

DISSERTATION

EFFECTS OF SOCIAL NETWORKS ON THE WELLBEING OF FORMERLY HOMELESS
ADULTS IN SUPPORTIVE HOUSING: A MIXED-METHOD CASE STUDY

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ABSTRACT

EFFECTS OF SOCIAL NETWORKS ON THE WELLBEING OF FORMERLY HOMELESS ADULTS IN SUPPORTIVE HOUSING: A MIXED-METHOD CASE STUDY

Although a number of studies have investigated the social networks of homeless individuals, very few studies have investigated social networks of formerly homeless individuals in supportive housing programs. How social networks influence the wellbeing of adults in supportive housing programs is limited in the literature.

This study explored the nature of social networks and the effects of social networks on psychological wellbeing of formerly homeless adults in a supportive housing program. A mixed-method embedded-design case study was utilized for this study, combining both quantitative and qualitative methods. Quantitative methods were predominant, with qualitative data used to compliment the quantitative strand. Data from ($N = 80$) formerly homeless adults were collected to examine the effects of social networks on psychological wellbeing. A subset of ($n = 20$) participants were selected to explore the nature of social networks prior to entering a supportive housing program. Analyses included descriptive statistics, exploratory factor analysis, multiple regressions, and conditional process modeling.

Results indicate social network variables differed by demographic and situational characteristics. Network size and emotional closeness, for example, varied by gender. Participants with lower perceived social support also tended to have lower psychological wellbeing. Perceived social support mediated the relationship between social network structure and psychological wellbeing. Qualitative results suggest participants restricted their social

interactions while they were homeless. Their experiences prior to entering homelessness and during homelessness shaped the structure of their social interactions. Based on the results of this study, I recommend that supportive housing programs include initial assessments of social networks, especially supportive networks, in order for social support interventions to be incorporated in case management plans for participants with low perceived social support. Qualitative results suggest homeless interventions may include assisting homeless individuals to develop positive social support networks.

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DEDICATION

This is dedicated to Shirley Cressler for her support and encouragement.

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LIST OF DEFINITIONS

Key Definitions

The terms “social network” and “social support” have been used in the literature interchangeably. This presents methodological challenges when these concepts are related to health outcomes, and this study advocates against using these terms as equivalents. About thirty years ago, House (1987) noted the lack of consensus in the definitions of social networks and social support, and this issue has not been adequately resolved since. However, a clear definition of social network, social support, and quality of relationship is warranted in order to examine the potential implications of aspects of relationships on wellbeing.

Social networks. According to Antonucci’s (2001), social networks can be conceptualized as the “objective characteristics that describe the people with whom an individual maintains interpersonal relations” (p. 428). Heaney and Israel (2008) also define social network as the “web of social relationships that surround individuals” (p. 190).

Social support. Social support is the “verbal and/or nonverbal information or advice, tangible aid, or action that is proffered by social intimates or inferred by their presence and has beneficial emotional or behavioral effects on the recipient” (Gottlieb, 1983, p. 28). House (1987) conceptualized four domains of social support:

Emotional support. This involves the provision of empathy, love, trust, and caring.

Instrumental support. This involves the provision of tangible aid and services that directly assist a person in need.

Informational support. This is the provision of advice, suggestions, and information.

Appraisal support. This involves providing information.

Perceived social support. Gottlieb and Bergen (2010) defined perceived support as the “belief or faith that support is available from network members” (p. 512).

Quality of relationship. This describes participants’ perception of the satisfaction with the quality of their social relationships.

Psychological wellbeing. The study’s definition of wellbeing is based on Ryan and Deci’s (2001) definition of wellbeing as “optimal psychological functioning and experience” (p. 142).

Housing First model. This “refers to the provision of immediate access to permanent housing with ongoing consumer-driven support services” (Henwood et al., 2015, p. 2).

Formerly homeless adults. Individuals with a history of chronic homelessness and disabilities.

Situational characteristics. This study’s definition of situational characteristics includes housing tenure, history of incarceration, and years of homelessness.

Personal characteristics. Personal characteristics include age, gender, race, and other personal factors that may influence social network (Levitt, 2005).

Permanent Supportive Housing (PSH). PSH “is a housing model designed to provide housing assistance (project- and tenant-based) and supportive services on a long-term basis to formerly homeless people” (Henry, Watt, Rosenthal, & Shivji, 2017, p. 2).

CHAPTER 1: INTRODUCTION AND BACKGROUND

Introduction

Despite previous legislations to address homelessness, it still remains one of the most challenging issues confronting federal and state policy makers. This chapter provides background to current homeless legislation, particularly the Homeless Emergency Assistance and Rapid Transition to Housing (HEARTH) Act of 2009, which makes provisions for the implementation of permanent supportive housing programs (McKinney-Vento Homeless Assistance Act as amended by S. 896). The chapter reviews the literature on permanent supportive housing programs and its impact on formerly homeless individuals. Then the research problem, and questions are discussed. This is followed by the research methodology, research significance, the study's limitations and delimitations, as well as the researcher's perspectives.

Homelessness

Although current national estimates show a marginal decline in the total number of homeless population between 2007 and 2017, the number of people experiencing homelessness may be far greater than official estimates may suggest (Henry et al., 2017). Current estimates by the annual Point-In-Time (PIT) survey show homelessness remains a national issue. According to the 2017 Annual Point-In-Time (PIT) survey, on a single night in January 2017, 553,742 people were experiencing homelessness, a slight increase from 2016 (549,928; Henry et al., 2017).

The 2017 PIT survey estimates indicate men (60.5%) constitute a majority of the homeless population compared to women (39%; Henry et al., 2017). About half (47.1%) of the homeless population identify as White, 40.6% identify as African American, 1.2% identify as

Asian, 3% identified as Native American, 1.5% identified as Pacific Islander, and 7% identify as multiracial. Approximately 20% of homeless people identify as Hispanic or Latino (Henry et al., 2017).

From the same survey, Colorado had 7,571 people experiencing homelessness (Henry et al., 2017). However, the 2017 data showed that over 5,000 of the approximately 7,500 homeless individuals in Colorado were in the seven county Denver Metro area. Demographic data on the homeless population in the Denver Metro area indicated over half as White, 20% identified as Black/African American, and about 21% were Hispanic (Metro Denver Homeless Initiative [MDHI], 2017). Out of the total number of homeless individuals, 1,085 individuals were living in chronically homeless households. These estimates, however, must be interpreted with caution because enumerators only count people who are in emergency shelters, transitional housing, and sleeping outside in places not meant for human habitation (MDHI, 2017).

While the PIT survey counted homeless people in other places not meant for human habitation, homeless women, for example, are more likely to sleep in other public or quasi-public spaces such as libraries, retail stores, airports, and other spaces (Casey, Goudie, & Reeve, 2008), which might not fall under the purview of enumerators. The term “hidden homeless” is used to describe this group of people who do not fit within historical definitions of homelessness, they are not “roofless” but do not have a home either, including but not limited to those temporarily staying with friends or families (Erickson, 2007). One of the largest subgroups of the hidden homeless are individuals living in rural areas. This group of people are often not counted, registered, or surveyed by official organizations; this rural subgroup of homeless tend to live in the woods, often do not self-define as homeless, and may keep to their own spaces where researchers do not go (Cloke, Milbourne, & Widdowfield, 2001).

Studies on homeless individuals have shown that they experience greater mobility and mortality rates than non-homeless (Auerswald, Lin, & Parriott, 2016; Hibbs et al., 1994; Lebrun-Harris et al., 2013), requiring much more attention by helping professionals than non-homeless populations. Previous studies found a large number of homeless individuals experience untreated mental illness and substance abuse disorders at far greater rates than housed residents (Bassuk, Rubin, & Lauriat, 1984; Rossi & Wright, 1987). More recent studies on homelessness support findings of previous studies, also indicating a disproportionate number of homeless individuals experience mental health and substance abuse disorders (Lebrun-Harris et al., 2013; Nyamathi, Leake, & Gelberg, 2000), despite improved access to mental health and substance abuse treatment services since the 1980s. For example, Kilbourne, Herndon, Andersen, Wenzel, and Gelberg (2002) studied homeless women ($n = 974$) exposed to HIV risk behaviors. They found 8% of the women were injection drug users, 64% had been involved in unprotected sex, and 22% had traded sex for either drugs or some other needed resource. Thus, the high rates of substance abuse, mental health disorders, and risky behaviors compound risks for homeless individuals and expose them to other infectious diseases and health risks.

In addition, those experiencing homelessness have higher rates of arrests than the general population, further complicating homelessness. Although the association between homelessness and incarceration is unclear, whether homelessness causes incarceration or vice versa (Hudson, 1998), prior studies have documented the correlation. Literature on homelessness and incarceration suggests a revolving door between homelessness and incarceration (Kushel, Hahn, Evans, Bangsberg, & Moss, 2005; Metraux & Culhane, 2004). Previous estimates indicated homeless individuals were more than twice as likely as other inmates to have experienced homelessness prior to their arrests (Ditton, 1999). Recent studies also support housing and

supportive services to decrease the number of individuals who revolve between homelessness and incarceration (Metraux & Culhane, 2004; Walker, Hempel, Unnithan, & Pogrebin, 2014).

History of Homeless Policy

Current homeless policy in the U.S. has gone through several changes informed by the continued shift in public opinion on how to respond appropriately. The Reagan administration in the 1980s did not view homelessness as requiring national attention, but due to pressure from homeless advocates, the Homeless Eligibility Clarification Act was reluctantly passed into law in 1986 (National Coalition for the Homeless [NCH], 2007). According to the NCH (2007), this legislation removed permanent address requirements from federal programs, including Supplemental Security Income, Aid to Families with Dependent Children, Veterans Benefits, Food Stamps, and Medicaid, which had previously effectively cut off the homeless from these programs. In the same year, the Homeless Housing Act was also enacted. This act initiated the Emergency Shelter and Grant Program and Transitional Housing Demonstration programs. The Urgent Relief for the Homeless Act was another piece of legislation in 1987 that set the tone for current homeless policy (NCH, 2007). This act made provisions for shelter, food, mobile health care, and transitional housing. It was renamed the Stewart B. McKinney Homeless Assistance Act after the death of Representative Stewart B. McKinney of Connecticut, a key sponsor of the legislation. It was later renamed, for the second time, as the McKinney-Vento Act, after the death of Representative Bruce Vento, another key supporter of the bill.

The McKinney-Vento Act ushered in a more comprehensive effort to address homelessness at the federal level (NCH, 2007). The act included nine titles, or categories, to address the needs of this population. One key tenant of the act was to move individuals from shelters to transitional housing. Title IV of the act authorized the provision of emergency shelter

and transitional housing programs, Emergency Shelter Grant programs, Supportive Housing Demonstration programs, Supplemental Assistance for Facilities to Assist the Homeless, and Section 8 Single Room Occupancy Moderate Rehabilitation. In addition, Title VI of the act made provision for the Community Mental Health Services Block Grant. In 1990, the act was amended to incorporate substantial changes that included the introduction of the Shelter Plus Care program, providing housing assistance to those experiencing homelessness with mental illness, AIDS, and drug or alcohol addictions (NCH, 2007).

