practice of “taking root” within a given community and lead to a more temporary mindset in the current housing situation. Therefore, in the current study, an accounting of the twenty-four-month period of housing moves immediately prior to the study was chosen as the measurement for housing stability.

**Social support.** For those whose mental and emotional resources are already taxed by the management of illness, forging and maintaining a social support network can be difficult to navigate. A recent review of social networks and support among those with serious mental illness found that people experiencing first-episode psychosis had fewer friends and confidants compared to the general population (Gayer-Anderson & Morgan, 2013). Even in comparisons among people with serious mental illness, those with more severe psychiatric symptoms tend to have smaller social support networks than those with less severe symptoms (Tsai, Desai, & Rosenheck, 2012). This could be because existing relationships become strained by repeated requests for help from the individual experiencing severe symptoms or from a lack of reciprocity when those with serious mental illness are not able to offer support for friends in return (Tsai, 2012). They also tend to utilize the social support networks they have less frequently (Schwartz & Gronemann, 2009). Isolation may result from anticipated rejection by others or from fear of stigma related to mental illness. Although people with severe symptoms tend to be more isolated, engagement with similarly affected peers can be highly beneficial for recovery and illness management through the bidirectional provision of support (Onken, Craig, Ridgway, Ralph, & Cook, 2007). One's social support network can also affect sense of community and vice versa. Forenza & Lardier (2017) asked a group of individuals with serious mental illness and a history of homelessness how they experience community in supportive housing. Residents reported that social support was an important component in their experience of community alongside other needs fulfillment factors like safety and independence (2017). Participants' descriptions of fellow community members as a "big happy family" that provides tangible support (e.g.,

food) and fellowship by cooking and eating together certainly evoke feelings of social support (2017). In addition, more casual interactions within one's community (e.g., interacting with distal supports) can provide an important form of social support as well. Distal support interactions are defined as casual, everyday encounters with people who live and work in an individual's shared community (Wieland, Rosenstock, Kelsey, Ganguli, & Wisnieski, 2007). The first to look empirically at distal supports in this population, Wieland et al. (2007) found that having more distal support relationships in the community was associated with a greater sense of belonging among adults with schizophrenia. Following this, Townley, Miller, & Kloos (2013) found that distal supports predicted community integration for people with serious mental illness. Importantly, this relationship was found even after accounting for more traditional social support networks of friends and family (Townley et al., 2013). However one constructs their support system (e.g., family, friends, distal connections), a global perception of having social support seems to be associated with increases in sense of community or psychological integration.

**Neighbor relations.** Positive relations with neighbors are important for developing a sense of belonging within one's community. Several studies have shown associations between positive relations with neighbors and sense of community among individuals with and without serious mental illness. In a community sample of non-apartment dwelling residents in Winnipeg, Canada, positive neighbor relations were shown to predict a greater sense of community among residents (Farrell, Aubry, & Coulombe, 2004). In a community sample within an Italian city, the perception of one's neighborhood was extended to a larger city area than the smaller blocks commonly

referred to as neighborhoods in other literature; nevertheless, positive relations among neighbors predicted sense of community beyond other demographic and neighborhood factors like length of residence (Prezza, Amici, Roberti, & Tedeschi, 2001). In the United States, Kloos & Townley (2011) found that positive neighbor interaction was a stronger predictor of neighborhood social climate than perceptions of safety or satisfaction with their neighborhood for clients of supportive housing programs. Positive neighbor relations seem to have a beneficial effect on perceptions of one's community and sense of belonging within the community for people with and without serious mental illness.

**Social climate.** The social climate within a neighborhood has been described as the perception of social experiences encountered within a community, such as belonging, discrimination, and openness to and acceptance of diversity and mental illness (Kloos & Shah, 2009). The perception of a warm social climate promotes feelings of belonging and acceptance within one's community. Social climate has been implicated in a number of outcomes for people with and without serious mental illness. In a non-seriously mentally ill community sample, the neighborhood social climate for relocated Hurricane Katrina survivors living with host families mediated the effect of event-related stressors on mental health outcomes, in that those with more positive perceptions of their neighborhood climate experienced better mental health outcomes related to their experiences with the disaster (Kloos, Flory, Hankin, Cheely, & Segal, 2009). Among supportively housed individuals with serious mental illness, neighborhood social climate predicted wellbeing outcomes such as psychiatric distress, recovery orientation, residential satisfaction, and adaptive functioning as rated by case managers (Wright & Kloos, 2007). In a similar sample, Kloos & Townley (2011) found that social climate

predicted psychological wellbeing as measured by psychiatric symptom distress and fully mediated the relationship between specific neighborhood factors (i.e., safety, satisfaction, and relations with neighbors) and wellbeing. A second study with supportively housed individuals found that neighborhood tolerance for mental illness predicted sense of community in a model that included housing site type (congregate vs. non) and diagnosis of schizophrenia (Townley & Kloos, 2011). Neighborhood tolerance was measured by a subscale of the Housing Environmental Survey – Neighborhood Social Climate measure that asks about stigmatizing experiences related to mental illness (Townley et al., 2011). While diagnosis was not predictive of sense of community, both congregate housing (i.e., clustered housing reserved for people with serious mental illness) and greater perceived tolerance for mental illness predicted greater sense of community (Townley et al., 2011). Research investigating the effect of social climate on sense of community among non-supportively housed individuals with serious mental illness is needed to determine whether there exist differential effects of support services on perceptions of social climate and sense of community.

### **1.5 Organization of analyses by proximal vs. distal levels**

In the current study, factors posited to affect sense of community are organized by levels (i.e., individual, interpersonal, neighborhood, social climate) and are arranged in hierarchical fashion by “closeness” to the individual – an arrangement which examines ideas about the salience of factors based on perceived proximity. Definitions and ideas about salience to outcomes vary somewhat by discipline. Community psychology has discussed proximal and distal factors as involving risk or protection (e.g., stressors or resources for coping) and existing on a continuum; some are closer to the individual



while others are more distant (Kloos et al., 2012). Medical and health research discusses proximal factors as those having the greatest impact on current disease state and defines distal factors as those having greater impact on ultimate outcomes of health (World Health Organization, 2002). While parallels between disease state and sense of community are not intended here, this idea of immediacy in a given effect suggests that factors more proximal to the individual may create a greater day-to-day impact. Researchers in clinical psychology have discussed proximal and distal factors as “powers” that affect one’s life and mental well-being to varying degrees, suggesting that distal powers (e.g., economic, political, cultural) have greater and longer-lasting impact on individual mental health than more proximal powers that could be addressed in psychotherapy (e.g., family, social relationships, employment; Smail, 1994; 1995; Hagan & Smail, 1997). Here, distal powers are seen as “further” away from the individual, larger in scope, and perhaps less controllable than the proximal powers wherein the individual has some hope of effecting change. In looking at well-being outcomes, researchers in community psychology have posited greater effects from proximal factors like quality of housing than more distal neighborhood effects, but findings have suggested that the larger neighborhood level was more predictive of well-being (Wright & Kloos, 2007). In the current study, the examination of salience among factors more proximal or distal to the individual was incorporated into the hierarchical design of the analyses as a means of testing the possibility that environmental factors may have an impact even after accounting for more proximal factors.

