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Who Puts the "Support" in Supportive Housing? The Impact of Housing Staff on Resident's Well-Being, and the Potential Moderating Role of Self-Determination

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Who Puts the "Support" in Supportive Housing?

The Impact of Housing Staff on Resident's Well-being, and the Potential Moderating Role of Self-determination

by

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A thesis submitted in partial fulfillment of the
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Thesis Committee:
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Abstract

The provision of residential and community-based services for individuals with serious mental illness (SMI) has become increasingly important following the deinstitutionalization movement. Much of the existing research on supportive housing focuses on housing outcomes rather than exploring how the program helps its residents thrive in the broader community. This study draws upon data collected from 176 people with SMI residing in 16 supportive housing locations in Portland, Oregon. Analyses employed an ecological approach, exploring how housing staff support relates to residents' well-being at three levels of analysis: loneliness (interpersonal level), residential satisfaction (housing and neighborhood level), and sense of community (community level). Staff support was found to be related to lower levels of loneliness, higher residential satisfaction, and a higher sense of community. Self-determination was considered as a moderator to understand the role of residents' agency in the relationship between staff support and well-being outcomes. Self-determination moderated the relationship between staff support and residential satisfaction; however, it did not moderate the relationship between staff support and sense of community or loneliness. This study has implications for policymakers, researchers, and interventionists, expanding upon the limited body of research on staff support and the well-being of residents in a supportive housing environment.

Acknowledgements

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I would also like to thank two of my most influential mentors, Ron Copeland and Dr. Tracy Zinn for sparking my passion for research and guiding me to this work. Thank you to my family and friends for their endless support and encouragement. Finally, thank you to my mother, Dr. Delise Dickard, who inspired me to pursue my PhD and continues to inspire me every day.

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Introduction

Housing is a fundamental need that profoundly impacts an individual's well-being. Despite being internationally recognized as a human right, prevalence of homelessness is high, with over half a million Americans recorded as homeless on any given day (Henry et al., 2018). Researchers have spent decades investigating various causes of homelessness, and while leading causes are related to poverty and lack of housing, mental illness is commonly associated with homelessness. Individuals with serious mental illnesses (SMI), such as schizophrenia, bipolar disorder, and major depression, are disproportionately represented among the homeless population, where one-third of individuals experiencing homelessness have a serious mental illness as compared with 5% of the general population (Folsom et al., 2005; NIMH, 2020).

Historically, the mental health field has distanced itself from housing, focusing its role on clinical treatment rather than utilizing a whole-person approach (Carling, 1993). Early treatment of SMI occurred in institutionalized settings, where patients lived full-time in hospitals and received care for their acute symptoms. Conditions in these hospitals were infamously deplorable and did not emphasize reintegration or transition across levels of care. Several converging forces led to the deinstitutionalization movement, a mass exodus of patients out of state hospitals and into communities. These forces included the emergence of research noting the harmful effects of hospitalization on social adjustment, increased research showing the importance of environmental factors

on clinical outcomes, and the introduction of phenothiazine medications that more effectively treat psychotic symptoms (Carling, 1993).

Another important force that led to calls for deinstitutionalization is the cost associated with long-term inpatient care and the desire for individuals to live at home independently, or with their families. The Community Mental Health Act of 1963 introduced an alternative to hospitalization, where patients could be treated at community-based mental health centers and still live and work at home. Over 700 community mental health centers (CMHCs) emerged by 1980, with an increase in outpatient episodes from 379,000 in 1955 to 4.6 million by 1975 (Carling, 1995). While community mental health centers filled an essential need for the care of acute, treatment-responsive individuals, there remained a gap in care for individuals with serious mental illnesses who needed more intensive and long-term support (Hennessy & Greenberg, 1994).

Supportive housing was one of the programs that emerged to fill this gap– providing affordable housing and community-based mental health services for individuals with serious mental illnesses (Rudkin, 2003). This program takes a person-in-context approach, recognizing that treatment cannot start and end within the confines of an office building. Additional philosophical underpinnings of supportive housing include housing as a prerequisite for effective rehabilitation; increased emphasis on community support rather than professional support; individualized and flexible services; and social integration (Tabol et al., 2010). Most importantly, supportive housing as an alternative to long-term hospitalization represents the idea that recovery is possible for individuals with

SMI. With the appropriate amount of structure and support, individuals with SMI can live and contribute to society in diverse and meaningful ways.

Another movement centering recovery that helped to propel supportive housing to the forefront of housing interventions was the transition from treatment-first programs to housing-first. Housing First was a term first coined in the 1990s to describe the philosophy of quickly housing individuals experiencing homelessness, with a focus on treatment for substance use and mental health disorders only after housing stability was obtained (Padgett et al., 2016). This model was a massive shift from previous housing approaches, where individuals were often required to prove sobriety and consistency in treatment before being considered for housing (Schiff & Schiff, 2014).

Supportive housing programs range in the number of services they provide, allowing for different levels of supervision to meet individuals' unique needs (Wright & Kloos, 2007). Residents hold the lease to their apartments and are responsible for paying a portion of their income toward rent and utilities. The utilization of community mental health services varies widely across residents. Some individuals may exclusively receive medications from their mental health center, while others may receive on-site case management services and in-home medical or mental health support through governmental programs (Wright & Kloos, 2007).

While there is still progress to be made in the development, implementation, and availability of supportive housing programs, existing research shows promise for positive impacts on individuals and communities. One longitudinal study compared 700 formerly hospitalized patients with a hospitalized control group at the five-year mark of living in a

supportive housing environment in the community (Leff & Treiman, 2000). Researchers found the supportive housing group to have decreased psychiatric symptoms, significant improvements in social behavior and life skills, and increased social networks compared to the hospitalized group. This study was one of the first large, controlled studies to show the positive impacts of deinstitutionalization and the potential for better outcomes for clients living in a community setting (Leff & Treiman, 2000).

More recent studies continue to show promise for supportive housing to impact residential retention and well-being outcomes. Aubry (2020) conducted a meta-analysis reviewing existing research on supportive housing and found that permanent supportive housing significantly improved housing stability, with no negative effects on social and health outcomes. Moreover, analyses revealed promise for the long-term effectiveness of supportive housing, as housing stability outcomes remained significant at the six-year follow-up. Study types reviewed in this meta-analysis included randomized control trials as well as quasi-experimental trials.

Varying methodologies and frameworks have been used to assess the effectiveness of supportive housing. Kloos and Shah (2009), for instance, suggested a social-ecological approach to investigating the supportive housing model. This approach considers individuals as part of a larger environment that influences how they move about the world. Specifically, consideration is given to interpersonal relationships; physical and social characteristics of housing and neighborhood environments; and broader community factors on an individual's experiences and success within supportive housing.

The Present Study

While providing quick, low-barrier housing may seem like a common-sense solution to homelessness, many have criticized supportive housing for providing housing without connecting individuals to the services and supports they need (Padgett, 2013). Existing research focuses primarily on housing outcomes, while research on well-being occurs in a separate clinical setting. This separation leaves a significant gap in our understanding of the breadth of impact that supportive housing programs may have on its residents. Moreover, existing research has yet to identify the specific program components and supports that impact residents positively (Leickly & Townley, 2021).

This study seeks to contribute to the community mental health and housing literature by focusing on one unique and important aspect of supportive housing—the presence of on-site support staff. This study examines the impact of housing staff support on the well-being of individuals with SMI living in a supportive housing environment. To better capture the complex and multidimensional concept of well-being in the context of supportive housing, the study uses an ecological systems approach as suggested by Kloos and Shah (2009). Specifically, well-being outcomes are examined at three levels of analysis: interpersonal, housing/ neighborhood, and the broader community. In alignment with the core value of independence in supportive housing, the study also considers the impact of self-determination on the relationship between staff support and well-being. Including this variable in the model helps to consider the important role that the resident plays in seeking out and receiving services. In the following section, I will introduce

these concepts in more detail and offer a review of the relevant research to provide context for the current study.

Role of Staff

As perspectives on mental healthcare transitioned from a symptom treatment approach to a whole-person approach, the role of mental health clinicians changed drastically. Theories such as Bronfenbrenner's (1974) Ecological Systems Theory and Engel's (1977) Biopsychosocial Model drove this shift in perspective, recognizing that individuals' well-being is impacted by more than just their biology. As such, treatment should adjust to account for the role of the environment in shaping one's experience. This knowledge sparked the emergence of new, non-clinical roles in the mental health field, including peer support specialists, health and wellness coaches, and case managers (Myrick & Vecchio, 2016). These mental health professionals assist residents with more than just symptom management, offering support with social skills, navigating community resources, and increasing physical activity.

While the majority of research on well-being outcomes for individuals with SMI focuses on clinical intervention in an office setting, there is an emerging field of study examining the impact of staff on the individual's integration and adaptative functioning within community settings. One setting this has been explored is in clubhouse programs. A clubhouse model is similar to supportive housing in its values around the individual's independence and recovery; however, clubhouses operate as day programs for clients to participate in and contribute to but do not provide housing. Nonetheless, these programs are excellent examples of a successful recovery environment for people with SMI (Schiff

et al., 2008). Chen (2016) used qualitative techniques to explore staff practices in a clubhouse setting and found that social relationships with staff members fostered goal completion in clients. Moreover, they found that negative staff relationships were one reason that clients stopped attending programming at the clubhouse. These findings suggest that staff can influence clients' experiences in community-based programs.