Linear residential treatment. Central to previous homeless legislations, as noted by Foscarnis (2008), was the provision of shelter and transitional housing programs, and an emphasis on the linear residential treatment model (LRT). The LRT approach required homeless individuals to be “housing ready” by going through a series of steps to maintain sobriety before they were ready to live independently (Padgett, Henwood, & Stefancic, 2011; Tsemberis, 1999). These steps could include moving homeless individuals from shelters to transitional housing, and supervised single-room occupancy (SRO), along a continuum from a more restrictive to a less restrictive environment. At each stage of the continuum, the individual experiencing homelessness had to demonstrate adherence to treatment and obtain specific skills (Ridgway & Zippel, 1990). After individuals completed all the required steps, agency staff determined their readiness to live independently (Tsemberis & Asmussen, 1999). The LRT model placed more authority at the discretion of agency staff to determine who was housing ready and could live independently. However, due to the multiple steps associated with the LRT model, some individuals experiencing homelessness never completed the program (Ridgway & Zippel, 1990).

Permanent supportive housing. In response to the challenges associated with previous homeless policies of moving homeless individuals from shelters to housing, current homeless legislation has shifted the paradigm from an LTR model to providing immediate housing for homeless individuals (Ridgway & Zippel, 1990). The Homeless Emergency Assistance and Rapid Transition to Housing (HEARTH) Act was enacted into law in 2009 (McKinney-Vento Homeless Assistance Act as amended by S. 896). The act funds two types of permanent housing programs: Permanent Supportive Housing for Homeless Persons with Disabilities, and the Rapid Re-Housing program. According to the U.S. Department of Housing and Urban Development (HUD, 2018), permanent housing is community-based housing where participants are the tenants on the leases and live independently with no designated length of stay. In addition to providing community-based housing, Permanent Supportive Housing offers permanent housing and “supportive services to assist homeless persons with a disability or families with an adult or child member with a disability achieve housing stability” (HUD, 2018, para. 4). Rapid re-housing assists individuals or families, with or without disabilities, to search or secure housing as quickly as possible. Different models have defined permanent supportive housing for people with disabilities (Padgett, Henwood, & Tsemberis, 2015). This study, however, focuses on residents in permanent supportive housing in a housing first model. Pathways to Housing, Inc., a nonprofit organization based in New York, developed the housing first approach, which has evolved into different models of permanent supportive housing. In this approach, homeless individuals with psychiatric problems are placed in housing without the requirements of treatment (Tsemberis, 2010). The following principles underlie the Housing First model:

Housing as a basic human right; respect, warmth and compassion for all clients; a commitment to work with clients as long as they need it; scattered-site housing; independent apartments; the separation of housing and services; consumer choice and self-determination; a recovery orientation; and harm reduction. (Tsemberis, 2010, p. 237)

Impact of Permanent Supportive Housing Programs

Although concerns over the rigor of studies evaluating the impact of permanent supportive housing programs have been noted (Rog et al., 2014), a number of studies have evaluated the effectiveness of permanent supportive housing (Housing First model) on several domains of residents' wellbeing and overall program effectiveness (Gulcur, Stefancic, Shinn, Tsemberis, & Fischer, 2003; Larimer et al., 2009; Padgett et al., 2011; Perlman & Parvensky, 2006; Rosenheck, Kaspro, Frisman, & Liu-Mares, 2003). Some studies have suggested permanent supportive housing interventions decrease substance abuse and mental illness (Greenwood, Schaefer-McDaniel, Winkel, & Tsemberis, 2005; Larimer et al., 2009; Padgett et al., 2011). For example, Padgett et al. (2011) compared housing first participants with treatment first participants in New York City. They found participants in a housing first program with serious mental health disorders were significantly less likely to use or abuse substances than those in traditional treatment-first intervention programs. In a quasi-experimental design study that compared participants in housing first programs with those on a wait list, Larimer et al. (2009) found housing first participants had a substantial reduction in alcohol use compared with participants on a wait list.

In a cost benefit analysis study of a permanent supportive (housing first) housing program in Denver, Perlman and Parvensky (2006) found a reduction in emergency costs after participants had moved into a permanent supportive housing program. The authors examined the health costs and emergency service costs of participants 24 months prior to entering into the permanent supportive housing program. After moving into a permanent housing program, participants were tracked for another 24 months. The analysis revealed participants' emergency room costs decreased by 72.95% after moving into permanent supportive housing, with an

average savings of \$31,545 per participant. Larimer et al. (2009) also showed that the total cost of housing individuals experiencing homelessness was 53% lower than those on the wait list, indicating that wait-listed individuals utilized services (including emergency room visits, jails, etc.) more than housed residents.

Conversely, other studies have found no significant differences between those in housing first and those in traditional homeless treatment services in terms of substance use and psychiatric disorders (Leff et al., 2009; Padgett, Gulcur, & Tsemberis, 2006; Rosenheck et al., 2003; Tsemberis, Gulcur, & Nakae, 2004). Rosenheck et al. (2003) found no significant differences on any of the measures of psychiatric or substance abuse symptoms among those in supported housing and those in standard VA care programs for the homeless. Similarly, Tsemberis et al. (2004) also found no difference in psychiatric symptoms and substance use between those in a housing first model and those in a traditional treatment model.

Permanent supportive housing in Colorado. Increasingly, a number of permanent supportive housing (Housing First) programs have been implemented in Colorado. This could be attributed to current federal legislation (HEARTH Act), which makes provisions for funding permanent supportive housing programs. The City of Denver, for example, in 2016 was awarded \$728,388 in federal grant money to provide permanent supportive housing programs for homeless individuals, including homeless youth, veterans, women with disabilities, and those with mental health needs (Denver Human Services [DHS], 2016). According to the DHS (2016), the City and County of Denver is expected to receive about \$3.5 million in federal grants to assist permanent supportive housing programs. Funds have also been allocated to implement permanent supportive housing programs across Colorado. For the year 2016, the Colorado Division of Local Affairs (CDLA) requested funding applications for permanent supportive

housing based on the housing first model. According to the (CDLA, 2016), “Permanent Supportive Housing is defined as decent, safe, affordable, community-based housing that provides tenants with the rights of tenancy and links to intensive supportive services using the Housing First model and Harm Reduction approach” (para. 2). CDLA requires that eligible participants must be individuals with disabilities, or special needs, and unstably housed or experiencing homelessness. Due to these available resources, Denver County has been exemplary in the implementation of permanent supportive housing programs.

Prior to the enactment of the HEARTH Act, homelessness organizations in Denver had already begun collaborating to provide permanent supportive housing programs for the homeless population. Through the efforts of the Colorado Coalition for the Homeless, the Denver Housing First Collaborative (DHFC) was created in 2003, which included the Denver Department of Human Services, Denver Health, Arapahoe House, the Mental Health Center of Denver and the Denver VA Medical Center (Perlman & Parvensky, 2006). The DHFC was created to provide housing first for chronic homeless individuals with disabilities. The Denver program accepted participants with substance abuse and mental health disorders, in addition to others with only substance abuse disorders (Perlman & Parvensky, 2006).

Since the enactment of the HEARTH Act, a number of permanent supportive housing projects have been implemented and others are at different formative stages in the Denver Metro area. The Combined Housing Project, for example, is one of several housing-first projects in the Denver Metro. The project serves 240 chronically homeless individuals and those who are considered episodic homeless. Program goals include housing first, harm reduction, and trauma informed care. The Combined Housing First Project partners with Denver Street Outreach Collaborative, Court to Community Program, Street to Home Program, Fort Lyons Residential

Program, and 16th Street Program to provide referrals (DHS, 2016). The Combined Housing Project provides substance abuse treatment services, mental health counseling, and case management services 7 days a week, 24 hours a day. Participants in the program are assigned to a primary case manager and a housing counselor. Participants are assisted to develop treatment plans, focusing on assisting them with daily living skills, socialization, and other activities (DHS, 2016).

Another project initiated in Denver worth mentioning is the Women/Lowry project, which was initiated in partnership with the Empowerment Program and Mental Health Center of Denver. Based on a housing first model, the project intends to provide permanent supportive housing to 41 women experiencing chronic homelessness along with substance abuse and mental health disorders. Participants receive supportive services, among other things, substance abuse and mental health treatment services to assist women experiencing chronic homelessness to remain in housing and improve their overall wellbeing (DHS, 2016). Similarly, permanent supportive housing programs have been implemented in other communities in Colorado including Boulder, Longmont, and Fort Collins.

Purpose of the Study

The purpose of this embedded mixed-method case study was to examine the association between social networks and psychological wellbeing of formerly homeless individuals in a permanent supportive housing program. The study collected both quantitative and qualitative data, embedding the qualitative study within a larger quantitative study. Quantitative data were collected on respondents' social networks to provide a detailed description of the social relationships of formerly homeless individuals in permanent supportive programs. The quantitative data were used to explore the association between social networks and psychological

wellbeing, by identifying which network variables are strongly associated with subjective wellbeing. In addition, the study assessed the mechanism through which social networks influence wellbeing. Qualitatively, the study sought to understand how the social networks of formerly homeless adults change after they exit homelessness.

Statement of the Research Problem

Although a plethora of studies have investigated the social networks of homeless individuals (Johnson, Whitbeck, & Hoyt, 2005; Trumbetta, Mueser, Quimby, Bebout, & Teague, 1999; Tucker et al., 2012; Tyler, 2008), and aspects of social networks on wellbeing (Biswas-Diener & Diener, 2006), including substance abuse (Barman-Adhikari, Rice, Winetrobe, & Petering, 2015; Rice, Milburn, & Monro, 2011; Trumbetta et al., 1999), very few studies have investigated the nature of the social networks of formerly homeless individuals with substance abuse and mental health disorders in supportive housing programs (Hawkins & Abrams, 2007; Henwood et al., 2015).

Homeless individuals rely on their social networks to survive the harshness of street life, although one study found social networks impeded individuals from transitioning out of homelessness (Snow & Anderson, 1993). When homeless individuals transition to housing, however, having a stable place assists them with engaging with their previous social networks (Hawkins & Abrams, 2007; Henwood et al., 2015), but co-occurring disorders may also hinder them from forming new relations or reconnecting with previous ones (Hawkins & Abrams, 2007).

Although continuous interactions with previous social networks may influence their wellbeing (Henwood et al., 2015), studies investigating the effects of social networks on their psychological wellbeing are scarce in the literature. In addition, recent studies have not examined

the social network characteristics, or the social support and quality of social relationships embedded in social networks. Moreover, recent studies have not examined the links among aspects of social relationships; that is, social network characteristics, social support, and its effects on psychological wellbeing among formerly homeless individuals in permanent supportive housing programs.

Research Questions

Using a mixed-method research design, what can be learned about the social network structure, function, and experiences of formerly homeless individuals in a supportive housing program? The quantitative strand of this study administered surveys to formerly homeless individuals in a permanent supportive housing first program to assess the nature of their social networks, including, size, closeness, type of relationship, and frequency of contact. Second, the respondents were asked to assess their perceived social support and quality of social relationships derived from their social networks. Third, the quantitative strand administered a survey instrument to assess respondents' psychological wellbeing. This study addressed the following research questions:

1. Do psychological wellbeing, perceived social support, relationship quality, and social network structural variables differ by respondents' demographic characteristics?
 - a. Do participants vary on psychological wellbeing by their demographic and situational characteristics?
 - b. Do participants vary on perceived social support by demographic and situational characteristics?
 - c. Do participants vary on relationship quality by demographic and situational characteristics?