## 1.6 Study Aims & Hypotheses

With the previous sense of community research for people living in supportive or supported housing as a guide, the purpose of the current study is to determine the relative strength and predictive capacity of factors related to sense of community among individuals with serious mental illness. In the hypotheses that follow, these factors have been organized hierarchically from the most proximal level of analysis to the individual (e.g., personal history of housing experiences, psychiatric distress) to the most distal level of analysis furthest removed from the individual (e.g., social climate within the community). In service to this goal, the following four aims and hypotheses are presented:

**Hypothesis 1.** The first aim of the study will be to ascertain the individual level factors predictive of sense of community among individuals with serious mental illness. It is hypothesized that intraindividual factors will differentially predict sense of community, in that (1a) history of homelessness, (1b) housing instability, and (1c) psychiatric distress will negatively predict and (1d) length in current residence will positively predict sense of community.

**Hypothesis 2.** The second aim of the study is to determine whether factors at the interpersonal level uniquely predict sense of community beyond those at the individual level. It is hypothesized that increases in perceived social support will positively predict sense of community.

**Hypothesis 3.** The third aim of the study is to determine whether relational factors at the neighborhood level uniquely predict sense of community beyond those at

the individual and interpersonal levels. It is hypothesized that positive neighbor relations will positively predict sense of community.

**Hypothesis 4.** The fourth aim of the study is to determine whether perceptions about attitudes at the social climate level uniquely predict sense of community beyond those at the individual, interpersonal, and neighborhood levels. It is hypothesized that positive perceptions of community tolerance and acceptance will positively predict sense of community.

## CHAPTER 2

### METHOD

#### **2.1 Procedures**

The proposed study utilized archival data from the Environmental Factors Affecting Community Integration study conducted from 2009-2012. In the prior study, participants were recruited from a randomly ordered list of 2100 people who used outpatient adult clinical services at the Columbia Area Mental Health Clinic (CAMHC) in Columbia, South Carolina. Clinic staff presented the opportunity to participate in the study to their clients and arranged consent interviews with research staff for anyone who was interested. Inclusion criteria for the study included being aged 18 or older, receiving mental health services at the CAMHC, and having independent housing (e.g., apartment, trailer, house) in the community without benefit of housing supports (i.e., participation in formal supported housing program). Recruitment continued in this manner until a total of 300 participants agreed to participate and signed informed consent forms. Client records were accessed by CAMHC staff to collect clinical data (e.g., diagnoses). Participants completed survey-style measures on laptop computers during research interviews that were scheduled separately from their consent interviews. Participants received \$20 for completing an interview. The research protocol was approved by the Institutional Review Board at the University of South Carolina and the South Carolina Department of Mental Health.

## 2.2 Measures

**Personal characteristics.** Demographic information was collected through self-report questionnaire and included age, biological sex, race and ethnicity, and monthly household income. Clinical diagnoses were obtained through CAMHC billing records.

**Outcome measure.** The dependent variable and construct of interest for this study is sense of community and is measured here by the *Sense of Community Index* (SCI; see Appendix A). The SCI is a 12-item measure that evaluates the extent to which people feel a sense of belonging to the neighborhood and community in which they live (Chavis, Hogge, McMillan, & Wandersman, 1986; Perkins, Florin, Rich, Wandersman, & Chavis, 1990). Scale items include statements such as, “I have no influence over what this neighborhood is like” and “I can recognize most of the people who live in this neighborhood.” Agreement is assessed on 5-point Likert scales ranging from *strongly disagree* to *strongly agree*, with higher average scores relating to higher levels of sense of community. Thus, this measure’s possible range of measurement in quantifiable terms spanned from 1.00 to 5.00. Conceptually, this range would represent, at the lowest end (i.e., 1.00), strong disagreement that a felt sense of community (in the neighborhood) is present within the individual to, at the highest end (i.e., 5.00), strong agreement that this felt sense of community is present. The developers of the SCI did not complete a full validation study for the index. However, construct validity and reliability information were documented early on by several subsequent studies. Perkins et al. (1990) assessed internal consistency using Cronbach’s alpha as 0.80 in a sample of 720 individuals living within a 48-block stretch of New York City that responded to a phone survey. Construct validity was demonstrated in the same block participation study (Perkins et al., 1990),

where SCI was correlated with longer time living in the neighborhood (0.60), block satisfaction (0.54), neighboring (i.e., giving and receiving assistance; 0.39), communitarianism (i.e., perceived importance of community and of work to improve it; 0.30), and informal social control (i.e., likelihood of neighbor doing something about perceived threats or incivilities; 0.65). As discussed, the SCI has been used extensively to measure sense of community and psychological integration in non-clinical samples, but more recent research has found sense of community to be an important construct among people with serious mental illness as well (Townley & Kloos, 2009). In the current study, the original twelve items from the SCI were retained and three items from the Brief Sense of Community Index were added (Long & Perkins, 2003). The three additional items represented mutual concern and community values thought to be relevant to people with serious mental illness (see Appendix A). Reliability for the adapted measure remained strong with Cronbach's alpha found to be 0.88.

**Individual level.** As described in the subsections below, individual level factors hypothesized to predict sense of community include psychiatric distress and housing related variables, including a history of homelessness, recent housing instability, and housing tenure (i.e., length in current residence).

***Housing related variables.*** Individual level housing related constructs predicted to affect sense of community included housing instability, housing tenure, and history of homelessness. An accounting of recent housing moves immediately prior to the study was used to determine housing stability. Housing instability was coded from a two-year retrospective of prior residences and operationalized as two or more places of residence over a twenty-four-month period.

Current housing tenure and previous homelessness were also measured. Housing tenure in the current residence was coded in days and determined by calculating the number of days between the interview date and the date that participants reported moving into their current residence. Most participants gave dates in month/day/year format. However, where participants only provided a year, the mid-year point of July 1 was assigned. Where participants provided a month and a year but did not give a date, the typical renter move-in date of the first of the month was assigned. History of homelessness was assessed by asking participants whether they had ever experienced homelessness. See Appendix B for housing related questionnaire.

***Psychiatric distress.*** Psychiatric distress was measured using the 53-item Brief Symptom Inventory (BSI) that asks about distress associated with the experience of psychiatric symptoms (Derogatis & Melisaratos, 1983; see Appendix C). BSI items were assessed on a 4-point scale ranging from 0 *not at all* to 4 *extremely* for how distressing recent experiences have been for respondents. As a shortened form of the SCL-90-R, the BSI has been found to have moderate to satisfactory convergent validity and strong internal consistency (Derogatis et al., 1983; Boulet & Boss, 1991; Prinz et al., 2013) and has been widely used in research to measure subjective levels of psychiatric distress. For the current study, calculated Global Severity Index (GSI) scores were used as a measure of distress level. The GSI scoring method combines participants' responses about the number of symptoms experienced and the intensity of symptoms endorsed to calculate a global distress level (Derogatis, 1993). Internal consistency for the BSI in this dataset was shown to be high at a Cronbach's alpha of 0.97.