Another qualitative study explored beneficial relationships in supportive housing from the staff's perspective (Lindvig et al., 2020). The overarching theme of this study was the importance of reciprocity in resident-staff relationships. Researchers found that contributions from both resident and staff, and a recognition of these contributions, were essential to progress made on mutual goals. Moreover, closer resident-staff relationships led to higher motivation for staff to find creative solutions to the resident's complex resource needs, indicating the important role the resident plays in the staff's ability and willingness to support them.

Quantitative research on staff's impact in supportive housing is much more limited. Most of the findings on staff impacts are one small component of a larger program evaluation framework. The research in this area primarily focuses on the impact staff support can have on housing outcomes (e.g., housing retention) rather than well-being outcomes of residents. Lee (2009), for instance, found that a greater level of perceived supportiveness of program staff was associated with a lower risk of negative departure from housing. Another study found that case managers' efforts to secure social security income positively predicted being housed one year later (Kasprow et al., 2000).

Participants were more likely to obtain housing if their case manager accompanied them to public housing authority appointments on at least one occasion (Kasprow et al., 2000).

Another quantitative study explored staff activity in supportive housing and found that a higher proportion of staff in relation to residents was not a positive contributor to residents' well-being (Felce et al., 2002). This finding aligns with previous research that indicates that simply increasing staff does not positively impact the resident's outcomes (Mansell et al., 2013). Felce and colleagues (2002) did find, however, that having staff with more experience was associated with residents receiving more attention and assistance. This study indicates the importance of retaining long-term staff in this environment. The consistency of staff also provides greater opportunities for residents to develop trust and familiarity with their support providers.

Each of the researchers cited in this section called for further research on the implications of staff support and resident housing and well-being outcomes. Indeed, one of the primary objectives of this study is to add to the limited literature on the impact of staff on residents' well-being within a supportive housing environment. By examining this phenomenon at multiple levels of analysis, this study aligns with core values in the community psychology field. This model offers a more holistic view of the staff's role in the well-being of residents in supportive housing. In the following section, I will introduce three well-being outcomes considered in this study, starting with loneliness at the interpersonal level, moving on to residential satisfaction at the housing/ neighborhood level, and concluding with sense of community at the broader community level. While well-being is multi-faceted and operationalized in many different ways across studies,

these particular outcomes were selected based on their predominance in the community mental health literature and their stated importance among individuals with SMI (Townley, 2015).

Loneliness

Loneliness has been explored extensively among individuals with SMI due to its high prevalence in this population and its connection to negative health outcomes (Trémeau et al., 2016). Loneliness is an emotional state that reflects unpleasant subjective experiences due to perceived social isolation (Weiss, 1978). Studies have linked loneliness with high incidences of psychiatric hospitalization, becoming sick, and even dying prematurely (Caspi et al., 2006; Fortuna et al., 2020).

Individuals with serious mental illnesses are more likely to experience loneliness, with over three-fourths of adults with SMI reporting feelings of loneliness compared to one-fourth of the general population (Perese & Wolf, 2005). There are several potential reasons for this discrepancy. First, research has consistently demonstrated that people with SMI have significantly fewer people in their social networks, which predicts loneliness (Chang et al., 2016). Second, people with SMI often feel excluded from social settings due to the stigma against mental illness (Shwartz & Gronemann, 2009). Finally, symptoms of mental illness such as depressed mood and paranoia can lead to a tendency to isolate and not reach out when individuals need support.

The adverse health outcomes associated with loneliness and the alarming prevalence of loneliness amongst individuals with SMI indicate the importance of examining this construct within a supportive housing environment. Weiner et al. (2010)

found that people living in supportive housing reported significantly greater feelings of isolation and loneliness than people living in other community residences. These researchers also found that feelings of isolation were stronger in resident's first three month of residing in the housing site. Consistent with these findings, Nagata and colleagues (2022) found that individuals with SMI in supportive housing reported higher loneliness immediately after moving into their residences. They also found that participants reported lower loneliness the longer they had been in their current residence, with the lowest loneliness levels after three years at the same residence. These findings suggest that greater housing stability is linked to lower levels of loneliness. Ferreiro and colleagues (2020) conducted a randomized controlled trial exploring loneliness in supportive housing and found no significant differences in loneliness between the Housing First group (i.e., individuals residing in a supportive housing environment) and the treatment-as-usual group at baseline. However, they did note that participants with SMI reported high levels of loneliness at the 8-month assessment, and the increase was higher for Housing First participants.

One qualitative study explored how tenants in supportive housing confront loneliness and found that an individual's ability to maintain social connections and family involvement was most important in managing loneliness (Piat et al., 2017). Staff members made concerted efforts to mitigate loneliness among their residents by providing on-site activities and offering to take individuals into the community. Residents expressed appreciation for their staff, stating they like "seeing their faces around" and

that “There’s lots of support, there’s lots of people to talk to, and there’s security” (Piat et al., 2017, pg. 196).

Research on staff’s ability to decrease loneliness in supportive housing is limited; however, this has been explored in a residential treatment setting with other populations. One study exploring loneliness in an aged care facility found that residents who required nurses to support them with daily activities reported lower levels of loneliness after controlling for social network quality (Franklin et al., 2006). Another qualitative study reported staff support as a common theme when exploring factors that decreased loneliness among residents in a managed care facility (Ballin & Balandin, 2007). These findings illustrate the potential role of staff support in decreasing loneliness among residents, although research has not been conducted specifically among individuals with SMI living in community settings. The current study intends to fill this gap in the literature by exploring the impact of housing staff support on loneliness.

Residential Satisfaction

Another commonly explored well-being construct in the mental health and housing literature is residential satisfaction. Residential satisfaction is a multidimensional construct encompassing physical housing and neighborhood characteristics, access to resources, and social support and safety perceptions. The distinction in the literature between residential, housing, and neighborhood satisfaction is often unclear, and these terms are often used interchangeably. This study will use residential satisfaction as the overarching concept to collectively assess both housing and neighborhood satisfaction. Before delving into the current research on residential satisfaction and supportive

housing, it is important to consider the historical context of neighborhood experiences of individuals with SMI.

In the early 1960s, as individuals with serious mental illnesses were moved out of hospitals, many were forced into distressed and impoverished sections of inner cities where the community mental health and human services were located (Dear, 1977). The accompanying surge of homelessness brought upon by Reagan-era disinvestments in housing and health services in the 1980s led researchers and policymakers to turn their attention toward improving both the housing and neighborhood environments in which people lived. Despite these efforts, research has revealed that individuals with SMI still face more challenges with their residential environments than other groups.

One study comparing neighborhood characteristics found that individuals with SMI lived in neighborhoods that were more distressed, dispersed, and unstable than those with developmental disabilities (Wong & Stanhope, 2009). This finding is concerning, as the physical deterioration of neighborhoods is negatively associated with neighborhood satisfaction and social contact (Kruger et al., 2007). These physical neighborhood features represent a large part of residential satisfaction and are connected to other well-being outcomes, such as quality of life (Wong et al., 2018; Wright & Kloos, 2007).

Another integral component of residential satisfaction is perceived social support and connectedness. Aubry & Myner (1996) found that individuals in supportive housing report less social contact with neighbors and lower life satisfaction than individuals in the broader community. Moreover, Lam (2021) explored linkages between neighborhood characteristics and loneliness and found that higher levels of loneliness were linked to

lower levels of neighborhood satisfaction. These findings suggest the importance of fostering social and community integration in a supportive housing environment. These are necessary efforts, as positive social interaction with neighbors predicts improved well-being (Kloos & Shah, 2009).

Despite these concerning findings comparing individuals with SMI to other populations, research within this community shows promise for residential satisfaction in supportive housing. Research has consistently demonstrated that individuals in supportive housing reported higher residential satisfaction than those in more restrictive environments such as residential treatment centers (Tsemberis et al., 2003; Newman, 2001). While these findings show a great deal of progress in the field, there is still a long way to go to close the gap in residential satisfaction between individuals with SMI and the broader community.

Support from on-site staff is one unique offering of supportive housing that could play a role in closing this gap. Patterson and colleagues (2014) compared participants in supportive housing with a treatment-as-usual group and found that individuals in supportive housing had improved psychiatric outcomes. The authors attributed these outcomes to on-site staff support, specifically staff meeting residents in their neighborhoods to assist with community integration. Moreover, Piat et al.'s (2009) qualitative study with residents of a supportive housing program found that for some participants, a sense of security was associated with the staff's physical presence at the housing site. While the research examining staff support and neighborhood satisfaction is

limited, the above findings suggest that staff support may be a critical catalyst for increasing residential satisfaction in supportive housing.

Sense of Community

The final level of analysis explored in this study is the individuals' sense of community (SOC). SOC is one of the most widely explored constructs in Community Psychology and is associated with many favorable outcomes for individuals with SMI (Townley & Kloos, 2009). Sarason (1974) first defined this concept as a psychological sense of community (PSOC) and argued its relevance in mainstream psychology as an integral part of community and collective well-being. McMillan & Chavis (1986) expanded this work by defining four key elements of SOC. The first element, *membership,* describes the feeling of belonging or personal relatedness. The second element is *influence*, which describes a sense that one can impact the group and the group can impact the individual. The third element, *integration and fulfillment of needs*, captures the feeling that one can address their needs through resources from their group. The final element is *shared emotional connection* or shared history and experiences within the group. These four elements culminate to what Mcmillan & Chavis describe as "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (pg. 9).