- d. Do participants vary on frequency of contact by demographic and situational characteristics?
 - e. Do participants vary on size of network by demographic and situational characteristics?
 - f. Do participants vary on closeness by demographic and situational characteristics?
 - g. Do participants vary on proportion of family in social network by demographic and situational characteristics?
 - h. Do participants vary on proportion of friends in their social network by demographic and situational characteristics?
 - i. Do participants vary on proportion of professionals in social network by demographic and situational characteristics?
 - j. Do participants vary on proportion of intimate partners by demographic and situational characteristics?
2. What is the best possible combination of demographic, situational, social network variables to predict psychological wellbeing among adults in supportive housing?
 3. Controlling for demographic and situational variables, how does perceived social support and relationship quality each predict psychological wellbeing?
 4. Does perceived social support play a mediating role between social network structure and psychological wellbeing?
 5. Does social support mediate the relationship between social network structure and psychological wellbeing at different levels of relationship quality?

The qualitative strand of this study will retrospectively assess the nature of the social networks of formerly homeless individuals prior to entering supportive housing.

6. What was the nature of the social networks of formerly homeless adults before entering supportive housing?

Methodology

This research used an embedded mixed-method case study design, with a quantitative dominant method and a narrow qualitative method. Data were analyzed using independent sample t-tests to assess differences in social relationships on respondents' personal and situational characteristics. Hierarchical regression was used to assess how social networks, social support, and quality of social relationships contribute to wellbeing. Path analysis was used to assess the mechanisms through which social networks were associated with wellbeing. In addition, narrative analysis was used to describe participants' social networks during homelessness and after entering supportive housing programs.

Significance of Study

Previous studies have documented the association of homeless status with destruction of positive social support networks (Lehman, Kernan, DeForge, & Dixon, 1995; Letiecq, Anderson, & Koblinsky, 1998). Thus, as Lehman et al. (1995) noted, it is important to complement the provision of stable housing with mental health treatment, and assist homeless individuals to develop or expand social support networks. By examining the effects of social networks on wellbeing of those in supportive housing, the ultimate, which is consistent with social work research, is to utilize findings to improve social services (Weinbach, 1985). Identifying the effects of aspects of social relationships on psychological wellbeing may complement the provision of supportive housing for individuals with co-occurring disorders. Litwin and Shiovitz-Ezra (2011) documented the importance of assessing network types in assessing risks and determining the appropriateness of interventions. Wenger (1997) also stressed the need to assess

support networks of other vulnerable populations; that is, older adults, to determine risks, prediction of outcomes, and inform practice decisions. Moreover, assessing the nature of the networks of people with mental health and substance abuse disorders could lead to better community reintegration (Hall & Nelson, 1996). Similarly, examination of social networks of those with a history of homelessness may have implications for risk assessment and intervention, which may inform practitioners of the importance of fostering the development of positive social relations. Finally, this study adds to the body of literature on social network factors that may improve the wellbeing of formerly homeless individuals with co-morbid disorders.

Delimitations and Limitations

This study was delimited to formerly homeless adults living in a permanent supportive housing (housing first model) program and receiving services with the Colorado Coalition for the Homeless. In addition, this study was delimited to participants who could identify the characteristics of their social networks, perceptions of the available support within their networks, the quality of their social relationships, and subjective interpretations of their wellbeing. Other potential participants who may experience significant impairments due to mental illness or substance abuse disorders were excluded from the study sample if they could not match the previous requirements. Another delimitation was the retrospective interviewing of participants' description of their social networks during homelessness. Some participants may not be able to recollect their social networks, particularly those who have long housing tenure after exiting homelessness and were excluded.

Consistent with case study methodology, the study findings cannot be generalized to other formerly homeless individuals, partly due to the sampling approach. Another limitation of the research design was the use of surveys to collect quantitative data. The survey technique

relied on verbal behavior, which may be unreliable because respondents may have tried to elicit socially acceptable behaviors (Phillips, 1971). Another limitation of this study is the embedded mixed-method design. The qualitative strand was given less priority (Hanson, Creswell, Clark, Petska, & Creswell, 2005), with the aim of assessing the nature of the social networks of formerly homeless individuals before and after moving into a permanent supportive housing program.

Researcher's Perspective

This study was informed by the researcher's life experiences. First, the researcher previously worked with formerly homeless individuals with substance abuse and mental health disorders and those with a history of chronic homelessness living in a single site permanent supportive housing program. The researcher understands the context of the permanent supportive housing first model, and the opportunities and challenges of the program. In his previous role as a housing case manager, the researcher noticed that some residents in the housing first program continually interacted with their friends, family, professionals (including case managers, and social workers), and intimate partners. Others, however, had less contact with people and seemed isolated. Those who had large networks relied on their networks for all forms of support, and appeared to be well integrated into the community. Others who had limited networks seemed isolated and less engaged in treatment services. They were also not interested in community activities or engagement with professional staff and appeared lonely. Based on these experiences, the researcher became curious about the role that social support networks play in the wellbeing of those who transition into housing from homelessness.

Second, the researcher is originally from Ghana and has lived in the United States for about 11 years. The researcher grew up in a culture that had large social support networks that

provided social support to cope with both positive and negative life events. The researcher had always believed that social relationships influenced all aspects of wellbeing, physical and psychological. Further, the researcher's belief in the effects of social relationships on wellbeing has been buttressed by his education in social work. The researcher has two previous degrees in social work. Social work education stresses the importance of environmental factors on the wellbeing of the individual. Environmental factors, within the social work literature, include interactions with members of one's social networks.

Chapter Summary and Conclusion

In summary, the HEARTH Act shifts the paradigm of homeless services from a treatment orientated approach to a focus on providing stable supportive housing in addition to treatment. The provision of permanent supportive programs decreases substance abuse and mental health disorders. However, it is important to move beyond the provision of housing to understanding the consequences of social networks on wellbeing after homeless individuals have transitioned out of homelessness into housing. Although the effects of social networks on wellbeing among the homeless have been given adequate attention in the literature, not much has been done to investigate the effects of social networks of formerly homeless individuals in permanent supportive housing programs. This study provides a comprehensive understanding of the networks of formerly homeless individuals and informs practitioners on the role of social networks in the wellbeing of formerly homeless individuals.

CHAPTER 2: LITERATURE REVIEW

Introduction

Social networks, social support, and quality of social relationships are associated with psychological wellbeing among the general population. However, how social networks, perceived social support, and quality of social relationships manifest in formerly homeless individuals with co-morbid disorders has not been given adequate attention in the literature. The nature of social networks, social support, quality of social relations, and its impact on psychological wellbeing may be influenced by multiple social and personal factors. In the first section of this review, the literature on social network analysis is examined, including the history, theoretical foundations, and studies across disciplines. Secondly, this chapter discusses theories underlying this study: (a) The ecological systems theory is explored as an overarching perspective to illustrate the effects of multiple factors on social networks and wellbeing; (b) Life course perspective is also discussed to elucidate how normative and non-normative life events shape social networks, social support, quality of social relationships, and wellbeing; and (c) Social convoy theory as a conceptual model to assess the causal relationship among social networks, social support, quality of social relationships, and wellbeing. Finally, this chapter reviews studies on social support, quality of social relationships, and psychological wellbeing.

History of Social Network Analysis

The history of social network analysis converges under three main traditions. First, those who began using sociometric analyses, focusing on small groups and informed by graph theory methods (Scott, 2000). A key figure among the sociometric tradition is Moreno (1934), who focused his research on group structures. Moreno's earlier work pioneered social network

analysis using sociometric classification (Wasserman & Faust, 1994). Using sociometric classifications, Moreno (1934) used sociograms to visually display social relations in which an individual is positioned within a group or community. Moreno (1934) also used visual displays to show how an individual may hold more power by virtue of position in a network of social relations. Moreno (1934) further investigated how the structures of social relations are related to psychological wellbeing.

Apart from the sociometric tradition, a second strand of the social network tradition has been attributed to the work of anthropologists and sociologists in the 1930s and 1940s (Scott, 2000). This group of researchers examined interpersonal relations and the formation of ‘cliques’ within large systems. Influenced by Radcliffe-Brown and Durkheim, this group of researchers investigated sub-groups within large systems (Scott, 2000). For example, one major study that shed important light on the subgroupings in large systems was conducted at the Hawthorne electrical factory in Chicago. Using field observation, Elton Mayo, and his team from Harvard investigated work group behavior. They constructed sociograms to indicate group structures, eliciting the informal structures in the organization in contrast to the formal structures in the organization (Scott, 2000).

A third tradition, which was influenced by the two previous traditions, was instrumental in the development of contemporary network analysis (Scott, 2000). The researchers who developed the concept of network analysis included John Barnes, Clyde Mitchell, Elizabeth Bott, Berry Wellman, Peter Marsden, among others (Berkman & Krishna, 2014; Scott, 2000). Barnes and Bott used the concept of social networks to examine ties that extend beyond kinship to reveal how network connections influenced behaviors such as obtaining employment (Berkman & Krishna, 2014). Later development of social network analysis has been attributed to the influence

of American sociologists who came to the field of social network analysis with a quantitative orientation (Berkman & Krishna, 2014).

Theoretical Underpinnings of Social Network Analysis

Different disciplinary perspectives have influenced the development of social network analysis (Scott, 2000; Tracy & Whittaker, 2015). Within the body of literature on social network analysis, two schools of thought have developed about their theoretical underpinnings. Kapferer (1973) supported the school of thought that argued there is no network theory but rather a set of methods for analyzing relational data. Scott (2000) also supported this assertion by arguing that social network analysis is “an orientating idea and specific body of methods” (p. 36). On the contrary, Granovetter (1979) lamented the atheoretical approach to network analysis. Granovetter (1979) maintained that network analysis must be explicitly situated in a theoretical framework.

Informed by the debates over the role of theory in social network analysis, however, a review of the literature on social network analysis shows multiple theoretical orientations have been postulated to underlay social network analysis. These theories involve associating network structures and node positions to individual or group outcomes (Borgatti & Halgin, 2011). Early researchers in social network analysis were informed by mathematical models such as graph theory, statistical and probability theory, and algebraic models (Barnes & Harary, 1983; Wasserman & Faust, 1994), and more recently by Borgatti, Everett, and Johnson (2013). According to Barnes and Harary (1983):

Graph theory uses two primitive, undefined terms, point and line; these two terms are mentioned in a small number of axioms. Unproved statements assumed to be true. The primitive terms and the axioms together constitute the axiom system of graph theory (p. 239).