**Interpersonal level.** The interpersonal level variable predicted to affect sense of community was perceived social support. Participants' perceptions of social support being available to them were measured by the brief, 12-item version of the Interpersonal Support Evaluation List (ISEL-12; Cohen, Mermelstein, Kamark, & Hoberman, 1985; See Appendix D) that was adapted from the original 40-item measure developed by Cohen & Hoberman (1983). The ISEL is a 12-item measure that evaluates the extent to which participants perceive being supported by others via *appraisal* (guidance or advice), *belonging*, or through *tangible* means (help or assistance; Cohen et al., 1985). Responses are rated on a 4-point Likert scale ranging from *definitely false* to *definitely true*. Convergent validity and test-retest reliability has been established for the 40-item long-form ISEL (Cohen, et al, 1983); internal consistency for the ISEL-12 has remained high across studies, ranging from 0.80 to 0.90 (Cohen, n.d.). Items were recoded as necessary so that higher average scores indicated higher levels of perceived social support. Reliability was assessed in the current database by Cronbach's alpha and found to be reliable at 0.84.

**Neighborhood level.** The neighborhood level variable predicted to affect sense of community was participants' perceptions of their relations with their neighbors. In this study, the measurement of neighbor relations was intended to be distinct from other relationships (e.g., friends, family) that may have been measured at the interpersonal level. The quality of relationships with neighbors, including participants' perceived support from and amount of positive contact with their neighbors was assessed using the neighbor subscale of the *Housing Environment Scale (HES-Neighbor)*; See Appendix E) developed by Kloos & Shah (2009). Internal consistency for the measure was found to be



0.77 in the original study. The subscale has since been expanded to nine items assessed on 5-point Likert scales ranging from *strongly disagree* to *strongly agree*, so that higher scores indicate better relations with neighbors. The current version was found to maintain reliability in this study's database by a Cronbach's alpha of 0.85.

**Social climate level.** The social climate level variable predicted to affect sense of community was the perception of the neighborhood social climate. In this study, social climate is defined as perceptions of racial/ethnic and mental health-related community acceptance. Social climate is measured by the 12-item *HES Neighborhood Social Climate (HES-NSC; See Appendix F)* scale developed by Kloos et al. (2009). In this study, items were assessed on a 5-point Likert scale ranging from *strongly disagree* to *strongly agree* and were recoded as necessary so that higher average scores indicated a more positive social climate. Internal consistency in the original study for the HES-NSC was 0.82; the scale maintained good consistency in the current study with a Cronbach's alpha of 0.84.

### **2.3 Data Analytic Plan**

With the exception of the power analysis, which was conducted with G\*Power, all analyses were conducted using IBM SPSS Statistics, Version 25.0. Missing data was minimal for the dataset, with only two variables missing values (see Table 2.1). Although missingness was determined to be at random and the percentage of missing data was relatively low for the dataset, the expectation-maximization (EM) method was chosen over list-wise or pair-wise deletion to preserve power and reduce bias. The EM method has been discussed as a “principled” data imputation method for handling missing data in research (Dong & Peng, 2013).

**Analysis plan by study aims.** To determine fit of the proposed model for factors predicting sense of community among individuals with serious mental illness living in their own residences, a hierarchical linear regression was conducted with four predictor blocks organized by level of proximity to the individual. Blocks of predictors were ordered from those most proximal to the individual (i.e., individual level) outward to the most distal to the individual (i.e., community level). The model was ordered in this way to test the relative importance of factors that are perceived as closest to the individual versus those that are further away.

The first aim of the study was to ascertain the individual level factors predictive of sense of community among individuals with serious mental illness. The first block of predictors encompassed variables closest to the intraindividual experience of the individual, including psychiatric distress, a history of homelessness, housing instability, and length in current residence.

The second aim of the study was to determine whether factors at the interpersonal level uniquely predict sense of community beyond those at the individual level. Social support comprised the interpersonal level and second block predictor in the model.

The third aim of the study was to determine whether neighbor relational factors at the neighborhood level uniquely predict sense of community beyond those at the individual and interpersonal levels. Neighbor relations represented the neighborhood level and third block predictor in this model.

The fourth aim of the study was to determine whether perceptions about attitudes at the social climate level uniquely predict sense of community beyond those at the

individual, interpersonal, and neighborhood levels. The community level was the most distal to the individual and represented the fourth and final block of the model. The fourth block predictor was the neighborhood social climate, which measured perceptions of racial/ethnic and mental health-related acceptance in their neighborhood.

**Power analysis.** An *a priori* power analysis was conducted to ensure adequate power to test statistical significance at an alpha of 0.5 using G\*Power (Faul, Erdfelder, Lang & Buchner, 2009) software. The results indicated that given the sample size of 300, an  $f^2$  of 0.0263 can be detected with 80% power in the proposed Aim 4 hierarchical regression model. Using Cohen's (1988) guidelines,  $f^2 = 0.0263$  can be considered a small effect. Thus, the current study is sufficiently powered to detect small, medium, and large effects where they exist.

**Assumptions.** Standard assumptions for hierarchical linear regression were checked before data analyses were conducted (Mendenhall, Sincich, & Boudreau, 2003). Results indicated there was independence of residuals, as assessed by a Durbin-Watson statistic of 1.89. A scatter plot of studentized by unstandardized residuals showed linear relationships between the dependent variable and the independent variables, collectively. Partial regression plots also revealed linear relationships between the dependent variable and each of the seven predictor variables in the model. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. No problems with multicollinearity were found upon inspection of the correlation coefficients (none were greater than 0.7) and of the VIF collinearity statistic where no values were greater than 10 (all were under 2.0). Neither were there any problematic outliers, high leverage points, or highly influential points discovered in the

data. Finally, a Q-Q plot of studentized residuals was produced to assess for normality, which revealed a largely normal distribution that was only mildly peaked. As regression analysis is fairly robust to deviations of normality, particularly where homoscedasticity and independence of residuals are found, it was decided that analyses could proceed as planned.