Sense of community plays a significant role in the health and well-being of a wide range of populations (Pretty et al., 2006). Kitchen and colleagues (2011) found a significant association between SOC and health, with a higher association for mental

health, even after controlling for socioeconomic status and geography. This finding suggests that SOC is a particularly relevant outcome to examine for individuals who experience mental illness. Moreover, SOC is related to various other individual outcomes, including safety (Ziersch et al., 2005); length of residence (Perkins, 2009); loneliness (Pretty et al., 1996); and severity of mental health symptoms (Ellaway et al., 2001).

Given that individuals with SMI experience higher rates of loneliness, have smaller social networks, and often experience stigma because of their mental illness, sense of community has become a prominent area of focus among community mental health researchers. For example, Townley and Kloos (2011) conducted a study of individuals with SMI in supportive housing and found that over half of their study participants said a strong sense of community was very important to them. However, only 32% of participants reported having a strong sense of community. Terry & Townley (2019) found that sense of community was essential in mediating the relationship between community participation and psychiatric distress among adults with SMI. These findings suggest the importance of identifying ways to bolster sense of community among members of this population to decrease psychological distress and increase well-being.

Existing research on supportive housing staff's ability to connect residents to the broader community is limited, yet promising. Forenza & Lardier (2017) facilitated focus groups with two groups of formerly homeless individuals with SMI to examine how they experience community in supportive housing. Both groups noted the importance of staff

in facilitating community and connecting residents to outside resources. Participants expressed the importance of staff-led meetings to allow residents' voices to be heard and facilitate community outings such as park barbecues. Further, a qualitative study conducted by McCarthy and Nelson (1993) found that staff support was essential to community integration for individuals in supportive housing. Participants in this study regarded staff positively and reported that they assisted with problem-solving and connected them to community resources. These findings suggest that staff in supportive housing have the unique ability to foster a sense of community amongst residents by connecting residents to opportunities for participation in the broader community.

Self-determination

The evidence outlined above suggests that staff support may favorably impact residents' loneliness, residential satisfaction, and sense of community. However, additional factors may influence the relationship between staff support and these three well-being outcomes. One such factor is the resident's self-determination, a concept developed by Deci and Ryan (1985). This theory is rooted in the assumption that a need for growth drives behavior, while intrinsic motivation drives change. Deci and Ryan (2000) have since expanded their theory to consider three basic human needs: autonomy, competence, and relatedness. Autonomy refers to the sense that one has control over their own life and behavior. Competence is the need to cultivate knowledge, skills, and mastery over topics and tasks that are important to them. Relatedness, also referred to as connection, refers to the need for belonging and connectedness to others. An individual low in self-determination has little to no motivation and struggles to meet these three

basic needs. In contrast, a highly self-determined person would have high motivation to increase control over their life, develop mastery over subjects of importance to them, and increase their connectedness to others.

Self-determination theory (SDT) suggests that the client's autonomy is an integral determinant of persistence and progress in treatment (Williams et al., 1998). Additional studies support this early claim, finding self-determination to be one of the critical determinants of quality of life for individuals with SMI. For example, Jochems and colleagues (2017) explored the impact of self-determination on treatment engagement, psychosocial functioning, and quality of life in a sample of outpatients with SMI. Researchers found that self-determination explained between 18 and 36% of the variance in these three clinical outcomes, suggesting its importance in developing interventions for individuals with SMI. Moreover, a qualitative study exploring self-determination in individuals with SMI found that engagement in their own care was central to obtaining what they hope to gain from their mental health services (Mattner et al., 2017). Accordingly, SDT has gained traction in recent years as a tool for developing psychological and community-based interventions for individuals with SMI (Medalia & Brekke, 2010).

As one of the core tenants of supportive housing is facilitating independence, it is crucial to consider the role that self-determination plays in the relationship between staff support and well-being outcomes. Early research suggests that staff support influences residents' autonomy and vice versa. One study on supportive housing found that the ability to make choices and practice autonomy was contingent on program structure and

the quality of staff relationships (Pejlert et al., 1999). Another study found that access to trained staff was associated with a higher quality of life and increased autonomy (Peterson et al., 2021). Consistent with other research in supportive housing, the quality of staff relationships is more important than quantity of staff when fostering autonomy. One study found that residents report lower levels of autonomy in relation to higher staff support when that support is not perceived favorably (Welch & Cleak, 2018).

Research analyzing staff experiences emphasizes the importance of the resident's autonomy in the staff's willingness to provide support. Lindvig et al. (2020) conducted focus groups with supportive housing staff and found that residents' ability to use help was essential for staff to help residents. When residents took ownership of their problems and were willing to accept help, staff found it easier to develop creative solutions to address their complex needs. This suggests that staff may provide higher quality support to residents with high self-determination and motivation.

The above findings indicate the need to consider self-determination as a moderator in the relationship between staff support and resident well-being. While self-determination has not been considered a moderator in the supportive housing literature, it has been examined as a moderator in other research among individuals with SMI to examine depressive symptoms and suicidality (Bamonti et al., 2014). Another study examining an alcohol intervention for college students found that self-determination moderated the association between intervention and outcome, such that for highly self-determined individuals, the intervention was more effective (Neighbors et al., 2006).

These findings suggest that self-determination may be a useful moderator in evaluating programs for individuals with serious mental illnesses.

Study Purpose, Research Questions, and Hypotheses

A foundational assertion of supportive housing is that recovery is possible for individuals with serious mental illnesses. With the appropriate amount of structure and support, individuals with SMI can live and contribute to society in meaningful ways. Despite attempts to foster independence and thriving, residents of these programs still struggle with their well-being as compared to the general population. This understanding has led to criticisms that residents in supportive housing programs are not receiving the support they need to thrive independently in their communities. This is an understandable concern, as research on community integration and well-being among residents in supportive housing is limited. Further research is needed to demonstrate the impact that supportive housing can have on other facets of residents' lives than simply residential stability. Moreover, research can provide insight into what specific components of supportive housing fosters well-being to inform funding and future directions for the program.

This study considers how housing staff support relates to resident well-being. In recognizing the resident as active contributors to their experiences in supportive housing, this study also considers how self-determination may impact this association. Using an ecological approach allows for a more valid and well-rounded understanding of the human experience as inherently intertwined with the individual’s environment. As such,

each research question outlined below is considered at multiple levels of analysis: interpersonal, housing/ neighborhood, and community.

Research Question 1: Does housing staff support in a supportive housing environment relate to residents' well-being outcomes at multiple levels of analysis (see Figure 1)?

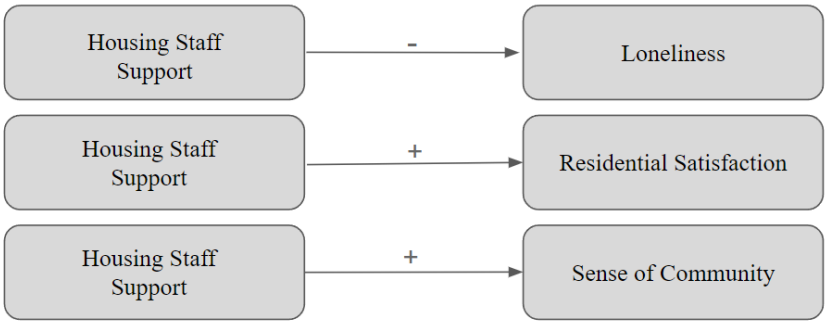
Hypothesis 1a: Stronger housing staff support will be associated with lower loneliness

Hypothesis 1b: Stronger housing staff support will be associated with higher residential satisfaction

Hypothesis 1c: Stronger housing staff support will be associated with higher sense of community

Figure 1

Conceptual model of the relationship between housing staff and well-being outcomes



Research Question 2: How does self-determination affect the strength of the association between housing staff support and residents' well-being outcomes at multiple levels of analysis (see Figure 2)?