Other authors have suggested exchange theory as a theoretical basis for social network analysis (Cook & Whitmeyer, 1992; Kapferer, 1973; Whitten & Wolfe, 1973). Whitten and Wolfe (1973) argued:

For network analysis, the important aspect of exchange theory, with its concept of reciprocity, is its demonstration that any exchange can forge an interpersonal link, and interpersonal links can connect individuals in series of communicative, economic, manipulative, and other types of strands. Without exchange theory the notion of network would appear quite abstract, divorced from the realities of human life in specific social and cultural settings. (p. 731)

Although Kapferer (1973) argued that there is no network theory, prior to his assertion, he used exchange theory to frame an ethnographic study of group conflict in a zinc mine in Zambia, Southern Africa. Kriegel, Hsu, and Wenzel (2015) also used exchange theory to explore the effects of personal networks on HIV risk among homeless women.

Social capital theory has also been suggested as an orientation to social network analysis (Lin, 2008). According to the network theory of social capital, an individual's interactions within a network can produce profits; that is, resources embedded in social ties and influenced by network position and hierarchy (Lin, 2008). A number of researchers have applied a social capital theoretical framework to social network analysis. For example, Bottrell (2009) demonstrated this by using a social capital framework to investigate the social network of girls in public housing in Australia. Bottrell (2009) found the girls relied on their social networks to cope with adversity.

Tracy and Whittaker (2015) stressed the importance of attachment theory to social network research, emphasizing the utility of attachment theory to social network analyses. According to Berkman and Krishna (2014), "Attachment contends that the attached figure—most often, but not necessarily, the mother—creates a secure base from which an infant or toddler can venture forth and explore" (p. 239). Thus, attachment theory suggests that strong attachment in

infancy will lead to more secure and caring relations in adulthood, inferring that those who experience difficulties with social relations may have been lacking in attachment in childhood (Bowlby, 1969). A study by Green, Furrer, and McAllister (2007) found that mothers who had insecure attachment styles experienced less social support as compared with those with secure attachment styles; and an increase in social support among mothers led to more parent-child interactions. Through an attachment theoretical lens, Suchman, McMahon, Slade, and Luthar (2005) examined how drug-dependent mothers' early bonding experience, depression, illicit drug use, and perceived support combine to influence the family environment. The authors found that perceptions of relationships in everyday life played an important role in parenting among drug-dependent mothers.

Other theories have been used to frame network analysis. More recently, Westaby, Pfaff, and Redding (2014) examined social network analysis from a dynamic network theory. Social support has also been used to frame studies on social network analysis, with an emphasis on supportive ties surrounding an individual (Gottlieb, 1981). Kahn and Antonucci (1980) have suggested a social convoy theory to analyze network data and social support measures. Social convoy theory is examined in more detail later in this chapter.

Network Analysis Across Disciplines

Social network analyses have been applied across different disciplines in the social science literature.

Sociology. Early sociologists played a seminal role in the development of social network analyses, which has informed contemporary research on social network analysis. Influenced by the work of Simmel, early sociological studies examined how personal network structures constrain behavior (Wellman, 1983). Analyzing social networks from an egoistic perspective,

sociologists have examined characteristics and structures of personal network and behavior outcomes; sociologists have also analyzed whole network structures in large-scale social systems (Wellman, 1983). Menger, Stallones, Cross, Henry, and Chen (2015), for example, studied the factors that foster interagency collaboration among agencies working on suicide prevention. Using network and regression analyses, the study revealed network structures and relations among suicide prevention agencies. Menger et al. (2015) found that suicide prevention organizations were more connected in sharing resources and coordinating referrals than in coordinating trainings.

Public health. Public health scholars, especially within the field of epidemiology, have also expanded the literature on social network analysis. Much of the literature on social network analysis in public health has focused on the social determinants of health, influenced by the work of sociologists such as Durkheim. In *Suicide*, Durkheim examined how social structures affected suicide (Durkheim, 1966). Earlier studies in public health investigated the effects of lack of social relations on mortality (Berkman & Krishna, 2014). In a review of the literature on social support, Cobb (1976) found social networks shielded people from the health problems such as depression and alcoholism; in addition, support variables decreased medication use and speeded recovery. Other network analytic studies within the public health arena have concentrated on sociometric network analysis. For example, in a sociometric network analysis, Helleringer and Kohler (2007) investigated the structural position of HIV-infected individuals within a network of young adults in Malawi. The study found social network characteristics were important determinants in the spread of HIV. Sparsely connected networks had higher HIV prevalence than dense networks.

Other network analytic studies in public health emphasized the effects of social support on wellbeing. Rook (1984), for example, studied the negative and positive impacts of social relations on health among 120 widowed women in senior centers. Social network data collected in the study included asking participants about supportive and problematic social ties. Rook's (1984) study suggested negative social relations affected wellbeing. Recent studies in this area have also confirmed Rook's (1984) earlier observation. Cohen and Lemay's (2007) study buttressed previous studies that have shown a relationship between social relations and health. Their study found participants with more diverse networks had more social interactions and were less involved in smoking and alcohol use.

Social work. Network analysis has been useful for social work research due to its focus on individuals or groups within the context of relations with others. Current network analytic studies in social work have suggested recommendations to improve interventions with vulnerable populations (Henwood et al., 2015; Kriegel et al., 2015; Min et al., 2013; Rice et al., 2011), stressing the importance of the social environment in supporting various aspects of wellbeing. Min et al. (2013), for example, using a longitudinal design, examined the changes in the patterns of the network of women in residential treatment and those in intensive treatment. The authors asked participants to list 25 people in their networks with whom they had contact with during the past 6 months. They asked participants if each person listed had used drugs or alcohol with them. The authors found that the personal networks of those who entered residential treatment had more alcohol and drug users in their networks than those in intensive outpatient treatment. Consistent with the social work research tradition, Min et al. (2013) suggested that practitioners assess the social network of clients in treatment at initial intake and during the treatment process, emphasizing positive social relations as important to achieving positive treatment outcomes.

Kriegel et al. (2015) was another relevant study on social network analysis for this review. The authors explored the mediating role of personal networks on the association between HIV-risk behaviors and incarceration among of 445 women with histories of homelessness. The study found that although personal networks did not completely explain the relationship between incarceration and risk behavior, personal networks partially mediated the relationship between incarceration and crack/cocaine use. In consonance with social work research, the authors suggested the incorporation of personal networks in intervention for women with a history of incarceration.

Theoretical Perspectives

The theoretical foundation of this study includes ecological systems theory, life course perspective, and social convoy theory. Theory in applied professions such as social work, “help[s] explain, anticipate, know, and act in the world in better and more informed ways, and to better ends and outcomes” (Lynham, 2002, p. 222).

Ecological Perspective

The study was grounded in the ecological systems theory as an overarching theoretical perspective. The ecological systems theory views human development as a product of reciprocal interactions between an individual and the environment in which the individual is embedded (Bronfenbrenner, 1979; Wulczyn, Barth, Yuan, Harden, & Landsverk, 2005). Within this perspective, human development is viewed as a dynamic process between the individual and the environment. The environment is conceived as “a set of nested structures, each inside the next like a set of Russian dolls” (Bronfenbrenner, 1979, p. 3). The ecological framework stresses the importance of social relations in understanding developmental changes in children and adults

(Bronfenbrenner, 1979), which is at the core of the analysis of this study. Bronfenbrenner (1994) asserted:

human development takes place through processes of progressively more complex reciprocal interaction between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time. (p. 38)

Social interactions between the individual and others in the immediate environment have implications for the individual's developmental outcomes, including their psychological wellbeing. The ecological framework recognizes the importance of situational and role changes that an individual experiences through the life course and the associated behavioral outcomes (Bronfenbrenner, 1979).

Ecological systems theory is methodologically relevant to the study of social networks. Bronfenbrenner (1979) argued, "In ecological research, the properties of the person and of the environment, the structure of the environmental settings, and the processes taking place within and between them must be viewed as interdependent and analyzed in systems terms" (p. 41). By situating this study in the ecological perspective, the study seeks to assess the multiple factors of social relations that may influence psychological wellbeing. The ecological perspective recognizes the importance studying "ecological transitions" (Bronfenbrenner, 1979, p. 6), as they occur when an individual's place in the environment is changed by, for example, a change in role or situation. This study reveals some of the nature of social relations of formerly homeless individuals after moving into supportive housing, emphasizing how life transitions shape the nature of social relations.

The ecological systems theory comprises five systems that interact with each other to affect the development of an individual: micro, meso, exo, macro, and chrono (Bronfenbrenner,

1979; Hong, Algood, Chiu, & Lee, 2011). Each of these systems is illustrated below to indicate its relevance to network analysis of formerly homeless individuals.

Microsystems are the immediate environment in which the individual is situated, which engenders a complex reciprocal interaction between the individual and the environment (Bronfenbrenner, 1977). For this study, the immediate setting is the permanent supportive housing single site that houses formerly homeless individuals. Individuals in permanent supportive housing engage in a complex reciprocal interaction with their neighbors (other formerly homeless individuals), property management, case managers, and therapists or counselors who are available onsite or off site. These individuals, formal (professional staff) and informal, constitute a social network within the microsystem of individuals in permanent supportive housing.

The second system is the mesosystem. Using the mesosystem, this study examined the interactions between the individual and other systems. Bronfenbrenner (1977) explained that the mesosystem “comprises the interrelations among major settings containing the developing person at a particular point in his or her life” (p. 515). The mesosystem of this study may encompass interactions between study participants and outside agencies.

Third, Bronfenbrenner (1994) proposed the exosystem, which involves the interactions between two or more systems of which the individual is not a part. Exosystem in this study includes agency policies that directly or indirectly may alter study participants’ wellbeing, and social interactions (Bronfenbrenner, 1994). Fourth, Bronfenbrenner (1994) proposed the macrosystem; the culture or society in which the individual is embedded. The macrosystem may also have a significant effect on social networks and wellbeing. A person’s social networks and wellbeing may be shaped by social norms or culture. The ecological systems theory also includes

the chronosystem, which was added later to indicate the process of aging and time into human development (Bronfenbrenner, 1994). Among formerly homeless individuals of this study, the chronosystem includes the transition from homelessness to housing which may change the structure and composition of their social networks.

Bronfenbrenner and Crouter (1983) suggested using multiple factors to study human development, and incorporating controls to examine the effects of multiple factors. Prior to the development of the ecological systems theory, Bronfenbrenner (1974) observed the limitations in research up to that point that narrowly focused on the individual in isolation from the environment in which the individual is situated, resulting in research conclusions that were not comprehensive. Bronfenbrenner (1974) referred to this type of research as ecologically invalid. This study is in consonance with ecological systems theory because it seeks to study formerly homeless individuals within their natural setting.

Life Course Perspective

In addition to the ecological systems perspective, this study draws on a life course perspective to investigate the social relationships of formerly homeless individuals in a supportive housing program. According to Scott and Alwin (1998), a life course perspective “explicitly emphasizes the need to consider individual lives from the point of view of trajectories of events and experiences” (p. 103). Life events have been defined as normative and non-normative. Most people experience normative life events, such as aging; however, very few people experience non-normative life events such as homelessness (Wrzus, Hänel, Wagner, & Neyer, 2013). In a meta-analysis on social networks across life events, Wrzus et al. (2013) found that social networks change from adolescence to adulthood and to old age. However, a network of family and a few friends surround the individual through both positive and negative life

events. Padgett, Smith, Henwood, and Tiderington (2012) examined adverse life events of formerly homeless individuals with serious mental illness and co-occurring substance abuse from a life course perspective. From a life course perspective, Lang (2004) suggested that personal and situational factors influence social networks and their change. Social networks, however, vary over the life course (Lang, 2004).