Table 2.1. Rates of item-level missing data

	<i>n</i> missing	<i>n</i> valid	% missing
Length in residence	3	297	1%
Total income	16	284	5.3%

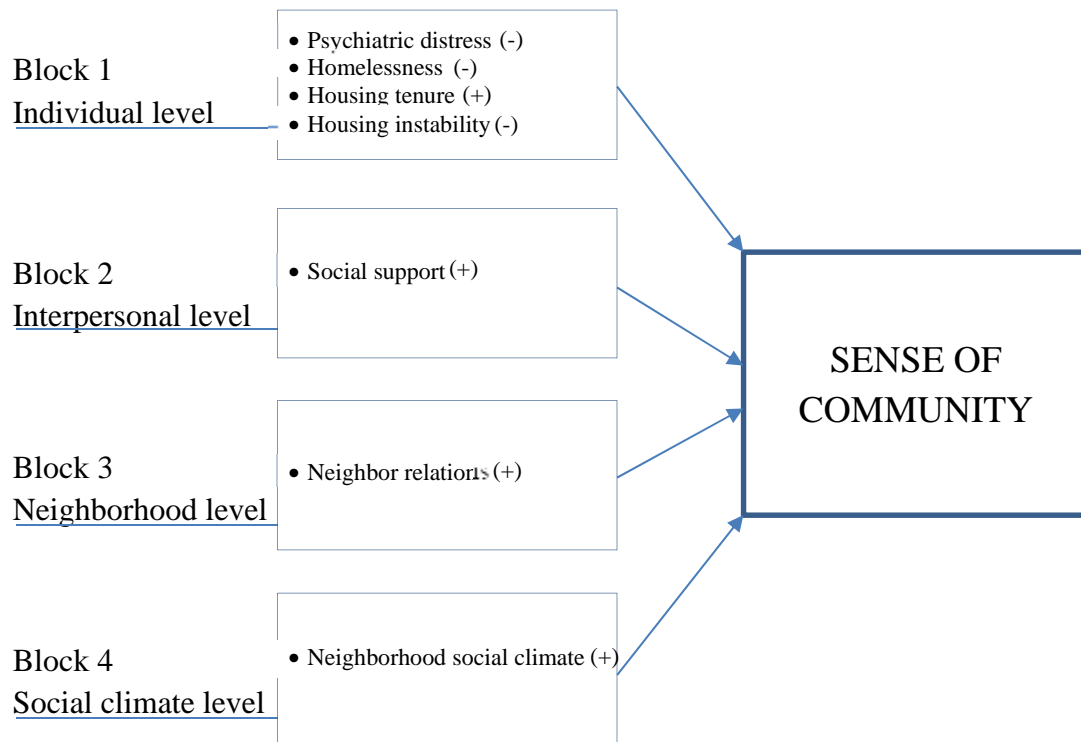


Figure 2.1. Hierarchical regression model

## CHAPTER 3

### RESULTS

#### 3.1 Demographics

The participants in the study were 300 adult residents living independently in the Columbia area of South Carolina who were accessing services from the Columbia Area Mental Health Clinic at the time of participation. Of the 300 participants, 197 were female and 103 were male. Ages of the participants ranged from 21 to 74 years old and the average across the sample was 46 years old ( $SD=11.25$ ). The majority of the sample identified as African American ( $n=190$ ; 63%) or White ( $n=86$ ; 29%), while all others identified as Alaskan Native/Native American ( $n=8$ ; 3%), Asian ( $n=6$ ; 2%), Hispanic ( $n=6$ ; 2%) or another race ( $n=4$ ; ~1%). Income among participants was reported across a wide range from \$0 to \$4,500 per month. The average income was around \$825 per month ( $SD=\$640$ ), although the median was \$713 per month. Those in the sample may have received housing subsidies based on income (included in the income listed here). However, all participants were housed independently, meaning none were receiving supported housing services. There was a high frequency of experiences with homelessness among participants with 116 (38.7%) reporting a history of being homeless at some point in their lives. Nearly half of participants reported living in their current residence for longer than three years (47%). However, just as many (46.8%) reported having lived in two or more residences and as many as four residences in the prior twenty-four-month period. Primary clinical diagnoses for the sample were reported by

clinic staff as schizophrenia spectrum disorder (n=139; 46%), major depressive disorder (n=81; 27%) and bipolar disorder (n=65; 22%). The remaining 5% (n=15) of the sample reported severe diagnoses of post-traumatic stress disorder or anxiety.

### 3.2 Analyses

**Correlations.** Bivariate correlations revealed a number of significant relationships among study variables. The outcome variable, sense of community, was strongly, positively correlated with neighbor relations ( $r = .61, p < .01$ ) and neighborhood social climate ( $r = .58, p < .01$ ) and moderately, positively correlated with social support ( $r = .32, p < .01$ ). Sense of community was also mildly, negatively correlated with history of homelessness ( $r = -.15, p < .05$ ) and psychiatric distress ( $r = -.16, p < .01$ ) and was mildly, positively correlated with length in current residence ( $r = .13, p < .05$ ). While the relative merit and weight of each relationship cannot be judged through bivariate correlation analyses alone, these relationships provide support for the hypotheses put forward in the current study. Correlations among key study variables can be found in Table 3.1.

**Outcome variable statistics.** Overall, participants in the study demonstrated a wide range of felt sense of community within their neighborhoods. Measurements of sense of community in the sample ranged from 1.67 (i.e., between strong disagreement and disagreement that one feels a sense of community) to 5.00 (strong agreement that one feels a sense of community). The mean for the sample was 3.39 (SD=0.64) and the standard error of measurement was 0.04. The distribution within the current sample was fairly normal and only slightly skewed since the median (3.47) was only marginally



higher than the mean. The measured mean ( $M=3.39$ ) was just slightly higher than the “perfectly distributed” mean of the measured range (3.33; i.e.,  $5.00-1.67=3.33$ ) which would have been 3.36. Taken together, these descriptive statistics suggest that the capacity of the SCI to measure differences in the current sample is robust.

**Regression analyses.** A hierarchical linear regression model was used to determine the relative strength of factors in predicting sense of community among individuals with serious mental illness. Variables were entered hierarchically in four blocks ranging from the individual level outward to the community level. Demographic variables, including age, ethnicity, sex, and income were held as covariates in each step of the model and were found to be nonsignificant; these are reported separately in Table 3.2. Model fit was determined at each step of the model by change in adjusted  $R^2$ . Full results from the regression analyses are reported in Table 3.3; a summary of each block is provided below.

**Block 1 – individual level.** Regression analysis of block one individual level factors consisted of history of homelessness, housing instability, psychiatric distress and housing tenure. As hypothesized, psychiatric distress ( $\beta = -.32$ ) was found to significantly negatively predict sense of community  $F(4, 287) = 9.89, p < .001, R^2 = .10$ . However, housing tenure, housing instability, and history of homeless were not significant predictors in this step of the model.

**Block 2 – interpersonal level.** Block two was comprised of block one variables and the addition of perceived social support. As hypothesized, analysis of this model found that social support ( $\beta = .24$ ) positively predicted sense of community  $F(1, 286) =$

16.35,  $p < .001$ ,  $R^2 = .15$ ). Alongside social support, psychiatric distress ( $\beta = -.23$ ) remained in the model as a significant negative predictor of sense of community.

**Block 3 – neighborhood level.** Block three added neighbor relations to the first and second block predictors already entered in the model. The third block hypothesis was supported when analyses revealed that neighbor relations ( $\beta = .55$ ) positively predicted sense of community  $F(1, 285) = 132.99$ ,  $p < .001$ ,  $R^2 = .42$ ). Psychiatric distress ( $\beta = -.20$ ) continued to significantly negatively predict sense of community. However, social support dropped from the model with the addition of neighbor relations.

**Block 4 – social climate level.** The block four predictor, neighborhood social climate, completed the full regression model in the final step. As hypothesized, neighborhood social climate positively predicted sense of community. Analysis of the full model showed that neighborhood social climate ( $\beta = .38$ ), housing tenure ( $\beta = .15$ ), and neighbor relations ( $\beta = .43$ ) all positively predicted sense of community  $F(1, 284) = 61.81$ ,  $p < .001$ ,  $R^2 = .42$ ). Psychiatric distress dropped from the model with the addition of neighborhood social climate.