Hypothesis 2a: The relationship between housing staff support and loneliness will be moderated by self-determination, such that for residents with higher self-

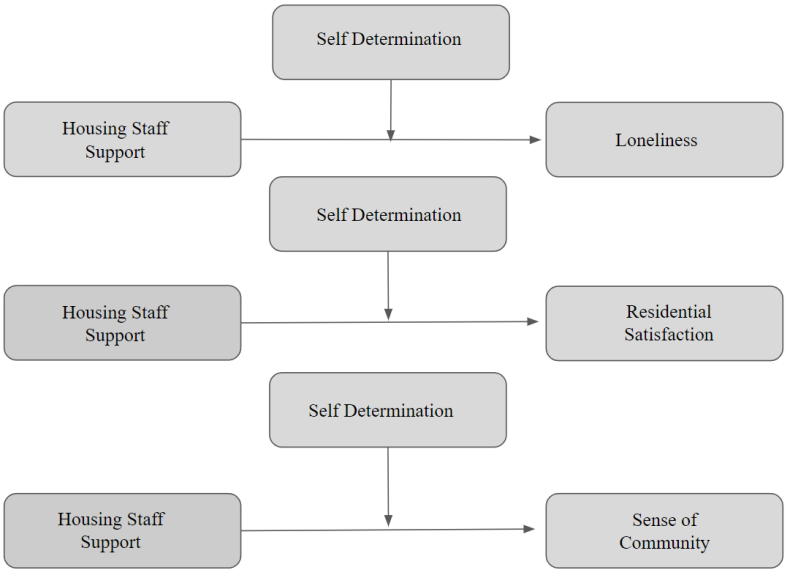
determination, the association between housing staff support and loneliness will be more strongly negative relative to those with lower self-determination

Hypothesis 2b: The relationship between housing staff support and residential satisfaction will be moderated by self-determination, such that for residents with higher self-determination, the association between housing staff support and residential satisfaction will be more strongly positive relative to those with lower self-determination

Hypothesis 2c: The relationship between housing staff support and sense of community will be moderated by self-determination, such that for residents with higher self-determination, the association between housing staff support and SOC will be more strongly positive relative to those with lower self-determination.

Figure 2

Conceptual Model of the Moderation Analyses



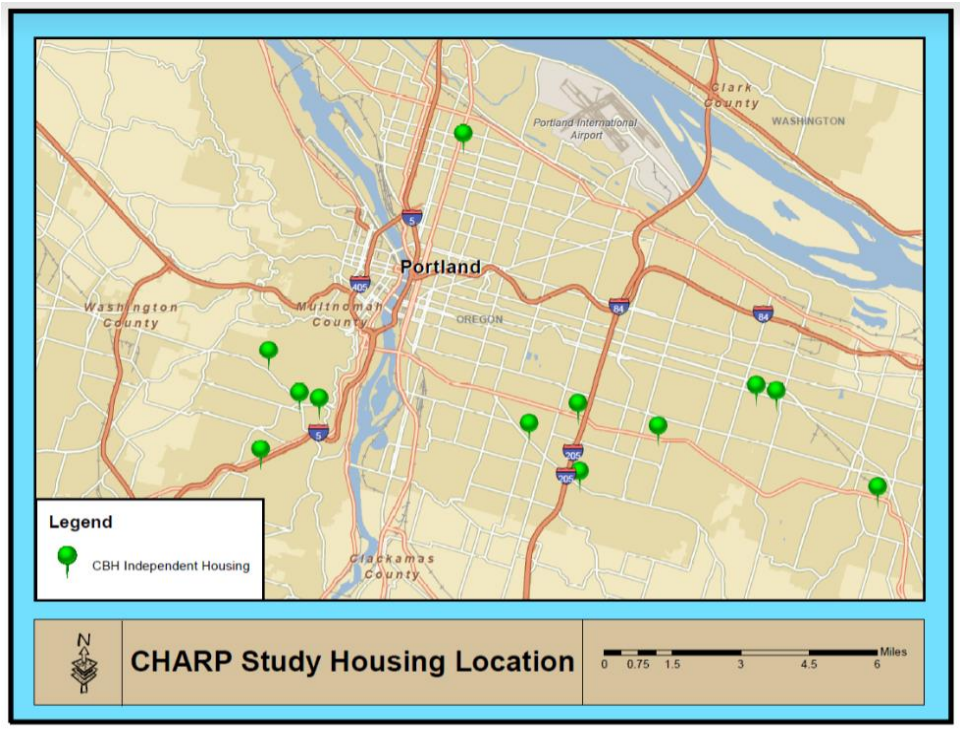
Method

Participants

This study examines data collected from 176 residents of Cascadia Behavioral Healthcare's independent supportive housing in Portland, Oregon in 2014. Cascadia Behavioral Healthcare is a certified community behavioral health center serving primarily low-income populations in the Portland Metropolitan area. Cascadia provides permanent supportive housing to approximately 240 housing sites, dispersed amongst 16 Portland neighborhoods (see Figure 3). Their supportive housing programs includes supports such as housing retention services, case management, skills trainings, and other mental health services. All 324 eligible residents of the supportive housing units were recruited via letters advertising a research project focused on resident perspectives on their housing and community experiences. Of the eligible participants, 54% participated in the study.

Figure 3

Map of Housing Sites



Participant ages ranged from 22 to 72 (M= 50.05, SD= 9.66). Just over half of participants (56%) identified as male, 43% as female, and 1% as non-binary. The majority of participants were white (68%), with the remaining participants identifying as Black (24%), Latino (2%), Native American (2%), Asian (1%), and other/ race not listed (3%). Bipolar Disorder (28%) represents the most common primary diagnosis, followed by schizophrenia-spectrum disorder (25%), major depression (19%), and anxiety (18%). On average, participants had lived in the current housing for 5.6 years. Rates of engagement with mental health services were high, with an average of 81% of participants taking psychiatric medication and 70% participating in therapy in the last six months. Most participants (76%) reported a history of homelessness, and 20% reported a

psychiatric hospitalization since moving into housing. Participants reported a mean of three lifetime episodes of homelessness, with the average age of first becoming homeless at 32. Most participants received social services support, with 94% receiving food stamps, 93% receiving Medicaid, and 84% receiving a housing subsidy.

Design and Procedures

Approval for this study was obtained from the Portland State University Institutional Review Board. This study utilizes survey methodology and a cross-sectional design. Data were collected via one-on-one interviews, and participants verbally responded to survey measures about housing and neighborhood experiences, mental health symptomatology and recovery, service use, and demographics. Surveys were administered by a team of four trained student research assistants, and answers were recorded electronically on iPads. Participants were informed of the risk of minimal discomfort from questions about sensitive issues before signing an informed consent document. Participants were provided a $20 cash incentive for participating. Interviews lasted between 1.5 and 2 hours and were conducted in participants' homes or common areas on site. Privacy and comfort were considered by ensuring that common rooms were empty and that participants felt comfortable beginning the survey.

Measures

Housing Staff Support

The housing staff support scale is a composite score of three staff-related questions created for the purposes of this study. Questions were captured using five-point Likert scales. The first question, "How well do you and your landlord/ property manager

know each other?", was recorded using the following scale: (1) *Not at all,* (2) *Slightly,* (3) *Somewhat,* (4) *Pretty Well* (5) *Very Well.* Next, participants were asked, "How much contact have you had with your housing staff in the past six months?" using the following scale: (1) *Not at all,* (2*) At least ONCE in the past 6 months,* (3) *At least ONCE a month,* (4) *At least ONCE a week,* (5) *At least ONCE a day.* Finally, the third question, "Overall, how satisfied are you with your housing staff?", was measured using the following scale: (1) *Very dissatisfied* (2) *Dissatisfied* (3) *Neither Dissatisfied or Satisfied* (4) *Satisfied* (5) *Very Satisfied.* The internal reliability (i.e., Cronbach's alpha) for the scale was .54, which is low but argued to be adequate for an exploratory field-based study in the social sciences, particularly for scales with a small number of items, such as this one (Hair et al., 2006).

Loneliness

Loneliness was measured using a four-item version of the UCLA Loneliness Scale (Russell et al., 1980). Each item was rated on a four-point scale from *never* to *always* and asked how often individuals felt left out; that there are people that really understand them; isolated from others; and that there are people they can talk to. The composite score was created as the average of the four items, such that higher scores indicated greater loneliness. The original UCLA Loneliness Scale demonstrates good validity and reliability (Russell, 1996; Russell et al., 1980). The Cronbach alpha in this study was 0.76, which is acceptable.

Residential Satisfaction

Residents' satisfaction with their housing and neighborhoods was measured using the Housing Environment Scale – Resident Satisfaction subscale (HES-RS; Wright and Kloos, 2007). For two questions, "How satisfied are you with your housing as a place to live?" and "How satisfied are you with your neighborhood as a place to live?", participants responded using a five-point Likert scale ranging from (1) *Very Dissatisfied* to (5) *Very Satisfied.* For the other two questions, "How does your current living situation compare to your previous living situations?" and "How does your current neighborhood compare to your previous neighborhoods?", responses were recorded as (1) *Better,* (2) *Same,* or (3), *Worse.* Consequently, there were two different scales used to measure residential satisfaction (1-to-3 and 1-to-5-point Likert scales). To obtain the composite score across the four items, raw rescaling of items was used whereby the housing and neighborhood satisfaction questions were scored 1, 1.5, 2, 2,5, and 3; and the housing and neighborhood comparison questions were scored 1, 2, and 3, as recommended by Townley and Kloos (2011). The Cronbach's alpha for the scale was .65, which is adequate, especially when using a scale with a small number of items.

Sense of Community

Sense of community was measured using the Sense of Community Index-2 (Chavis et al., 2008). Participants answered 24 items assessing perceptions of community membership, influence, fulfillment of needs, and shared emotional connection (e.g., "Members of this community care about each other" and "If there is a problem in this community, members can get it solved"). Items were rated on a 4-point Likert scale

ranging from (1) *Not at All* to (4) *Completely*. The Cronbach alpha for the scale in this study was .94, which is very good.