Social Convoy Theory

In addition to the two theoretical perspectives outlined above, this study was situated within the social convoy model (Antonucci, 1986). Berkman and Krishna (2014) emphasized that the theoretical underpinning of social networks must test the assumption that an individual's social network structure shapes the behavioral and attitudinal outcomes of the individual. According to Antonucci, Birditt, and Ajrouch (2011), "The convoy can be thought of as a structural concept shaped by personal (age, gender, personality) and situational (role expectation, resources, demands) factors that influence the support relations experienced by the individual" (p. 430). Moen and Hernandez (2009) described the convoy as connected relationships that play out as dynamics between two or more people. The convoy may provide protection which may lead to better mental health and decrease psychological distress (Antonucci et al., 2011).

Convoy is metaphorically used to connote that each person moves through life surrounded by people who are important to the individual, whom the individual relies on for support and vice versa (Kahn, 1979). According to Kahn (1979), demographic and situational characteristics of the individual determines that convoy. The social convoy model can be applied in cross-sectional studies to determine social network structure and composition and function in multiple research contexts and across age groups and cultures (Akiyama, Antonucci, Takahashi, & Langfahl, 2003). A number of studies have documented the social convoy model across

different settings and populations to test the model, including the United States, Japan, Mexico, England, and Bangladesh (Ajrouch, Antonucci, & Janevic, 2001; Fuller-Iglesias & Antonucci, 2016).

The convoy model provides methodological considerations that support this study. The social convoy theory provides a framework for the “analysis of social network data and the measurement of social support” (Kahn & Antonucci, 1980, p. 277). As has been previously noted, the study analyzed the social networks of formerly homeless individuals in addition to examining the nature of perceived social support provided, and the quality of personal relationships embedded in the networks of individuals in a permanent supportive housing first program. The convoy model is particularly useful for this study because, as Kahn and Antonucci (1980) noted, applying a cross-sectional survey with the convoy model allows examination of differences between groups by demographics such as gender, age, race, network composition and social support.

The convoy model is situated within the life course perspective and emphasizes the dynamic nature of social relations, recognizing social relations as both evolving and stable across the life span (Kahn & Antonucci, 1980). The methodology of this study incorporates both current and retrospective reviews of social networks of formerly homeless individuals. This model is particularly useful for the study of formerly homeless individuals because homeless individuals tend to have dynamic relations over the course of their life. Central to the convoy model is that social relationships vary in their closeness, quality, function and structure. The structure, function, and quality of networks affect wellbeing, and are influenced by personal (e.g., age, race, gender) and situational (e.g., moving to a new location) factors. Network functions include

providing aid, affection, affirmation exchanges; network structure includes size, composition, and contact frequency (Antonucci, Ajrouch, & Birditt, 2013).

Social Support

The concept of social support and wellbeing may conceptually seem similar in meaning; however, Turner (1981), using factor analysis, found that the two constructs were distinctively separate. Social support can be conceptualized as formal or informal (Dolbin-MacNab, Roberto, Finney, Hayslip, & Smith, 2013). Informal support may include support received from friends, relatives, and neighbors (Litwak, 1985), and formal support may involve contractual or paid arrangement (Litwak, 1985). This study includes both formal and informal support measures to elucidate the multiple interactions that formerly homeless individuals may have with friends, families, and professional relations (e.g., social workers, counselors, others).

A large body of literature has investigated the association between social support and different domains of wellbeing. However, it is important to note that the relationship between social support and domains of wellbeing may be contingent on how social support is conceptualized (Barnett & Gotlib, 1988). In a review by Lett et al. (2005), greater levels of perceived social support were associated with longer survival after heart attacks. The study by Thompson and Peebles-Wilkins (1992) with mothers showed the association between social and support psychological wellbeing. Supportive male partners significantly decreased psychological distress and depression. Similarly, a study of women who were diagnosed with breast cancer showed perceived emotional support was moderately associated with prolonged survival after adjusting for prognostic factors (Soler-Vila, Kasl, & Jones, 2003).

Other studies have investigated differentiated aspects of social support on wellbeing among the homeless population. Hwang et al.'s (2009) study with homeless individuals showed

that perceived emotional support is associated with better mental health status. In a cohort of participants with heart diseases, Woloshin et al. (1997) found inadequate tangible support was a significant predictor of death and decline in physical function during a year follow-up period. Conversely, Merz, Schuengel, and Schulze (2009) reported more instrumental support was associated with negative wellbeing.

Although several studies have examined the linkages between social support measures of wellbeing, research studies investigating the relationship between social support and wellbeing among formerly homeless persons in supportive housing is scarce. Johnstone, Parsell, Jetten, Dingle, and Walter (2016) argued “there are significant limitations in the evidence base about the role of social support and the relationship between social support and wellbeing for people with experiences of homelessness” (p. 2). In addition, recent studies exploring the path mechanisms through which perceived social support influences wellbeing among adults in supportive housing with a history of chronic homelessness is scarce as well. Tsai, Mares, and Rosenheck (2011) found that social support differed by race and community characteristics among chronically homeless adults 12 months after entering supportive housing. Social support was higher among Blacks in communities with higher proportion of Blacks and higher population density. Their measurement of social support included asking respondents the number of persons available in their network to loan \$100. However, previous research findings showed that formerly homeless individuals may have limited social networks due to occurring disorders (Hawkins & Abrams, 2007), and they may not have people in their network to loan them \$100 after 12 months of entering supportive housing. A more realistic assessment of social support is warranted for the literature that takes into consideration prior history of homelessness and the support resources that may be perceived.

Quality of Social Relationships

Several studies investigating social support and wellbeing have not considered satisfaction with the quality of the social relationships. Social relationships may differ in their quality (Merz et al., 2009), however, they may still be perceived as supportive. Furthermore, among adults with a history of chronic homelessness in supportive housing, it is critical to assess the quality of their social relationships, as previous research has shown that problems with social relationships were correlated with wellbeing (Rook, 1984). Antonucci and Ajrouch (2007) observed that the lack of quality relationships was inversely related to measures of wellbeing. Birditt and Antonucci (2007) also found that within friendship networks, people who reported quality relations from at least two sources showed the highest level of wellbeing. Similarly, in an intergenerational study of parents and children in the Netherlands, Merz et al. (2009) found that relationship quality—measured by asking respondents to rate relationship quality on a scale from 1 (not great), 2 (reasonable), 3 (good), to 4 (very good)—was a strong predictor of wellbeing. Interestingly, Merz et al. (2009) noted that relationship quality may moderate the negative effects of support on wellbeing. Similarly, quality of social relations, as measured by satisfaction with social networks, has shown better prediction of depression than objective measures of network size and composition (Antonucci, Fuhrer, & Dartigues, 1997).

Social Network Structural Characteristics

Although there have been a number of social network analytic studies on homelessness, a significant gap in the literature remains on social networks of people who exit homelessness into permanent supportive housing programs. Henwood et al. (2015) used qualitative data to investigate the social networks of adults in supportive housing. A weakness of the study, as noted by Henwood et al. (2015), was that the researchers analyzed the social networks of

participants from qualitative interviews. Participants' construction of their networks might be different from researchers' interpretations. Henwood et al. (2015) found significant gaps in the literature on the social network characteristics, as well as social support and quality of social relationships derived from social networks.

Various social network characteristics and their effect on wellbeing have been examined in the literature. Some studies have used a composite index or latent measure of social networks (Eng, Rimm, Fitzmaurice, & Kawachi, 2002; Litwin, 2003), while other studies have assessed different aspects of social networks. Network type, that is, the constellation of one's network (Litwin & Landau, 2000), has been given adequate attention in the literature. Network types may include friendship, family, intimate partners, professional relations and an array of network types that may be subjectively defined by the receiver or giver of social support. Among homeless youth networks, family members provide most of the support (la Haye et al., 2012). Much of the previous research on social network types have focused on the elderly population across different contexts. Wenger's (1991) work in Europe identified network types that were associated with social support. More recently, Litwin and Shiovitz-Ezra (2011) found that network types were associated with wellbeing measures after controlling for demographic and health confounders.

The effects of network size on various aspects on social support and wellbeing have also received considerable attention in the literature. Among individuals with long-term psychiatric disabilities living in housing, Nelson, Hall, and Walsh-Bowers (1998) found that the size of peer networks correlates with positive affect. In a sample of French adults, Antonucci et al. (1997) found those with larger networks were less likely to be depressed. Toohey, Shinn, and Weitzman (2004) found that formerly homeless and housed individuals did not differ in the size of their social networks, reported a mean network size of 5.02 and 4.86, respectively. Haines and

Hurlbert (1992) also showed that the effects of network size on wellbeing measures may differ by gender. They found that effects of network size on distress increases with access to social support. Another study found women and men over 40 with more education had larger networks (Antonucci, Ajrouch, & Janevic, 2003). Interestingly, homeless individuals on Social Security Income (SSI) have showed positive significant correlation between psychological distress and network size (Segal, Silverman, & Temkin, 1997).

Another aspect of social networks included in this study is frequency of contact, that is, how often does a person interact with people within their networks (Moren-Cross & Lin, 2006). Musick and Wilson (2003) reported that frequency of contact with friends and relatives was not correlated with depression. However, in a sample of Swedish older adults, Lennartsson (1999) found that no contact with friends increases the risk of health problems, which included measures of depression and psychiatric illness. A longitudinal study of homeless individuals with co-morbid disorders showed frequency of contact with network members predicted symptom improvement (Trumbetta et al., 1999). Fewer closer relationships have also been reported to be related to depressive symptoms (Barnett & Gotlib, 1988).

Personal and Situational Characteristics

Contemporaneously and longitudinally, personal and situational characteristics influence social relations and wellbeing (Antonucci et al., 2011). However, how demographic and situational characteristics differentiate among adults in supportive housing have not been fully explored. These personal characteristics include age, gender, education, and race; situational characteristics include contextual factors, such as current life situations which may influence individuals' convoy or network (Antonucci et al., 2011; Levitt, 2005). Changes in housing status (from housed to homelessness, and vice versa), may change the structure and function of an

individual's network. Levitt (2005) suggested that changes in life may result in reconstituting social networks to meet supportive needs.

Importantly, situational changes such as incarceration have been shown to affect the structure and function of social networks. Among homeless women with a history of incarceration, the type of individuals in their social networks appears to be associated with history of incarceration (Kriegel et al., 2015). Probationers with co-occurring mental and substance abuse problems have smaller network sizes, heavily comprised of professionals (Skeem, Loudon, Manchak, Vidal, & Haddad, 2009). The same study showed that probationers with co-occurring mental and substance abuse problems had more frequent contacts with their probation officers and treatment providers (Skeem et al., 2009).