Table 3.1 Correlation coefficients for regression predictors and outcomes

Variables	1	2	3	4	5	6	7	8
1. Sense of community	1	-.15*	-.16**	.13*	-.32**	.32**	.61**	.58**
<i>Block 1 – Individual Level</i>								
2. Hx homelessness	–	1	.28**	-.28**	.25**	-.11	-.09	-.12*
3. Housing instability	–	–	1	-.59**	.10	-.05	-.19**	-.03
4. Housing tenure	–	–	–	1	.01	-.03	.10	-.10
5. Psychiatric distress	–	–	–	–	1	-.39**	-.19**	-.35**
<i>Block 2 – Interpersonal Level</i>								
6. Social support	–	–	–	–	–	1	.30**	.33**
<i>Block 3 – Neighborhood Level</i>								
7. Neighbor relations	–	–	–	–	–	–	1	.40**
<i>Block 4 – Social Climate Level</i>								
8. Neighborhood social climate	–	–	–	–	–	–	–	1

\*correlation is significant at the .05 level (2-tailed).

\*\*correlation is significant at the .01 level (2-tailed).

Table 3.2. Summary of covariates for hierarchical regression analysis of individual-level factors predicting sense of community among people with serious mental illness (N=300)

Covariates	Model					
	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>F</i> ( $\Delta R^2$ )	<i>R</i> <sup>2</sup>
Age	<0.01	<0.01	0.07	1.16	0.60	-0.01
Sex	-0.02	0.08	-0.02	-0.28		
African American	0.01	0.14	0.01	0.07		
White (race/ethnicity)	0.05	0.15	0.03	0.30		
Total income	<0.01	0.00	0.05	0.91		
Schizophrenia	-0.03	0.18	-0.02	-0.18		
Major depressive disorder	-0.08	0.18	-0.06	-0.44		
Bipolar disorder	-0.14	0.19	-0.09	-0.74		

*Note:* Race was represented as two dummy variables with Other (e.g., Hispanic,

Asian) serving as the reference group. Diagnosis was represented as three dummy

variables with Other (e.g., PTSD, anxiety) as the reference group.

\**p* < .05. \*\**p* < .01.

Table 3.3. Summary of hierarchical regression analysis of factors predicting sense of community among people with serious mental illness (N=300)

Predictors	Model					$F (\Delta R^2)$	$R^2$
	$B$	$SE B$	$\beta$	$t$			
Block 1 – Individual Level						9.88**	0.10
Hx homelessness	-0.05	0.08	-0.03	-0.55			
Housing instability	-0.07	0.09	-0.05	-0.70			
Housing tenure	1.86e <sup>-5</sup>	0.00	0.09	1.27			
Psychiatric distress	-0.26	0.05	-0.32	-5.38**			
Block 2 – Interpersonal Level						16.35**	0.15
Hx homelessness	-0.03	0.08	-0.03	-0.43			
Housing instability	-0.06	0.09	-0.04	-0.61			
Housing tenure	2.04e <sup>-5</sup>	0.00	0.10	1.43			
Psychiatric distress	-0.19	0.05	-0.23	-3.64**			
Social support	0.25	0.06	0.24	4.04**			
Block 3 – Neighborhood Level						132.99**	0.42
Hx homelessness	-0.04	0.07	-0.03	-0.67			
Housing instability	0.06	0.08	0.05	0.83			
Housing tenure	1.89e <sup>-5</sup>	0.00	0.09	1.60			
Psychiatric distress	-0.16	0.04	-0.20	-3.74**			
Social support	0.10	0.05	0.09	1.81			
Neighbor relations	0.49	0.042	0.55	11.53**			
Block 4 – Social Climate Level						61.81**	0.52
Hx homelessness	-0.03	0.06	-0.02	-0.46			
Housing instability	0.08	0.07	0.06	1.07			
Housing tenure	3.02e <sup>-5</sup>	0.15	0.15	2.79**			
Psychiatric distress	-0.07	0.04	-0.09	-1.87			
Social support	0.04	0.05	0.04	0.89			
Neighbor relations	0.38	0.04	0.43	9.28**			
Neighborhood social climate	0.40	0.05	0.38	7.86**			

*Note:* *Psychiatric distress* measured from the global distress scale of the Brief Symptom Inventory; greater values = higher psychiatric distress. *Housing instability* = two or more residences within last 24-month period. *Length in current residence* measured in days. *Social support* = perceived strength of support network. *Neighbor relations* = perceived strength of positive relations with neighbors. *Neighborhood social climate* = perceived community acceptance of racial/ethnic diversity and mental illness.  $R^2$  = adjusted  $R^2$ .

\* $p < .05$ . \*\* $p < .01$ .

## CHAPTER 4

### DISCUSSION

#### **4.1 Main Findings**

Extensive evidence indicates that sense of community is a meaningful and important component of community integration that can be elusive for people with serious mental illness. Prior research suggests that people who participate in supportive or supported housing programs may benefit from support designed to facilitate integration within one's community. However, little prior research has explored how sense of community is constructed for individuals who live in the community without benefit of support programs. The purpose of the current study was to add to this literature by examining the relationships between individual and neighborhood experiences and sense of community for people with serious mental illness who live independently in the community without supported housing services. In line with this purpose, the current study used a hierarchical regression model to determine which individual, interpersonal, neighborhood, and social climate level factors predicted sense of community. Results from the hierarchical regression reported here are among the first to fit a model of factors relevant to sense of community among this population (Townley, Miller, & Kloos, 2013; Kloos & Shah, 2009; Wright & Kloos, 2013).

The full regression model in the current study revealed that positive relations with one's neighbors and a neighborhood social climate that is perceived as accepting,

significantly and positively predicted sense of community among people with serious mental illness who live independently in the community without benefit of support services. These results align with the Townley et al. (2011) finding that greater perceived neighborhood tolerance for mental illness was associated with greater sense of community among people with serious mental illness who had housing supports. In that study, a subscale of the HES-NSC was used that asked about perceived stigma and discrimination toward mental illness. The comprehensive measure used in the current study also asked about perceived acceptance of racial and ethnic diversity and more general perceptions of social climate in addition to perceived tolerance for mental illness. The current results also underscore the importance of positive neighbor relations which has been shown to predict perceptions of the neighborhood social climate beyond other contextual factors like satisfaction with housing and perceptions of safety among individuals living in supported housing (Kloos, et al. 2011). Given this previous research, the correlation found between neighbor relations and neighborhood social climate in the current sample (see Table 3.1) is unsurprising. Alongside previous research associating these constructs with sense of community among individuals living with housing supports (i.e., Kloos et al, 2011; Townley et al., 2011), this correlation lends credence to their combined predictive power shown here. It certainly makes sense that experiences in one's own neighborhood that are perceived as socially positive and accepting would have an impact on one's sense of belonging within the community. Taken together, the finding that positive neighbor relations and perceived acceptance of diversity and mental illness predict sense of community speaks to the importance of the greater ecological context with which individuals construct perceptions about the world and their place within it.