Self-determination

Deci and Ryan (1998) suggest that there are three integral components of self-determination: autonomy, competence, and relatedness. To assess each of these components, three subscales from Ryff's Psychological Well-Being short-form scale (Ryff & Keyes, 1995) were used, which has been recommended by others in this literature (e.g., Gao & McLellan, 2018). The three-item Autonomy subscale was used to capture the autonomy component of self-determination. An example item from the Autonomy subscale is, "I have confidence in my opinions, even if they are contrary to the consensus." The three-item Environmental Mastery subscale was used to measure the competency component of self-determination, with an example item being, "In general I feel I am in charge of the situation in which I live." Finally, the three-item Positive Relations with Others subscale was used to measure the relatedness component of self-determination. An example item from this subscale is, "People would describe me as a giving person, willing to share my time with others." Participants responded to questions using a 5-point Likert scale ranging from (1) *Strongly Disagree* to (2) *Strongly Agree*. The Cronbach alpha for this nine-item scale was .74, which is acceptable.

Data Analysis and Results

Preliminary Analysis

Research questions and subsequent hypotheses were analyzed using IBM SPSS version 28. Data were screened for outliers and data entry errors prior to conducting analyses. Listwise deletion was used to address cases where participants are missing more than 15% of the data on any variable (i.e., a completion rate of 85% or higher was required to be included in analyses). No appreciable amount of data was missing from the scales included in these analyses, so no participants' data were removed using these parameters.

Summary statistics and frequency distributions were examined to ensure data were normally distributed (see Table 1). Tests of skew and kurtosis revealed that residential satisfaction was strongly negatively skewed. Transformations were attempted but were not successful in correcting the skew. Nonetheless, each of the skew and kurtosis values were considered acceptable according to less conservative guidelines which consider absolute skewness values lower than 3 and absolute kurtosis values less than 10 to be acceptable (Kline, 2011).

Table 1.

Descriptive Statistics.

Measure	N	Min	Max	Mean	SD	Skewness		Kurtosis	
						Statistic	SE	Statistic	SE
Housing Staff	172	1	5	3.51	.76	-.52	.19	.03	.37

Support									
Loneliness	169	1	4	2.16	.72	.21	.19	-.31	.37
Residential Satisfaction	172	1	3	2.65	.39	-1.52	.19	2.54	.37
Sense of Community	171	1	3.92	2.42	.63	.16	.19	-.37	.37
Self-determination	168	2.11	5	3.65	.58	-.05	.19	-.19	.37

Correlation analyses were conducted between the staff support scale and the three dependent variables (loneliness, residential satisfaction, and sense of community), and between staff support and self-determination. Housing staff support was significantly negatively correlated with loneliness and significantly positively associated with sense of community, residential satisfaction, and self-determination. Self-determination and housing staff support were also significantly positively correlated. A correlation matrix of all study variables is presented below.

Table 2.

Correlation Matrix of Study Variables

	Housing Staff Support	Loneliness	Residential Satisfaction	Sense of Community	Self-determination
Housing Staff Support	--				
Loneliness	-.23**				

Residential Satisfaction	.19*	-.00			
Sense of Community	.44**	-.29**	.18*		
Self-determination	.23**	-.52**	.07	.17*	--

Note. ** Correlation is significant at the 0.01 level (2-tailed).* Correlation is significant at the .05 level (2-tailed)

Bowen and colleagues (2019) suggest using a health equity lens in the selection of covariates when working with vulnerable populations. As such, a series of demographic, mental and physical health, and socioeconomic variables were examined in relation to the primary study variables to assess whether any should be included as potential covariates. Moreover, previous research conducted with similar populations recommends examining symptom severity, amount of time at residence, and prior homelessness history as potential covariates (Davis, Townley, & Kloos, 2013; Terry & Townley, 2019). A series of t-tests, ANOVAs, and correlations between primary study variables and the variables outlined above were examined to determine which variables should be analyzed as covariates in the models described below. Due to concerns about statistical power, only variables that were significantly associated with two or more of the outcome variables were included as covariates.

The results of an independent samples t-test revealed significant differences in sense of community by gender, such that for women, sense of community was significantly lower (M = 2.30, SD = .64) than for men (M = 2.5, SD = .60), $t(169) = 2.1$, $p < .05$. Similarly, residential satisfaction was significantly lower for women (M = 2.50, SD = .40) compared to men (M = 2.68, SD = .37), $t(169) = 2.1$, $p < .05$. A Pearson bivariate

correlation revealed that psychiatric symptom distress was significantly related to both loneliness (r = .50, p < .01) and residential satisfaction (r = -.15, p < .05). Race, amount of time at residence, income, and prior homelessness history were not found to be significantly related to study variables. Therefore, only gender and symptom distress are included as covariates in the regression analyses presented below. In addition to examining the influence of potential covariates, it was also important to consider whether there was any significant difference in housing staff support across sites that should be controlled for. A one-way ANOVA revealed that there were no significant differences across housing sites in housing staff support, $F(15,156) = 1.28$, p = .22.

Results

Research Question 1: Does housing staff support in a supportive housing environment relate to residents' well-being outcomes?

Three hierarchical multiple regressions were conducted to examine the relationship between housing staff support and each outcome. In each regression, the first block, or model, included the housing staff support variable in order to understand its unique association with each outcome. The second block added in the two covariates, gender and psychiatric symptom distress, to determine the effect of housing staff support on each outcome after controlling for covariates.

For loneliness, the first model with housing staff support predicting loneliness was significant, F (1, 166) = 13.22, p < .001, and explained 6.8% of the variance in loneliness. Housing staff support was significantly negatively associated with loneliness (B = -.26, SE = .07, p < .001). The second model adding in covariates was also

significant, F (3, 164) = 20.75, $p < .001$, and the addition of the covariates accounted for a significant amount of additional variance in loneliness ($\Delta R^2 = .20$, $p < .001$). Psychiatric symptom distress was significantly positively associated with loneliness ($B = .51$, $SE = .08$, $p < .001$), while gender was not significant ($B = -.11$, $SE = .10$, $p = .28$). Housing staff support remained a significant predictor of loneliness in the model with covariates, although its effect size was reduced ($B = -.15$, $SE = .07$, $p < .05$).

For residential satisfaction, the first model with housing staff support predicting residential satisfaction was significant, F (1, 166) = 6.65, $p < .01$, and explained 3.3% of the variance in residential satisfaction. Housing staff support was significantly positively associated with residential satisfaction ($B = .10$, $SE = .04$, $p < .001$). The second model adding in covariates was also significant, F (3, 164) = 5.3, $p < .05$, and the addition of the covariates accounted for a significant amount of additional variance in residential satisfaction ($\Delta R^2 = .05$, $p < .05$). Psychiatric symptom distress was not significantly associated with residential satisfaction ($B = -.05$, $SE = .05$, $p = .35$), while gender was significant ($B = -.16$, SE = .06, $p < .01$). Housing staff support remained a significant predictor of residential satisfaction in the model with covariates ($B = .09$, $SE = .042$, $p < .05$).

Finally, for a sense of community, the first model with housing staff support predicting SOC was significant, F (1, 166) = 38.75, $p < .01$, and explained 18% of the variance in sense of community. Housing staff support was significantly positively associated with a sense of community ($B = .37$, $SE = .06$, $p < .001$). The second model adding in covariates was also significant, F (3, 164) = 14.65, $p < .01$. The addition of the

covariates did not account for a significant amount of additional variance in sense of community (ΔR^2 = .02, p = .10). Psychiatric symptom distress was not significantly associated with sense of community (*B* = .09, *SE* = .05, p = .17). Gender was also not significant in the model (*B* = -.16, SE = .09, p = .07). Housing staff support remained a significant predictor of sense of community in the model with covariates (*B* = .38, *SE* = .061, $p < .01$).

Research Question 2: How does self-determination affect the strength of the association between housing staff support and residents' well-being outcomes at multiple levels of analysis?