Letiecq et al. (1998) found that women in emergency shelters and transitional housing received significantly less family support than housed mothers. The same study found women in emergency shelters received less support from male partners than housed mothers. More recently, Volker et al. (2016) found similar network sizes among core network members who were incarcerated six months before and after incarceration. Further exploration of the effects of situational and personal characteristics influencing structural characteristics and functional aspects of social networks on psychological wellbeing is warranted.

Psychological Wellbeing

Although terms subjective wellbeing, happiness, positive affect, and morale, have been used in the literature interchangeably (George, 2010), this study uses the term psychological wellbeing to encapsulate two distinct philosophical views that underpinned the concept of wellbeing: hedonism and eudaimonism. Hedonism refers to wellbeing as pleasure or happiness (Ryan & Deci, 2001). Conversely, the eudaimonic paradigm argues that not all pleasure or

happiness leads to wellbeing (Ryan & Deci, 2001). Wellbeing is not just happiness or pleasure but the realization of human potentials, that is, to realize one's *daimon* or true nature (Waterman, 1993). A recent study on wellbeing and social support by Johnstone et al. (2016) compared those who were homeless at the time versus those who had exited homelessness. They found psychological wellbeing measures declined among those who are homeless and increases among those who are stably housed. However, previous studies have not investigated the influence of different aspects of social networks on measures of psychological wellbeing of formerly homeless adults in supportive housing. The importance of assessing psychological wellbeing cannot be over emphasized, as it is correlated with physical disorders. Using a sample of 60 individuals with gastrointestinal disorders, Revicki, Leidy, and Howland (1996) reported that the total of the 22-item psychological wellbeing scale was correlated (-0.58) with the total score of a gastrointestinal symptoms scale.

The literature has a significant gap on how structural qualitative aspects of social, i.e. perceived social support and satisfaction with quality of social relationships, influence psychological wellbeing. This study sought to fill this research gap by examining the mechanisms through which social networks are related to psychological wellbeing.

Conceptual Framework

Based on the literature and the theoretical perspectives outlined above, Figure 2.1 below illustrates how all the key variables in this study are related. Figure 2.1 indicates personal and situational characteristics influence social network structural characteristics (adapted from Antonucci, 2007). Social network structure then influences perceived social support, which in turn is related to relationship quality and wellbeing.

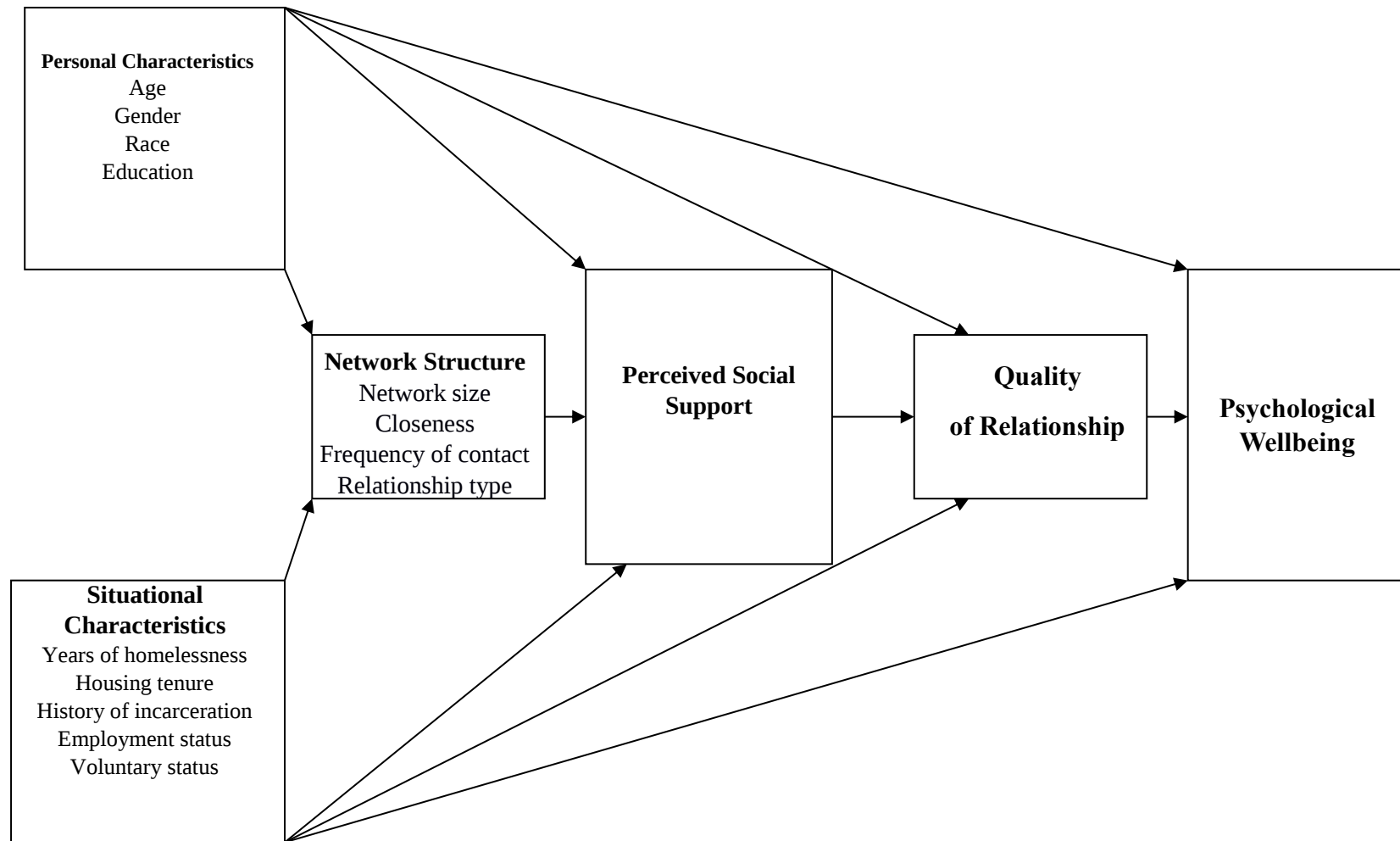


Figure 2.1. Social Convoy Model showing how variables in this study are related.

(Adapted from Antonucci, 2007)

Chapter Summary and Conclusion

In summary, social network structural characteristics, social support, and quality of social relationships appear to correlate with wellbeing domains. This chapter also reviewed ecological systems theory, life course perspective, and social convoy theory to provide a lens to investigate the social networks of formerly homeless individuals with a history of chronic homelessness. However, the literature indicates that personal characteristics, such as gender, race, and education may influence social networks. Similarly, situational characteristics, such as history of incarceration, may correlate with social networks. Extensive literature has investigated the nature of homeless social networks and the potential correlation with wellbeing. However, the effects of networks on wellbeing measures among formerly homeless individuals with a history of chronic homelessness is scarce in the literature. Previous studies on the networks of formerly homeless social networks have not investigated the different dimensions of personal networks and how they are associated with measures of wellbeing.

CHAPTER 3: METHODOLOGY

Introduction

A mixed-method design was employed to examine the effects of the social networks of formerly homeless individuals in a permanent supportive housing program. This study embedded a narrow qualitative study within a dominant quantitative study to retrospectively explore the nature of participants' social relationships prior to entering housing and the effects of network characteristics on psychological wellbeing after entering housing. Quantitative and qualitative components both relied on purposeful sampling. The quantitative and qualitative sampling purposefully recruited participants who could clearly articulate the nature of their networks prior to entering housing and the characteristics of the social networks. To understand the influence of personal and situational characteristics on the social networks of respondents, personal characteristics, including age, gender, and race were collected. Situational characteristics including respondents' education, housing tenure, incarceration history, and years of homelessness were also collected. Respondents' social network structure, function, and quality of social relationships were assessed to determine how they each contribute to the wellbeing of participants. Furthermore, the study assessed how the association between network structure and psychological wellbeing was mediated by social support based on the quality of social relationships. Qualitatively, this study explored the nature of the social networks of formerly homeless individuals before entering a supportive housing program.

Research Design and Rationale

This study was situated within post-positivist and constructive paradigms. By adopting a combination of two paradigms (Johnson, 2017), the researcher sought to come to a broader

understanding of the association between social networks and the wellbeing of formerly homeless individuals. Phillips (1971) succinctly defined a paradigm as “a set of assumptions, both stated and unstated, which provides the basis on which scientific ideas rest” (p. 44). A combination of paradigms has been suggested in mixed-method research (Creswell & Plano Clark, 2011; Johnson, 2017). Guba and Lincoln (2005) asserted, that it is, indeed “possible to blend elements of one paradigm into another, so that one is engaging in research that represents the best of both worldviews” (p. 201). Although post-positivist and constructivist paradigms have competing assumptions of the ontology of reality, the researcher postulates that they can complement each other in providing a better understanding of the association between social networks and psychological wellbeing. The post-positivist paradigm assumes a critical realist ontology, or the belief that there is some objective truth that can be measured through our observation and experience (Spencer, Pryce, & Walsh, 2014). Epistemologically, post-positivism adheres to a modified objectivity, which assumes “objectivity as a ‘regulatory ideal’ but recognizing that it cannot be achieved in any absolute sense. It can be achieved reasonably closely, by striving to be as neutral as possible” (Guba, 1990, p. 21). Thus, this researcher assumes that knowledge within this school of thought is tentative, and not absolute. Guided by the post-positivist orientation, the researcher used surveys to collect quantitative data on participant’s social networks, social support, quality of social relationships, and psychological wellbeing.

Constructivism, on the other hand, adheres to a relativist ontology, which subscribes to the belief that there are multiple realities founded socially and experientially on contexts (Guba, 1990). Within this paradigm, knowledge is socially constructed based on people’s lived experiences; different groups of people have different concepts of reality. Similarly, the

researcher assumes that the nature of social networks is socially constructed and contextualized. Knowledge within the constructivist paradigm is acquired through a hermeneutic and dialectic process through interpretations based on experiences and context (Guba, 1990). The researcher and participants come to a shared understanding of social networks based on their subjective interpretations.

This study was also situated within a mixed-method case study design, specifically with a concurrent nested or embedded design (Hollstein, 2014). Emmel and Clark (2009) demonstrated the use of mixed-method case study to examine how social networks affect the wellbeing of people living in inner-city neighborhoods. Several definitions of mixed-method research have been postulated (Johnson, Onwuegbuzie, & Turner, 2007). However, Creswell and Plano Clark's (2011) definition of mixed-method that emphasizes the mixing of both post-positivist and constructivist research paradigms, and quantitative and qualitative methods in data collection and analysis guided this study. According to Creswell and Plano Clark (2011), mixed-method research includes framing the research study within multiple philosophical orientations and theoretical lenses, and collecting and analyzing both qualitative and quantitative data. Hollstein (2014) suggested mixed-method designs may include embedded or nested designs, which "either the qualitative or the quantitative strand constitutes only a small part of the study, which may be conducted in parallel with, subsequent to, or as a prelude to the major part of the research" (p. 16). The embedded or nested design approach embeds or nests a method within a predominant method; the embedded method seeks from participants' responses to answer different research questions than the dominant method (Creswell, 2003). The symbol for this embedded case study design is: QUAN+qual research, QUAN symbolizing the dominant quantitative strand and qual the embedded qualitative strand (Johnson et al., 2007).