## 4.2 Discussion by Study Aims and Hypotheses

**Hypothesis 1.** The first aim of the study was to examine the individual level factors predictive of sense of community among individuals with serious mental illness. It was hypothesized that intraindividual factors would differentially predict sense of community, in that (1a) history of homelessness, (1b) housing instability, and (1c) psychiatric distress would negatively predict and (1d) length in current residence would positively predict sense of community. In the first model, psychiatric distress significantly and negatively predicted sense of community as hypothesized. While the housing related variables hypothesized to affect sense of community trended in the hypothesized directions, none were significantly more predictive than psychiatric distress which, as a first block model, accounted for 10% of the variance in sense of community. The current finding that psychiatric distress predicts sense of community aligns with prior research showing that the experience of distressing symptoms of serious mental illness has an effect on one's sense that they belong within their community (Gulcuret al., 2007; Ecker et al., 2016). Associations between the experience of homelessness, housing instability, and challenges to sense of community have been found (Ecker & Aubry, 2017), but some suggest that the reasons for this are complex (e.g., social climate, diversity of neighborhood, sense of safety, housing quality; Yanos et al., 2004) and may explain differential findings in the literature. For example, sense of community and housing stability were positively associated among formerly homeless individuals participating in an Assertive Community Treatment housing program (Patterson, Moniruzzaman, & Somers, 2014). Yet, in a longitudinal study with formerly homeless women, length in current housing negatively predicted psychological integration where



housing quality was the primary predictor (Nemiroff, Aubry, & Klodawsky, 2011). Longer residence in a home where housing quality is perceived as low may have affected a broader sense of community among these women. Thus, other environmental housing factors may be greater predictors of felt sense of belonging within community than simply time residing in the neighborhood. In addition, more proximal individual level factors may supersede the effects of housing experiences for some individuals. For those experiencing greater psychiatric distress, the day-to-day experience of managing psychiatric symptoms may be far more salient to one's ability to feel a sense of belonging in community than the cumulative effects of previous housing experiences on current functioning. Individual housing experiences of homelessness, housing instability, and how long one resides in a neighborhood may be important factors to consider in more complex models of sense of community and psychiatric distress.

**Hypothesis 2.** The second aim was to determine whether factors at the interpersonal level uniquely predict sense of community beyond those at the individual level. As hypothesized, increases in perceptions of social support did positively predict sense of community, which alongside psychiatric distress, accounted for 15% of the variance. This finding adds to previous research showing the importance of the perception of the availability of social support in building sense of community and community integration, more broadly, among people with serious mental illness (Tsai et al., 2012; Forenza, et al., 2017; Terry & Townley, 2019). There are several ways that social support has been discussed and measured in this population and many depend on the context. For instance, peer support where individuals with serious mental illness mentor and support one another in informal groups or in formalized health care settings

has been shown to promote community integration and sense of community among peers (Davidson et al., 1999; Davidson, Bellamy, Guy & Miller, 2012). Distal supports, or casual interactions with members of one's broader community, have shown to be an important piece to building a social support network among people for whom natural supports have been strained through the experience of mental illness (Townley et al., 2013). In the current study, social support was examined using a global social support measure that explores perceptions of being supported by others via guidance or advice, a sense of belonging, and through tangible help or assistance (Cohen et al., 1985). Future studies could integrate the forms of support specific to people with serious mental illness (i.e., distal supports, peer supports) with the structural components of global support measured here to understand more about the nuance of how social support is constructed and utilized to build a sense of community among this population.

**Hypothesis 3.** The third aim was to determine whether relational factors at the neighborhood level would uniquely predict sense of community beyond those at the individual and interpersonal levels. As hypothesized, positive relations with neighbors positively predicted sense of community, and alongside psychiatric distress, comprised the third block model which accounted for 42% of the variance in sense of community. Interestingly, social support at the interpersonal level dropped from the model when neighbor relations was added, suggesting considerable predictive overlap between the two variables. Indeed, correlation analyses show significant, positive associations ( $r=0.30$ ) between social support and neighbor relations (Figure 3.1). Yet, this may also speak to the importance of the social role of neighbors for this population. An interesting avenue for further inquiry could be to examine the extent to which relationships with

neighbors provide opportunities for social support for persons with serious mental illness. Given that these folks tend to have attenuated social support systems and tend to use them less frequently than others (Schwartz et al., 2009; Tsai et al., 2012), close neighbors may provide an important social link to others. Future research could parse the effect of neighbor relations across the specific components of social support (i.e., appraisal, belonging, tangible support; Cohen et al., 1985) to determine if there are unique aspects of support more or less salient to the neighbor relationship.

**Hypothesis 4.** The fourth aim was to determine whether perceived attitudes about race/ethnicity and toward people with serious mental illness at the social climate level uniquely predict sense of community beyond those at the individual, interpersonal, and neighborhood levels. As discussed earlier, positive perceptions of neighborhood social climate positively predicted sense of community, which as part of the full model, accounted for 52% of the variance. The full, final model revealed only neighbor relations and neighborhood social climate significantly predicted sense of community. Psychiatric distress dropped from the model in the last step of these analyses, suggesting that the importance of neighborhood and social climate level variables supersede the effect of intraindividual experience of symptom distress. Surprisingly, length in current housing (i.e., housing tenure) showed up as a significant predictor in this final model, although it had not done so in any earlier model. However, the estimated effect size was considerably smaller than other factors in the model, as measured by beta weights, and therefore the statistical significance could be an anomaly of the data. While housing tenure could be an interesting factor for future studies examining sense of community, these results do not suggest further interpretation of its effect in the current model.

### 4.3 Salience of Proximal vs. Distal Factors

A question that arose from the model of factors fit in the current study was whether factors more proximal or more distal to the individual (i.e., individual level upward to the social climate level) were more or less relevant to sense of community. When the full model was analyzed in the current study, factors further removed from the individual (i.e., neighbor relations and neighborhood social climate) proved to be more predictive of sense of community than those more immediate to the individual (e.g., psychiatric distress, housing history). This finding aligns with previous research that suggests the importance of neighborhood level factors for promoting well-being among people with serious mental illness (Wright et al., 2007). This could speak to a generalized salience of distal factors over proximal factors. This could also speak to the overall importance of social climate and friendly relations with neighbors in this context.

In the field of community psychology, the ecological level of analysis is an important concept for clarifying the multifactorial nature of a single problem or event (Kloos et al., 2012). However, it is important to note that in the current study, these levels were conceptual rather than contextual in that each “level” was analyzed from the perception of the individual. A study incorporating multiple contextual levels of analysis might utilize methods other than individual self-report to examine effects at organizational, neighborhood, or community levels within which the individual interacts. Alternately, unique variance in social climate might be found at higher levels of analysis though aggregated self-report and difference testing across neighborhoods (Shinn, 1990). While the current study used a more conceptual framework for examining these levels, it remains a novel approach in the clinical literature, which has long taken a traditionally

individual focus for studying outcomes among those with serious mental illness. These findings point to the importance of taking an ecological perspective to more fully inform the experience of sense of community among individuals with serious mental illness.