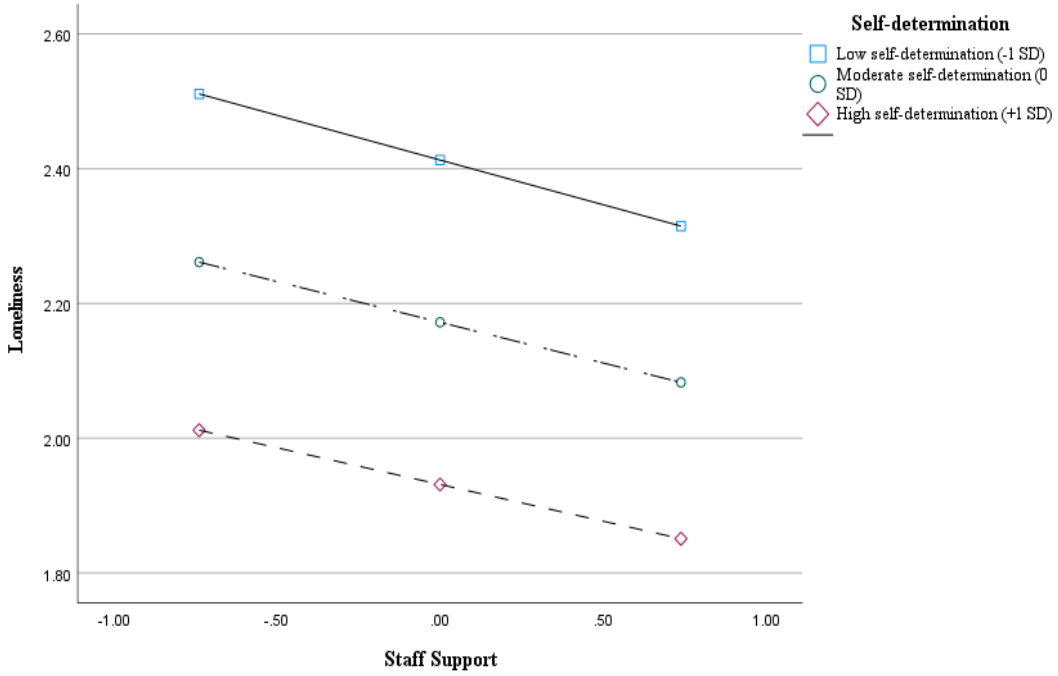
A moderated regression model was tested to investigate whether the association between staff support and the three well-being outcomes (i.e., loneliness, residential satisfaction, and sense of community) depends on the resident's level of self-determination. A moderator is a third variable that impacts the strength of the relationship between an independent and dependent variables (Baron & Kenny, 1986). Hayes' PROCESS macro for SPSS was used to conduct moderated regression analyses (Hayes, 2018). Similar to the regression analyses presented above, gender and symptom distress were added into the model as covariates. Consistent with methodological recommendations, the continuous predictors were centered prior to the moderation analysis (Aiken & West, 1991).

The first moderated regression model investigated whether the association between staff support and loneliness depends on the client's level of self-determination. The interaction between housing staff support and self-determination was not significant

(*B* = .02, *SE* = .12, *p* = .85). As depicted in the graph below, increased staff support related to decreased loneliness regardless of the amount of self-determination.

Figure 4

Graph Illustrating the Moderating Effect of Self-determination on Loneliness and Staff Support

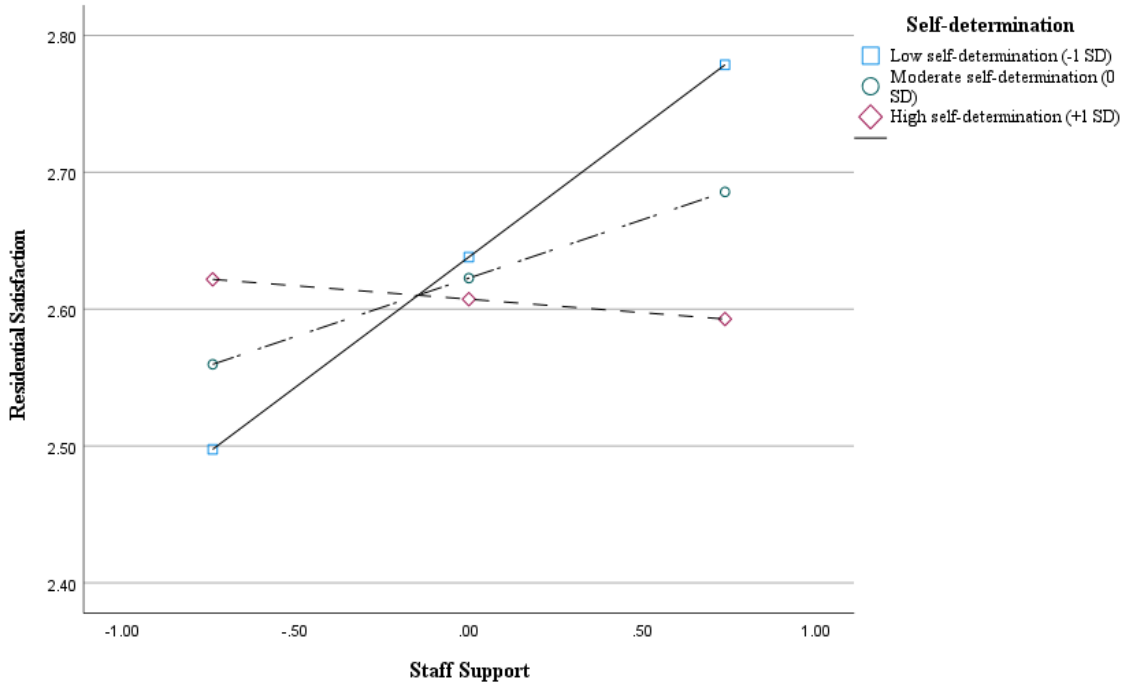


The second moderated regression model tested whether the relationship between housing staff support and residential satisfaction depends on the resident's level of self-determination. As hypothesized, the interaction between self-determination and staff support was significant (*B* = -.17, *SE* = .07, *p* < .05). The interaction was investigated further by testing the conditional effects of housing staff support at three levels of self-determination, one standard deviation below the mean, at the mean, and one standard deviation above the mean. Staff support was significantly related to residential satisfaction when self-determination was one standard deviation below the mean (*B* = .19,

SE = .06, $p < .01$) and at the mean (*B* = .08, *SE* = .04, $p < .05$), but not when self-determination was one standard deviation above the mean (*B* = .02, *SE* = .05, $p = .74$). The relationship between housing staff support and residential satisfaction was significant when self-determination was less than .45 standard deviations above the mean but not significant with higher levels of self-determination.

Figure 5

Graph Illustrating the Moderating Effect of Self-determination on Staff Support and Residential Satisfaction

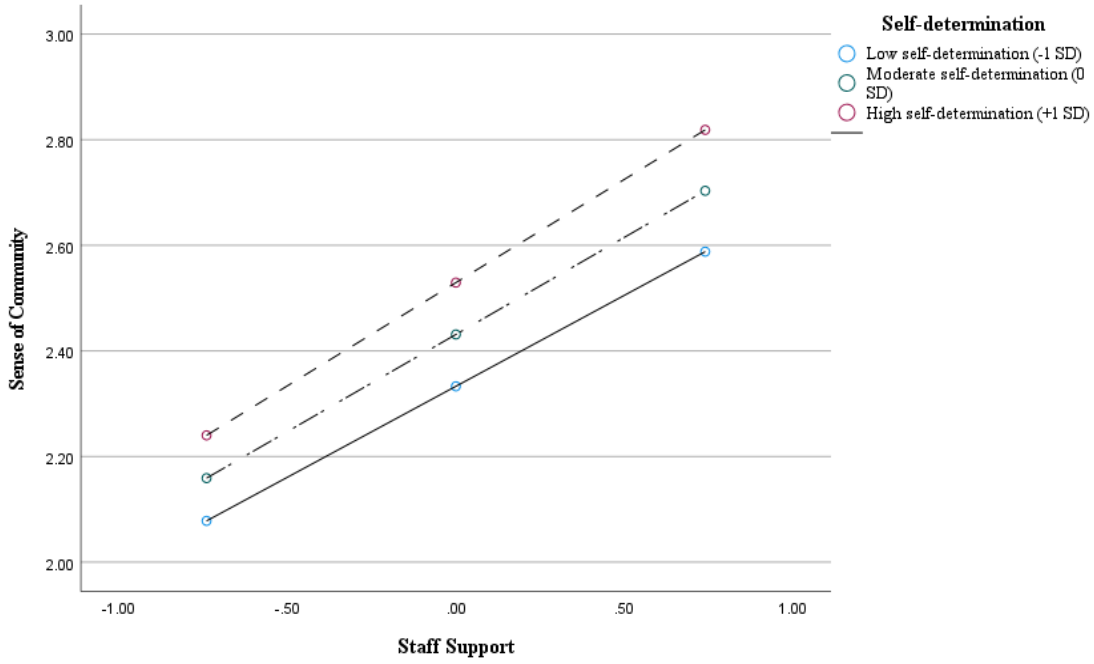


The final moderated regression model investigated whether the association between staff support and sense of community depends on the resident's level of self-determination. The interaction between housing staff support and self-determination was not significant (*B* = .04, *SE* = .10, $p = .69$). As depicted in the below graph, increased

staff support related to increased sense of community regardless of the amount of self-determination.

Figure 6

Graph Illustrating the Moderating Effect of Self-determination on Staff Support and Sense of Community



Post-hoc Analysis

Given the low inter-item reliability of the housing staff support scale, it was important to examine bivariate associations between each of the three individual staff support items and the three outcome variables to determine whether future studies should conduct item-level analyses rather than examining housing staff support as a composite measure. The first item, “How well do you know your housing staff”, was significantly correlated with loneliness (r = .20, p <.01) and sense of community (r = .39, p <.01) but not with residential satisfaction (r = .06, p =.41). The second item, “How much contact

have you had with your housing staff in the last six months", was not significantly related to loneliness (r = -.03, p = .66) or residential satisfaction (r = .10, p = .16), but was significantly correlated with sense of community (r = .23, p < .01). The third item, "How satisfied are you with your housing staff", was significantly correlated with all three outcomes; loneliness (r = -.28, p < .01), residential satisfaction (r = .23, p < .01), and sense of community (r = .31, p < .01). Future studies should engage in further scale development research to more comprehensively capture this concept.