Both quantitative and qualitative data were collected concurrently, however, the qualitative strand formed a narrow part of the study (Creswell, 2003). The rationale for mixing both quantitative and qualitative data was for the qualitative component to complement the quantitative component. The qualitative component explored the nature of social relations prior to entering housing, while the quantitative component examined the effects of social networks on wellbeing. By combining both the quantitative and qualitative components, the study aimed to provide comprehensive or fuller understanding of the research problem that a single method may not be able to adequately address (Creswell, 2015). Combining quantitative and qualitative analyses in social network analysis engenders the most useful results (Hollstein, 2014). By using multiple methods, the researcher sought to provide rigor to the study as well as a comprehensive understanding of the effects of social networks on the wellbeing of formerly homeless individuals in permanent supportive housing.

The qualitative strand focused on a retrospective exploration of the nature of the social networks of respondents while they were homeless. Antonucci (2001) suggested, “To understand how individual experiences a relationship at any one point in time, it is most useful to understand the history of that specific relationship...” (p. 430). The qualitative strand of this study draws on narrative assumptions to elicit participants’ social networks while they were homeless. Chase (2005) defined narrative as a “retrospective meaning making—the shaping or ordering of past experience.” (p. 656). Using narratives in network analysis allows the researcher to explore the content and form of social relations, and “reveal how ties are defined, understood and acted upon” (Crossley et al., 2015, p. 107).

Data Collection

Quantitative and qualitative data were collected concurrently. The quantitative data was collected using survey techniques (see Appendixes A, B, and C). Surveys may be used for descriptive, explanatory, and exploratory purposes using questionnaires administered to a sample of a population (Rubin & Babbie, 2016). Phillips (1971) suggested survey data may include information on respondents' social relationships to investigate behavior. The survey was administered through face-to-face interviews.

Research Setting and Participants

A sample of 80 individuals was recruited from the Colorado Coalition for the Homeless (CCH) permanent supportive housing program for the quantitative strand. CCH's permanent supportive housing is based on a Housing First approach. According to the CCH (n.d.):

[It] has adopted an approach designed to help chronically homeless individuals move immediately off the streets or out of the shelter system, and into housing. Called "Housing First", this approach includes rapid access to housing, crisis intervention, and follow-up intensive case management and therapeutic support services to prevent the recurrence of homelessness. Housing First is designed to respond to the most acute needs of chronically homeless individuals with disabilities by providing immediate access to housing, and through the provision of housing, to provide the wraparound supportive services necessary to maintain that housing and to improve overall health. (para. 1)

The CCH has been at the forefront in the provision of permanent supportive housing to chronically ill homeless individuals with substance abuse and mental health disorders. The agency currently has over 1000 residents in their permanent supportive housing program.

Inclusion criteria. Participants met the inclusion criteria if they were: residents of CCH supportive housing program and at least 18 years of age, with current or previous history of substance abuse or mental health disorder, and history of chronic homelessness. Participants had to be able to comprehend basic understanding of their social networks in order to participate.

Based on the researcher's judgment, potential respondents who might seem significantly impaired by substance abuse or mental health disorders were excluded from this study.

Sampling

Both quantitative and qualitative methods used purposeful sampling to guide data collection. From the quantitative study sample of 80, a subset of 20 participants were sampled for the qualitative interviews. A nested or embedded mixed-method design may involve sampling a subset of the quantitative sample for an in-depth interview (Onwuegbuzie & Collins, 2007). In purposeful sampling, the goal is twofold:

The first is to ensure that all the key constituents of relevance to the subject matter are covered. The second is to ensure that, within each of the key criteria, some diversity is included so that the impact of the characteristic concerned can be explored. (Ritchie, Lewis, & Elam, 2003, p. 79)

The qualitative sampling sought to elicit views from diverse participants based on race, gender, and age. However, participants who seemed capable of articulating their social networks during homelessness were selected.

Ethics and Values

This study intended to follow established ethics and values to ensure that the rights of participants were respected. In this regard, the study protocol went through two institutional reviews: the Colorado Coalition for the Homeless Quality Assurance Review Board and Colorado State University Institutional Review Board. First, study protocol was submitted to the agency's review board. Second, after it was approved by the agency review board, it was submitted to the Colorado State University Institutional Review Board. Data collection did not include participants' real names or health-related diagnoses, but other demographic characteristics such as gender, race/ethnicity and housing tenure were collected. Only the

researcher and principal investigator had access to the data. Participants were given a \$10 Walmart gift card for their participation. Recruitment flyers were posted at the agency's offices, with instructions for potential participants to call the researcher to schedule interviews. Participants were informed of their rights to either participate or not prior to conducting interviews. Participants were also informed of their rights to discontinue the interview at any point if they felt uncomfortable in answering any of the interview questions. Similarly, the researcher could discontinue the interview at any point if participants seemed distressed. A list of available resources was available to participants if they appeared distressed. Interview locations were at participants' discretion.

Quantitative Measurement

Quantitative measures included predictor variables, mediation and moderation variables, and dependent variables. Table 3.1 shows how variables in this study were operationalized.

Covariates. These included collecting personal and situational characteristics (see Appendix C): (1) gender, (2) race/ethnicity, (3) age, (4) education, (5) housing tenure, (6) history of incarceration, (7) employment status, (8) voluntary status, (9) years of homelessness. Gender was categorized by female, male, and other. Data on participants' race /ethnicity was categorized by White, Black, Hispanic, and Other. Respondents were asked to indicate their age and level of education. Age was measured in years. Education was measured by asking respondents to indicate their level of education: (1) less than high school, (2) high school, (3) some college, (4) bachelor's degree or more. How long participants were in housing was measured in years. Life time incarceration history was assessed by asking respondents to indicate whether they have ever spent a night in jail or prison (Kriegel et al., 2015); and it included how long they were in jail/prison. Fisher, Reynolds, Wood, and Johnson (2004) found good test-retest reliability on

questions that ask respondents about life time incarnation. In addition, participants were asked how long they were homeless (measured in years).

Demographic and situational characteristics were used to assess whether participants vary on predictors and outcome variable. In addition, demographic and situational variables were included in regression analysis to assess how they contribute to predicting participants' psychological wellbeing.

Independent variables. Social network variables were collected using the Social Network Questionnaire (SNQ; see Appendix A) to assess social network structure (Kahn & Antonucci, 1984). The SNQ uses the hierarchical mapping technique to diagram respondents' social networks (Antonucci, 1986). SNQ involves using a diagram of three concentric circles with the word "You" representing the participant in the middle. Visual diagrams in surveys provide more information to respondents (Dillman, Smyth, & Christian, 2014). The SNQ has been used to examine the relation between social networks and wellbeing with mothers (Levitt, Weber, & Clark, 1986) and children (Levitt, Guacci-Franco, & Levitt, 1993). Following Antonucci and Akiyama's (1987) study of adult social networks, respondents were then asked to place those who are "so close that it's hard to imagine life without them" in the inner circle; those who are "not quite as close, but still very important" are placed in the second circle; and those who they have not mentioned "but who are close enough and important enough in their life" are then placed in the outermost circle. The next step asked respondents to interpret their relationships with the first ten people indicated in the network diagram. This included the type of relationship and frequency of contact. Participants were then asked to indicate network members who might provide social support. In addition, participants were asked to indicate the quality of their relationship with each person in their network.

Network size. This was measured by the total number of people in all three concentric circles.

Closeness. This was a continuous variable, 3 indicated circle one, 2 indicated circle two, and 1 indicated circle one (Ajrouch, Fuller, Akiyama, & Antonucci, 2017).

Relationship type. This was measured using proportion, that is, the proportion of friends, families, intimate partner, and professional relationships in the network (Hall & Nelson, 1996).

Frequency of contact. This was measured using a 5-point scale with 1 = Very rarely, to Very frequently = 5. A composite mean of frequency of contact with network members was computed.

Perceived social support. Perceived social support was used in regression models and entered as a mediating variable in the mediation model. This was measured by six questions adapted from Norris and Kaniasty's (1996) study of adults. They identified nine measures of perceived social support from two scales, Interpersonal Support Evaluation List (Cohen, Mermelstein, Kamarck, & Hoberman, 1985) and the Social Provision Scale (Cutrona & Russell, 1987), using a principal-components analysis. This study used six items as measures of three types of perceived support (two items each): tangible support (e.g., having someone to go to the doctor with, and someone who would lend you a dollar), emotional support (e.g., having someone to talk to about intimate problems, and having someone to share private worries), and informational support (e.g., someone to turn to for advice concerning family problems, and someone who could offer suggestions for personal problems). All questions were scored on a 4-point scale (1 = definitely false, 2 = probably false, 3 = probably true, 4 = definitely true). The total mean of all three subscales were used to indicate total perceived social support.

Quality of relationship. Quality of relationship was used in regression models and as a moderating variable in conditional process model. This was measured by asking respondents to rate the quality of their relationship with each person in their network (4 = very satisfied, 3 = somewhat satisfied, 2 = somewhat dissatisfied, 1 = very dissatisfied). Previous research has used this measure to assess the quality of social relationships (Antonucci et al., 1997).

Dependent variable. The researcher used the General Wellbeing Schedule (GWB; refer to Appendix B) to measure psychological wellbeing. The GWB is an 18-item self-administered instrument that assesses broad self-representations of subjective feelings of wellbeing and distress within the last month (Dupuy, 1984; Fazio, 1977; Taylor et al., 2003). The GWB was originally developed for the U.S. Health and Nutrition Examination Survey and has been used in multiple countries. It is briefly administered, well-structured, and useful in multiple research settings, including community surveys with individuals with mental illness (Dupuy, 1984; Fazio, 1977; McDowell, 2010). The GWB consists of six subscales that measure positive wellbeing, self-control, vitality, anxiety, depression, and general health; it assesses both positive and negative feelings, “picking up themes of the eudaimonistic perspective” (McDowell, 2010, p. 74). The total score of the six subscales are then computed. The scores are summed with 73-110, indicating positive affect, 61-72 moderate distress, and 0-60, indicating severe distress.