#### **4.4 Limitations and Directions for Future Research**

There are a few limitations related to the sample and study design that bear mentioning. First, the data was collected cross-sectionally, so only correlational and not causal inferences can be drawn from these results. While the current study provides a snapshot of important factors relevant to sense of community among people living independently with serious mental illness, future studies could employ longitudinal designs in following-up with people as they move to new neighborhoods to understand how sense of community is built over time. Given that 47% of this sample reported living in two or more residences over the prior twenty-four-month period, there may be considerable opportunity among this population to investigate dynamic factors related to establishing sense of community within a new neighborhood. Second, limitations to generalizability due to the sample being drawn from primarily African American (63%) and White (29%) participants living in Columbia, SC are important to note. Yet, additional future research conducted outside of the Southeastern United States could detect important regional differences among these populations. As African Americans have been historically underrepresented in research, this study makes an important contribution toward a more diverse literature base. However, Latinx and Asian participants were largely absent from this study and therefore these results may not reflect factors predictive of sense of community among these underrepresented groups. While the pattern of results found here do align with previous research that has studied

similar housing contexts among those without diagnoses of serious mental illness in other areas of the world (Prezza et al., 2001; Farrell et al., 2004; Kloos, Flory, Hankin, Cheely, & Segal, 2009), future studies within and outside of the United States could make concerted efforts to seek out and include Latinx and Asian participants in this type of research. Finally, there may be limitations inherent within the way that certain data were collected. While many of the variables studied here were assessed with standardized measures shown to be valid and reliable in previous research, factors like history of homelessness and housing instability were measured with single-item questions. Future research could take a more nuanced approach to understanding these variables. For instance, collecting information about types of homelessness experiences (e.g., incidental versus chronic, number of times and length of time spent homeless) and reasons for moving residences (e.g., lost lease, financial difficulties, moving to a better place) may more fully characterize these factors as they relate to sense of community. Despite these limitations, the current study helps to move the field forward relative to understanding sense of community among people living independently with serious mental illness that do not have benefit of supported housing programs. Future research should continue to investigate the experiences of this population to determine how sense of community can be promoted in the absence of support programs.

#### **4.5 Conclusions**

This study adds to the growing body of literature that highlights the importance of social ecological factors, like positive relations with neighbors and perceptions of neighborhood acceptance for mental illness and diversity, for establishing sense of community among people with serious mental illness. Admittedly, suggestions for

policies and interventions that benefit people who are independently housed and not involved with support programs are somewhat more challenging to make than for those already connected to programs like supported housing. Certainly, an expansion of housing services to include more people living with serious mental illness is warranted, as is increased funding for support programs more broadly. However, existing mental health services may provide a link to this population, as well. While none of the participants in this sample had the benefit of receiving housing supports, each of them accessed services at their local community mental health center. This connection provides an avenue of opportunity for the promotion of social ecological factors relevant to sense of community. Mental health interventions that include a focus on sense of community could arise from a blend of more traditional clinical practices (e.g., building coping skills or self-efficacy) with applied community interventions, like neighborhood coalition building and public advocacy for acceptance of mental illness and diversity. Ideally, clients would be afforded leadership roles in such an intervention, which might, in turn, promote clinical goals like skill-building and self-efficacy. This kind of dual clinical-community focus could not only promote recovery from serious mental illness, but also strengthen neighborhood ties and improve social climates, thereby increasing sense of community. Policy shifts that incorporate mental health programming with an eye toward the health of neighborhoods and communities could go a long way toward helping people with serious mental illness enjoy a sense of belonging and community where they live.

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## APPENDIX A

### SENSE OF COMMUNITY

*Now I will ask your opinion about different things about your neighborhood. Let me know how much you agree or disagree with each statement.*

	<b>1 = Strongly Disagree</b> <b>2 = Disagree</b> <b>3 = Neither Disagree or Agree</b> <b>4 = Agree</b> <b>5 = Strongly Agree</b>				
1. I think my neighborhood is a good place for me to live	1	2	3	4	5
2. People on this block do not share the same values	1	2	3	4	5
3. My neighbors and I want the same things from the neighborhood	1	2	3	4	5
4. I can recognize most of the people who live in my neighborhood	1	2	3	4	5
5. I feel at home in this neighborhood	1	2	3	4	5
6. Very few of my neighbors know me	1	2	3	4	5
7. I care about what my neighbors think of my actions	1	2	3	4	5
8. I have no influence over what this neighborhood is like	1	2	3	4	5
9. If there is a problem in this neighborhood people who live here can get it solved	1	2	3	4	5
10. It is very important to me to live in this particular neighborhood	1	2	3	4	5
11. People in this neighborhood generally don't get along with each other	1	2	3	4	5
12. I expect to live in this neighborhood for a long time	1	2	3	4	5
*13. People in my neighborhood watch out for each other	1	2	3	4	5
*14. It is very important for me to feel a strong sense of community in my neighborhood	1	2	3	4	5
*15. I feel a strong sense of community in my neighborhood	1	2	3	4	5

\*items 13, 14, and 15 are from the Brief Sense of Community Index (BSCI; Long et al., 2003)

**APPENDIX B**  
**RESIDENTIAL HISTORY**

*Now I need to go over specific information about each of the places that you have lived in the past couple of years. We will start with where you are living now and work backwards from there.*

**1. What is your address?**

Street	City	State	Zip Code

**2. Date moved in to current residence:**      \_\_\_ / \_\_\_ / \_\_\_

**3. Where did you live before moving into your current place? (RECORD LAST TWO YEARS)**

Address	Type of Residence	Length of Stay	Reason for Moving
<i>Street</i>			
<i>City</i>			
<i>Zip</i>			
Address	Type of Residence	Length of Stay	Reason for Moving
<i>Street</i>			
<i>City</i>			
<i>Zip</i>			
Address	Type of Residence	Length of Stay	Reason for Moving
<i>Street</i>			
<i>City</i>			
<i>Zip</i>			
Address	Type of Residence	Length of Stay	Reason for Moving
<i>Street</i>			
<i>City</i>			
<i>Zip</i>			

**4. Have you ever been homeless? (By homeless, I mean you didn't have a place to stay every night, or stayed in shelter or on the streets)      YES      NO**

## APPENDIX C

### BRIEF SYMPTOM INVENTORY

*Next, I will read a list of problems that people sometimes have. I will ask you how much they bother you. When I read a question, please select the answer that best describes how much you were distressed by each one during the past 30 days, including today.*