Discussion

Supportive housing fills an essential gap in services for those with serious mental illness, allowing individuals to live independently in communities and access support services as needed. On-site staff support is a unique and essential feature of these programs, and yet it has remained under-examined in the literature. The findings of this study illuminate some of the ways that staff may support residents of supportive housing programs beyond clinical outcomes and housing retention. Moreover, the findings from this study reveal important insights into the role that self-determination may play in the reception of services for individuals with serious mental illnesses.

Overview of Study Findings

Impacts of Staff Support on Well-being

Utilizing the social ecological approach to investigating housing programs suggested by Kloos and Shah (2009), the primary purpose of this study was to better understand the impact of staff support on wellbeing at three levels of analysis: loneliness (interpersonal level), residential satisfaction (housing and neighborhood level), and sense of community (community level). As hypothesized, results indicate that there is a significant negative relationship between staff support and loneliness as well as a significant positive relationship between staff support and both residential satisfaction and sense of community. These findings suggest that staff may be able to support residents beyond clinical and housing outcomes alone, and indeed they may be an essential component of the supportive housing environment. While future research is needed to identify the causal mechanisms driving the relationship between staff support

and well-being outcomes, the existing literature points to a few potential explanations for this association.

For instance, staff support may relate to decreased loneliness simply by increasing the number of weekly social interactions available to residents, particularly for those who may have limited social networks. As noted previously, individuals with serious mental illness tend to have smaller social networks and fewer social interaction, both of which are related to loneliness (Perese & Wolf, 2005). Residents may have few social interactions outside of their service providers, so small yet consistent social exchanges with housing staff in the hallways or on-site offices could have a large impact on reducing loneliness. This reasoning would be consistent with literature with populations in the medical field, which found that patients who require more staff support with daily living activities reported lower levels of loneliness, even after controlling for social network quality (Franklin et al., 2006).

Furthermore, residents may not feel they have a wide support network to access when they are confronted with a problem. Knowing there is a staff member on-site to assist with practical and social issues may make them feel less lonely. Staff may also play a role in expanding residents' social networks by connecting residents with each other. This could be done through more casual interactions or meetings around the apartment building or through community events such as barbecues or resource fairs.

Staff support was also related to increased residential satisfaction, which assesses how satisfied the individual is with their housing and neighborhood and how this compares to their previous living situation. One possible reason for this association may

be that housing staff are able to assist residents in improving the physical conditions of their living situation. For instance, a resident may need help fixing a leaky sink and reach out to their housing staff for support. Thus, an increase in staff support may result in a better physical quality of one's living space and therefore a higher satisfaction. Moreover, staff may be able to address other housing concerns by ensuring that appropriate noise levels are maintained by all residents and that the property is kept clean. This on-site staff presence may also make residents feel safer knowing that they have someone to assist them in addressing any safety concerns they may have in the housing site or surrounding neighborhood. One qualitative study supports this idea and found that staff were important in helping individuals in a supportive housing address both practical concerns as well as to mediate issues with other tenants (Bengtsson-Tops et al., 2014).

Finally, staff support was also found to be associated with increased sense of community. While future research is needed to better understand this relationship, an essential support that staff may be able to provide to residents by connecting them to the broader community (Townley, 2015). Previous studies have shown that supportive housing staff can assist residents with both case management concerns and connecting residents with community programs and resources (McCarthy & Nelson, 1993, Forenza & Lardier, 2017). For example, a staff member may notice that one of the residents has become more secluded, so they work to connect them with social or wellness groups at their local mental health center. Staff may also plan community outings to provide opportunities for connecting with the broader community. This could include trips to a local park for a barbecue or a trip to a community fair. Importantly, staff can also help

residents identify, select, and plan opportunities for independent engagement in the activity which could lead to more sustained community participation and developing social connections with community members. Thus, increased support from a housing staff member may help residents become more engaged with the broader community and feel a great sense of connection to the community.

The Moderating Role of Self-determination

The moderated regression analyses revealed that self-determination did not moderate the relationship between staff support and loneliness, or the relationship between staff support and sense of community. It was hypothesized that self-determination would moderate these associations because staff would feel more compelled to help more motivated residents, as was discussed in a qualitative study conducted by Lindvig and colleagues (2020). Further, it was hypothesized that highly self-determined individuals may be more confident and motivated in seeking out and accepting support from staff. However, findings revealed that staff support did not moderate the association between staff support and either loneliness or sense of community. That is, staff support favorably impacted residents' loneliness and sense of community regardless of how self-determined they were.

Interestingly, self-determination did moderate the relationship between staff support and residential satisfaction. For residents with low to moderate levels of self-determination, the relationship between staff support and residential satisfaction was stronger than for those who were high in self-determination. For those who were highly self-determined, staff support did not significantly impact their residential satisfaction.

This would indicate that staff support plays a particularly important role in residential satisfaction for individuals who are low in self-determination.

As mentioned previously, staff provide a wide range of support in the supportive housing setting. Some such supports include addressing practical concerns like maintenance requests, keeping the property clean, and addressing any safety concerns. The findings from the study indicate that these types of support may be more important for those who are low or moderate in self-determination. Those who are highly self-determined may find it easier to take initiative and improve their physical conditions, rather than needing staff to help them do this. Those with lower levels of self-determination may benefit greatly from the assistance of staff in addressing concerns about their living environment.

Further, the act of reaching out to staff for support to address residential concerns may increase an individual's self-determination. Millner and colleagues (2019) assert that the process of achieving autonomy and independence can only occur in the presence of support. That is, an individual can increase their self-determination by utilizing staff supports to obtain what they need. This points to the need for more research, particularly longitudinal studies, to better understand the relationship between self-determination, staff support, and residential satisfaction.

The overall finding of the moderation analysis suggests that regardless of the level of self-determination, staff support was still associated with favorable well-being outcomes. While this is different from what was hypothesized, these findings show

promise that staff support is impactful for individuals at different stages of recovery—not just those who are high in autonomy, competence, and relatedness.

Gender Differences

In addition to the primary study findings discussed above, there were also some interesting findings from the preliminary covariate analysis that help to inform possible future research directions. First, covariate analyses revealed that female participants experienced lower residential satisfaction and sense of community than male participants. This is consistent with existing research with similar populations which have showed that women have lower residential satisfaction due to concerns around safety (Adamus et al., 2022). Another reason for this discrepancy may be that women possess less power and fewer resources than men and therefore experience lower satisfaction (Diener & Diener, 1995). Research is necessary to explore these findings; however, the results of this study suggest that focused efforts may need to be made towards increasing satisfaction and sense of community among women living in supportive housing.

Symptom Distress

Another finding from the preliminary covariate analyses is that those with higher symptom distress experienced more loneliness as well as lower levels of residential satisfaction. These findings are consistent with existing literature which suggest linkages between mental illness and increased loneliness and overall satisfaction (McGinty et al., 2020). One reason for this linkage could be that symptoms of mental illness, such as depressed mood and paranoia, can lead to a tendency to isolate and not reach out for help. Moreover, people experiencing more severe symptoms may be more focused on

immediate distress tolerance rather than focusing on perhaps less immediate concerns pertaining to residential satisfaction and loneliness.

Limitations

Before discussing the implications of this study, a few limitations must be acknowledged. This study draws upon a localized sample of residents in a particular housing program, which limits the generalizability to other locations and housing programs. It is also important to note that these data were collected ten years ago. As such, findings may not represent the current state of the world, particularly in light of the COVID-19 pandemic and the impact this has had on availability of supports and services for people with SMI (Moreno et al., 2020). That being said, the questions explored in this study remain important and under-examined in the supportive housing literature.

Another possible limitation of this study is the potential for response bias due to the interview methodology being used. Participants were interviewed in a one-on-one setting where the research assistant verbally asked the survey questions. Participants may have felt pressure to present a certain way and may have overreported positive perceptions and underreported negative perceptions. Researchers made efforts to ensure that participants knew their responses would be kept confidential and this information would not be shared with housing staff. However, it is possible that participants gave positively biased responses out of concerns that reporting negatively about staff may impact their receipt of housing or services.

Moreover, a possible confound when conducting research with individuals with SMI pertains to potential fluctuations in psychiatric symptoms. This confound could

indicate that participants' responses may not reflect their baseline level of functioning. This was addressed in this study by considering psychiatric symptom distress as a covariate, although this may only account for broad symptom fluctuations rather than fluctuations throughout the day.

Further, 54% of eligible individuals participated in this study which leaves questions as to why residents chose to opt out. Some potential reasons residents may have opted out are a fear of losing their housing, psychological distress at the time of recruitment, or lack of time for individuals who work and spend time away from the home. Future studies could collect information on why participants chose not to participate in the study, which may help to contextualize study findings.

Additionally, causality cannot be inferred due to the cross-sectional nature of the study. It is possible that many factors could cause the association between staff support, self-determination, and the three well-being outcomes examined. For example, participants who report lower loneliness may be more extroverted and make concerted efforts to improve the relationship between themselves and their staff.

Another limitation of this study is the low inter-item reliability of the staff support measure, likely due to the low number of items used. These items may not adequately represent the totality of support that staff are able to provide to residents. Thus, future studies should engage in measure development research to refine this scale to ensure that it adequately captures the construct. This will be discussed in more detail in the section on implications for research.