<b>In the past month, how much were you distressed by . . .</b>	<b>0 = Not At All</b> <b>1 = A Little Bit</b> <b>2 = Moderately</b> <b>3 = Quite A Bit</b> <b>4 = Extremely</b>				
1. Nervousness or shakiness inside	0	1	2	3	4
2. Faintness or dizziness	0	1	2	3	4
3. The idea that someone else can control your thoughts	0	1	2	3	4
4. Feeling others are to blame for most of your troubles	0	1	2	3	4
5. Trouble remembering things	0	1	2	3	4
6. Feeling easily annoyed or irritated	0	1	2	3	4
7. Pains in heart or chest	0	1	2	3	4
8. Feeling afraid in open spaces or on the streets	0	1	2	3	4
9. Thoughts of ending your life	0	1	2	3	4
10. Feeling that most people cannot be trusted	0	1	2	3	4
11. Poor appetite	0	1	2	3	4
12. Suddenly scared for no reason	0	1	2	3	4
13. Temper outbursts that you could not control	0	1	2	3	4
14. Feeling lonely even when you are with people	0	1	2	3	4
15. Feeling blocked in getting things done	0	1	2	3	4
16. Feeling lonely	0	1	2	3	4
17. Feeling blue	0	1	2	3	4
18. Feeling no interest in things	0	1	2	3	4
19. Feeling fearful	0	1	2	3	4
20. Your feelings being easily hurt	0	1	2	3	4
21. Feeling that people are unfriendly or dislike you	0	1	2	3	4
22. Feeling inferior to others	0	1	2	3	4
23. Nausea or upset stomach	0	1	2	3	4
24. Feeling that you are watched or talked about by others	0	1	2	3	4
25. Trouble falling asleep	0	1	2	3	4

26. Having to check and double-check what you do	0	1	2	3	4
27. Difficulty making decisions	0	1	2	3	4
28. Feeling afraid to travel on buses, subways, or trains	0	1	2	3	4
29. Trouble getting your breath	0	1	2	3	4
30. Hot or cold spells	0	1	2	3	4
31. Having to avoid certain things, places, or activities because they frighten you	0	1	2	3	4
32. Your mind going blank	0	1	2	3	4
33. Numbness or tingling in parts of your body	0	1	2	3	4
34. The idea that you should be punished for your sins	0	1	2	3	4
35. Feeling hopeless about the future	0	1	2	3	4
36. Trouble concentrating	0	1	2	3	4
37. Feeling weak in parts of your body	0	1	2	3	4
38. Feeling tense or keyed up	0	1	2	3	4
39. Thoughts of death or dying	0	1	2	3	4
40. Having urges to beat, injure, or harm someone	0	1	2	3	4
41. Having urges to break or smash things	0	1	2	3	4
42. Feeling very self-conscious with others	0	1	2	3	4
43. Feeling uneasy in crowds, such as shopping or at a movie	0	1	2	3	4
44. Never feeling close to another person	0	1	2	3	4
45. Spells of terror or panic	0	1	2	3	4
46. Getting into frequent arguments	0	1	2	3	4
47. Feeling nervous when you are left alone	0	1	2	3	4
48. Others not giving you proper credit for your achievements	0	1	2	3	4
49. Feeling so restless that you couldn't sit still	0	1	2	3	4
50. Feelings of worthlessness	0	1	2	3	4
51. Feeling that people will take advantage of you if you let them	0	1	2	3	4
52. Feelings of guilt	0	1	2	3	4
53. The idea that something is wrong with your mind	0	1	2	3	4

## APPENDIX D

### INTERPERSONAL SUPPORT EVALUATION LIST (ISEL-12)

*These next questions ask about relationships with other people. I will read a list of statements, each of which may or may not be true about you. For each statement choose "definitely true" if you are sure it is true about you and "probably true" if you think it is true but are not absolutely certain. Similarly, you should choose "definitely false" if you are sure that statement is false and "probably false" if you think it is false but are not absolutely certain.*

	1 = Definitely False 2 = Probably False 3 = Probably True 4 = Definitely True			
1. If I wanted to go on a trip for a day (for example, to the park or the lake), I would have a hard time finding someone to go with me.	1	2	3	4
2. I feel that there is no one I can share my most private worries and fears with.	1	2	3	4
3. If I were sick, I could easily find someone to help me with my daily chores.	1	2	3	4
4. There is someone I can turn to for advice about handling problems with my family.	1	2	3	4
5. If I decide one afternoon that I would like to go to a movie that evening, I could easily find someone to go with me.	1	2	3	4
6. When I need suggestions on how to deal with a personal problem, I know someone I can turn to.	1	2	3	4
7. I don't often get invited to do things with others.	1	2	3	4
8. If I had to go out of town for a few weeks, it would be difficult to find someone who would look after my house or apartment (the plants, pets, etc.).	1	2	3	4
9. If I wanted to have lunch with someone, I could easily find someone to join me.	1	2	3	4

10. If I was stranded from home (too far to walk), there is someone I could call who could come and get me.	1	2	3	4
11. If a family crisis arose, it would be difficult to find someone who could give me good advice about how to handle it.	1	2	3	4
12. If I needed some help in moving to a new house or apartment, I would have a hard time finding someone to help me.	1	2	3	4

## APPENDIX E

### NEIGHBOR RELATIONS

*For these next questions, how much you AGREE or DISAGREE with the following statements?*

	1 = Strongly Disagree	2 = Disagree	3 = Neither Disagree or Agree	4 = Agree	5 = Strongly Agree
1. I can count on a neighbor for help when I need it.	1	2	3	4	5
2. There is no one in my neighborhood with whom I'm close.	1	2	3	4	5
3. I have a close relationship with a neighbor (not necessarily a romantic relationship).	1	2	3	4	5
4. If I needed it, one of my neighbors would give me a ride to an appointment.	1	2	3	4	5
5. My neighbors and I argue a lot.	1	2	3	4	5
6. If I needed someone to talk to about a problem, I could talk with one of my neighbors.	1	2	3	4	5
7. My neighbors keep an eye on my apartment when I am gone.	1	2	3	4	5
8. My neighbors invite me to do things with them.	1	2	3	4	5
9. My neighbors complain about me or my apartment.	1	2	3	4	5



APPENDIX F  
NEIGHBORHOOD SOCIAL CLIMATE

*Okay, now I will ask about how much you AGREE or DISAGREE with the following statements about your neighborhood.*

	1 = Strongly Disagree 2 = Disagree 3 = Neither Disagree or Agree 4 = Agree 5 = Strongly Agree				
1. I feel safe in my neighborhood.	1	2	3	4	5
2. Sometimes I feel unwelcome in my neighborhood because of my ethnicity and my cultural background.	1	2	3	4	5
3. People in my neighborhood are friendly to everybody no matter what the person's skin color or ethnic background.	1	2	3	4	5
4. Police treat people differently in my neighborhood because of the color of their skin.	1	2	3	4	5
5. Sometimes, people in my neighborhood hassle me when I'm out walking.	1	2	3	4	5
6. I need to be careful who I talk to in my neighborhood.	1	2	3	4	5
7. My neighborhood is an easy place to live.	1	2	3	4	5
8. People in my neighborhood treat me as an equal.	1	2	3	4	5
9. Sometimes I feel unwelcome in my neighborhood because of my mental illness.	1	2	3	4	5
10. People in this neighborhood know that I have a mental illness.	1	2	3	4	5
11. Some people in my neighborhood give me a hard time because of my mental illness.	1	2	3	4	5
12. People in this neighborhood are afraid of me because of my mental illness.	1	2	3	4	5