Finally, because data for this study were collected from individuals residing in 16 different supportive housing sites, a hierarchical linear modeling (HLM) framework may be needed to address potential data clustering, which can result in attenuated standard errors and increased risk of rejecting the null hypothesis when it may indeed be true (i.e., a Type 1 error). There was not sufficient power to perform HLM in this study due to the low number of participants at some sites. However, it is encouraging that there were no significant differences in housing staff support ratings across sites, suggesting that it was acceptable to conduct analyses using the general linear model. Still, future studies should endeavor to collect data from a greater number of participants across a larger number of housing sites in order to be able to address potential systematic differences in resident experiences across sites.

Implications for Practice

The information gained in this study has widespread implications for researchers, policymakers, and perhaps most importantly, the residents and staff of supportive housing programs. This study focuses on one of the most critical features of supportive housing—the support of on-site staff. One of the predominant criticisms of supportive housing is that residents are not receiving the support they need to be successful in these programs (Padgett, 2013). Research examining staff support is essential in showing policymakers and funding agencies that these programs go beyond simply housing individuals. This study found that staff support is indeed related to lower levels of loneliness, higher neighborhood satisfaction, and a higher sense of community. As noted previously, each of these variables are integral to the community living experiences of

individuals with SMI and are also related to positive physical and mental health outcomes. The knowledge that housing staff are able to support residents in these essential components of well-being can help to inform the development and expansion of these programs.

While the role and value of staff support in supportive housing should continue to be explored, findings of this study suggest the importance of allocating funding towards the continued presence and availability of on-site staff support. Further, programs can use this information to develop enhanced staff training to ensure that they adequately support the needs of their residents. Moreover, housing researchers, advocates, and policymakers can use these findings to demonstrate the presence and value of staff support in supportive housing environments, thus challenging assertions that individuals are not being adequately supported to be successful in housing.

Another significant contribution of this study pertains to understanding the role that self-determination may play in the relationship between staff support and well-being. One of the core values of supportive housing is fostering independence among individuals with SMI. As such, it is important to consider the resident's role in the relationship between staff support and the three well-being outcomes. While results demonstrated that there was not a significant moderating effect of self-determination for loneliness and sense of community, it was a significant moderator of the relationship between staff support and residential satisfaction. Staff support was found to be especially important in increasing residential satisfaction for those with low to moderate levels of self-determination.

Efforts can be made by housing staff to increase self-determination among residents who seem to struggle with improving their residential environment. This can be done utilizing an empowerment approach, thus enabling residents to take control of their lives and their homes rather than assuming what they need to be satisfied and stepping in and fixing things for them (Stromwall & Hurdle, 2003).

Implications for Research

While the transition of individuals with SMI from controlled hospital settings into the community has been largely positive, these individuals still face a myriad of challenges ranging from negative health outcomes to social well-being (Trémeau et al., 2016). Despite this, existing research in supportive housing primarily centers on housing-related outcomes rather than focusing on overall well-being (Aubry et al., 2020).

Prior research has been essential in demonstrating the baseline-level effectiveness of such programs; however, it only captures one small piece of an individual's experience. Supportive housing is intended to not just house individuals with serious mental illnesses, but also to allow them to thrive as functioning members of their communities. Research on supportive housing should reflect these goals to demonstrate the program's effectiveness beyond only housing retention alone. This study contributes to the limited research on the impact that supportive housing can have on the well-being and community integration of adults with serious mental illnesses.

Future research can build upon the findings of this study by exploring the role of staff support in other regions of the country and internationally to see if this impact expands beyond the local context. As previously mentioned, COVID-19 has drastically

impacted the ways programs are run and more broadly how individuals relate to one another. Some supportive housing programs have begun offering their services remotely in response to the pandemic. For instance, instead of having on-site staff support residents may have the option to schedule phone or video appointments with their housing staff. It would be interesting to see if these remote services are comparable to the in-person services that were examined in this study. Is all staff support helpful to residents or is there something inherently unique about in-person interactions that allow staff to impact resident's wellbeing?

Further, the staff support scale used in this study was a composite scale created for the purposes of this study and may not fully capture the scope of services being provided by staff. Future research could engage in further scale development to better capture the concept of staff support and identify what specific components of staff support are impacting residents. Moreover, a mixed-methods design could add more depth to these findings to better understand this phenomenon from both the resident and staff perspective. For instance, what type of interaction with their staff makes residents feel most supported? Is it one-on-one case management, staff-led site meetings, or simply having someone to say hello to in the hallways that has the most benefit? What are the barriers that staff face when trying to support their residents, and how do they overcome these challenges?

Finally, this study contributes to the limited research utilizing a social-ecological approach to understanding individuals' experiences in supportive housing. Capturing the complexities of the human experience in an ever-changing environment is a demanding

task, particularly when using cross-sectional quantitative methodology that may not adequately reflect the myriad contextual factors at play. A levels of analysis approach allows for a more in-depth understanding of an individual's experience. This study provides a framework for future researchers to better understand individuals' experiences in supportive housing, and the important role that housing staff may play in their housing success and more general well-being.

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Appendix

Survey Questions

Housing Staff questions

1. **How well do you and your landlord/property manager know each other?**

Not at All	Slightly	Somewhat	Pretty Well	Very Well
1	2	3	4	5

2. **How much contact have you had with your housing staff in the past six months?**

Not at All	At least ONCE in Past 6 Months	At least ONCE a Month	At least ONCE a Week	At least ONCE a Day
1	2	3	4	5

3. **Overall, how satisfied are you with your housing staff?**

Very Dissatisfied	Dissatisfied	Neither Dissatisfied or Satisfied	Satisfied	Very Satisfied
1	2	3	4	5

UCLA-Loneliness

Now I am going to read to you some statements which describe how people sometimes feel. For each statement, please indicate how often you feel the way described.

	1 = Never 2 = Rarely 3 = Sometimes 4 = Always
1. How often do you feel left out?	1 2 3 4
2. How often do you feel isolated from others?	1 2 3 4
3. How often do you feel that there are people that really understand you?	1 2 3 4
4. How often do you feel that there are people you can talk to?	1 2 3 4

Residential Satisfaction (HES-RS)

I'd like to ask you some general questions about your living situation.

1. **How satisfied are you with your housing as a place to live?** (e.g., apartment)

Very Dissatisfied	Dissatisfied	Neither Dissatisfied or Satisfied	Satisfied	Very Satisfied
1	2	3	4	5

2. **How satisfied are you with this neighborhood as a place to live?**

Very Dissatisfied	Dissatisfied	Neither Dissatisfied or Satisfied	Satisfied	Very Satisfied
1	2	3	4	5

3. **How does your current living situation (e.g. apt.) compare to your previous living situation?**

1- Better	2- Same	3- Worse

4. **How does your current neighborhood compare to your previous neighborhood?**

1- Better	2- Same	3- Worse

Sense of Community Index- 2

Please think about your broader community for these questions. We have been talking a lot about your neighborhood, but now I'd like you to think about your community, as in Portland, Gresham, etc.

How well do each of the following statements represent how you FEEL about this community?

	1= not at all 2= somewhat 3= mostly 4= completely			
1. I get important needs of mine met because I am part of this community	1	2	3	4
2. Community members and I value the same things	1	2	3	4
3. This community has been successful in getting the needs of its members met	1	2	3	4
4. Being a member of this community makes me feel good	1	2	3	4
5. When I have a problem, I can talk about it with members of this community	1	2	3	4
6. People in this community have similar needs, priorities, and goals	1	2	3	4
7. I can trust people in this community	1	2	3	4
8. I can recognize most of the members of this community	1	2	3	4
9. Most community members know me	1	2	3	4
10. This community has symbols and expressions of membership such as clothes, signs, art, architecture, logos, landmarks, and flags that people can recognize	1	2	3	4

11. I put a lot of time and effort into being part of this community	1	2	3	4
12. Being a member of this community is part of my identity	1	2	3	4
13. Fitting into this community is important to me	1	2	3	4
14. This community can influence other communities	1	2	3	4
15. I care about what other community members think of me	1	2	3	4
16. I have influence over what this community is like	1	2	3	4
17. If there is a problem in this community, members can get it solved	1	2	3	4
18. This community has good leaders	1	2	3	4
19. It is very important to me to part of this community	1	2	3	4
20. I am with other community members a lot and enjoy being with them	1	2	3	4
21. I expect to be part of this community for a long time	1	2	3	4
22. Members of this community have shared important events together, such as holidays, celebrations, or disasters	1	2	3	4
23. I feel hopeful about the future of this community	1	2	3	4
24. Members of this community care about each other	1	2	3	4

Self Determination

	1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree				
1. In general, I feel I am in charge of the situation in which I live	1	2	3	4	5
2. The demands of everyday life often get me down	1	2	3	4	5
3. I am quite good at managing the many responsibilities of my daily life	1	2	3	4	5
4. I tend to be influenced by people with strong opinions	1	2	3	4	5

5. I have confidence in my opinions, even if they are contrary to the general consensus	1	2	3	4	5
6. I judge myself by what I think is important, not by the values of what others think is important	1	2	3	4	5
7. Maintaining close relationships has been difficult and frustrating for me	1	2	3	4	5
8. People would describe me as a giving person, willing to share my time with others	1	2	3	4	5
9. I have not experienced many warm and trusting relationships with others	1	2	3	4	5