Table 3.1

Operationalization of Variables in the Study

Variable	Definition	Measurement
Age	Self-reported age	Continuous
Gender	Self-reported gender	Categorical (yes or no)
Race	Self-reported race	Continuous
Education	Self-reported educational attainment	Continuous
Volunteering	Self-reported volunteering status	Categorical (yes or no)
Employment	Self-reported employment status	Categorical (yes or no)
Have you ever spent a night in jail or prison?	Self-reported whether participants have spent a night in jail or prison	Categorical (yes or no)
How long were you in jail/ prison?	Self-reported number of days participants spent in jail or prison	Continuous
Housing tenure	Number of years participants have been in supportive housing program	Continuous
Years of homeless	Number of years participants were homeless	Continuous
Network size	Number of people in participants' network	Continuous (total number of people in network)
Closeness	How participants are emotionally close to network members	3 indicated circle one, 2 circle two, and 1 circle three. Total score computed
Frequency of contact	Frequency of contact with network members by phone or in person	5-point scale with 1 = Very rarely, to Very frequently = 5. Total composite mean computed for up to first ten network members.
Proportion of family	Network work members participants consider relatives	Total number of families in network over the total network size
Proportion of friends in network	Network members participants consider friends	Total number of friends in network over the total network size
Proportional of professionals in network	Network members participants consider professionals	Total number of professional in network over total network size
Proportion of intimate in network	Network members participants consider intimate or romantic partner	Total number of friends in network over the total network size
Perceived social support	Six items defined perceived social support, two questions each of tangible support, emotional support, and informational support.	6 items measured on a 4-point scale (1 = definitely false, 2 = probably false, 3 = probably true, 4 = definitely true). Total mean computed for all 6 items for up to first ten members of network
Quality of relationship	Participants' satisfaction with the quality of their relationships	A single item measured on a 4-point scale. Total mean computed for up to the first 10 members of network
Structure of network	Social network structure includes network size, closeness, frequency of contact, proportion of family, friends, professionals, and intimate partner in network (Antonucci & Akiyama, 1987)	Computed by summing network size, closeness, frequency of contact, proportion of family, friends, professionals, and intimate partner in network
Psychological Wellbeing	Subjective feelings of psychological wellbeing	Total GWB Scale

Qualitative Data. Qualitative data collection included using in-depth interviews with open-ended questions to elicit participants' social networks. In-depth interviews were conducted with open-ended questions to elicit participants' social networks while they were homeless and after they moved into permanent supportive housing. Interview questions included (see Appendix D): Can you describe your social relationships when you were homeless? The researcher asked participants to recall their social networks during the period of homelessness. In addition, the interview illuminated participants' current perception of their social networks. Qualitative interviews lasted about 15 minutes.

Reliability and validity of quantitative measures. The GWB schedule was chosen because of its strong psychometric properties. The GWB has shown strong test-retest reliability. After administering the GWB to 41 students in about a 3-month period, Fazio (1977) reported the test-retest correlation was .851 for the total scale, and mean values of 74.6 and 73.0 for the first and second tests, respectively. Fazio (1977) also found high internal consistency reliabilities of the total scales among males (.912) and females (.945), indicating a strong measure of psychological wellbeing. Similarly, Edwards, Yarvis, Mueller, Zingale, and Wagman (1978) found high internal consistency reliability with the GWB total score, reporting a coefficient alpha above .90. Taylor et al. (2003) reported a high internal consistency reliability on the total score, reporting a Cronbach's alpha of 0.92; but the subscales reported Cronbach's alphas of .70 and .92, except the general health subscale, which reported reliability of .63 among African-American women.

The total GWB scale has shown strong validity. Among African-American women, Taylor et al. (2003) found the GWB to be a valid measure of psychological wellbeing. The GWB has shown to be inversely correlated with substance use and depression, indicating that positive

wellbeing was inversely correlated with high substance use and depression (Taylor et al., 2003). Fazio (1977) reported the GWB correlated with 6 depression scales, reporting an average correlation of 0.69; similarly, they reported an average correlation of 0.64 with three independent anxiety scales. The total score on the GWB correlated with Zung's Self-Rating Depression Scale (0.66), and interviewer's rating of depression (0.47).

However, past studies have reported inconsistencies in the subscales and have suggested the use of the GWB scale as a homogenous measure of psychological wellbeing (Fazio, 1977). Previous research findings did not support the six-factor subscales. A factor analysis by Taylor et al. (2003) suggested a three-factor subscale, psychological distress, positive wellbeing, and general health. Poston et al. (1998) also previously reported four-factor f-structure. Taylor et al. (2003) suggested using the scale as a unidimensional measure of wellbeing.

The nature of social networks as both dynamic and stable, poses challenges to the validity and reliability of social network measures. Marsden (2011) noted that available data suggested no consensus on the quality of network data. However, some researchers have validated the SNQ. The SNQ has been used in a number of studies across diverse cultures, "age, life situation, and crisis" (Antonucci, 1986, p. 11), and adapted to different populations including nurses (MacPhee & Scott, 2002), children and adolescents (Levitt et al., 1993) and across different cultures (Fuller-Iglesias & Antonucci, 2016; Levitt et al., 1993). Levitt et al. (1993) found strong reliability of the SNQ among diverse groups of children for the total number of people in their social network. The test-retest reliability 1 to 2 weeks after initial interviews indicated good mean reliabilities of .67 at age 7, .72 at age 10, and .75 at age 14.

Quality of qualitative data. Several approaches to assessing the quality of qualitative research have been suggested in the literature (Flick, 2014). However, the researcher

incorporated elements of Lincoln and Guba's (1985) suggested criteria for evaluating the quality of qualitative research: trustworthiness, credibility, dependability, transferability, and confirmability. Credibility in qualitative inquiry connotes congruence between the inquiry data and the results being reported, or that the results presented in the study truly represents the data (Guba & Lincoln, 1982). To adhere to these criteria, the researcher confirmed initial analysis with selected members of the sample population to ensure that the interpretations of the data reflected the views of participants. Another criterion for evaluating qualitative research is transferability. Similar to the concept of generalizability in quantitative studies, transferability means that the methods of inquiry should inform studies in other contexts (Guba & Lincoln, 1982). Guba and Lincoln (1982) argued that under certain circumstances, transferability is possible when "enough 'thick description' is available about both 'sending' and 'receiving' contexts to make a reasoned judgment about the degree of transferability..." (p. 247). Thick description involves providing adequate descriptions of the context of the study to inform other similar contexts (Guba & Lincoln, 1982). This study provided thick description of the context of the study to inform studies with similar population in other contexts.

Quantitative data analysis. The quantitative analyses began by assessing the internal consistency reliabilities of the items comprising perceived social support, quality of social relationships, and psychological wellbeing. The internal consistency reliabilities of these measures were assessed with Cronbach's alpha, a measure of the average correlation coefficient of all items in a test (Ho, 2014). Intercorrelations were assessed among predictor variables and determined which predictor variables were highly correlated. Highly correlated variables may share the same information and not independently contribute significantly to the regression

model (Ho, 2014). The researcher determined which predictor variables to drop from the regression model after checking for highly correlated variables.

Primary research questions explored in the quantitative study were as follows:

1. Do psychological wellbeing, perceived social support, relationship quality, and structural network variables differ by respondents' demographic and situational characteristics?
 - a. Do participants vary on psychological wellbeing by their demographic and situational characteristics?
 - b. Do participants vary on perceived social support by demographic and situational characteristics?
 - c. Do participants vary on relationship quality by demographic and situational characteristics?
 - d. Do participants vary on frequency of contact by demographic and situational characteristics?
 - e. Do participants vary on size of network by demographic and situational characteristics?
 - f. Do participants vary on closeness by demographic and situational characteristics?
 - g. Do participants vary on proportion of family in social network by demographic and situational characteristics?
 - h. Do participants vary on proportion of friends in their network by demographic and situational characteristics?
 - i. Do participants vary on proportion of professionals by demographic and situational characteristics?

- j. Do participants vary on proportion of intimate partners by demographic and situational characteristics?

Independent sample t-tests, or Mann Whitney U tests, were used to determine the demographic and situational differences in social network structural variables, perceived social support, relationship quality, and psychological wellbeing associated with all of the sub-questions in research question 1.

2. What is the best possible combination of demographic, situational, social network variables predict psychological wellbeing among adults in supported housing?

Question 2 was analyzed using multiple regression. Multiple regression is used to predict an outcome variable from multiple predictor variables (Gliner & Morgan, 2000). Each of the personal and situational characteristics, including measures of perceived social support and relationship quality were assessed to determine how they each contributed to predicting psychological wellbeing.

3. Controlling for demographic and situational variables, how does perceived social support, and quality of relationship each predict psychological wellbeing.

Hierarchical multiple regression was used to answer Question 3. Hierarchical multiple regression involves entering variables in steps and examining the change in R^2 in each step; each independent variable is assessed in terms of what it adds to the equation at its own point of entry (Gliner, Morgan, & Leech, 2009; Tabachnick & Fidell, 2013). Situational and personal characteristics were entered in block one, perceived social support was entered in block two, and finally relationship quality was entered in block three.

4. Does perceived social support play a mediating role between social network structure and psychological wellbeing?

Question 4 was first assessed by investigating whether perceived social support mediates the relationship between social network structure and psychological wellbeing. Prior to analyzing the data pertaining to Q4, the social network items were standardized. The mean index of social network structural variables were used to create a social network structural index prior to entering it in the model. The question was tested using two steps. First, the mediation role that social support may play between social networks and psychological wellbeing were examined. According to Baron and Kenny (1986), “A given variable may be said to function as a mediator to the extent that it accounts for the relation between the predictor and the criterion” (p. 111). In other words, mediation occurs when the effect of a predictor on an outcome variable changes when there is another variable (i.e., a mediating variable). Previously, it was suggested in the literature that to establish mediation the independent (X) variable must affect the outcome variable (Y). However, Shrout and Bolger (2002) and also Hayes (2013) argued that establishing the association between X and Y is not required prior to examining a mediation. Figure 3.1 below shows the conceptual framework of the mediation model. It shows perceived social support mediates the relationship between social network structure and psychological wellbeing.

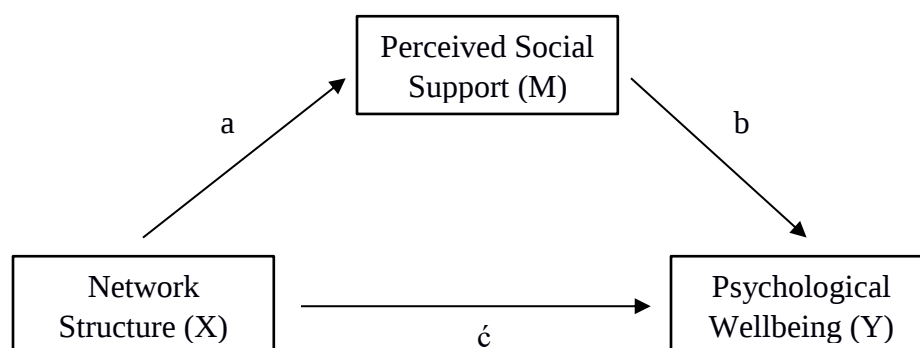


Figure 3.1. Conceptual model of hypothesized path model. X = Network Structure; M= perceived social support; Y= Psychological wellbeing. Mediation of perceived social support between network structure and psychological wellbeing.

5. Does social support mediate the relationship between social network structure and psychological wellbeing at different levels of quality of relationship?

Question 5. Second, quality of social relationships was entered as a moderator in the model to assess whether the mediating role of social support is based on the level of quality of relationship. Question 5 was answered using moderated mediation or conditional process modeling. Moderation occurs when the relationship between two variables varies at different levels of a third variable (Leech, Barrett, & Morgan, 2015). Moderated mediation integrates mediation and moderation analysis, what Hayes (2013) referred to as conditional process modeling. Conditional process modeling “is used when one’s research goal is to understand and describe the conditional nature of the mechanism or mechanisms by which a variable transmits its effect on another and testing hypotheses about such contingent effects” (Hayes, 2013, p. 327). Preacher, Rucker, and Hayes (2007) explained that “moderated mediation occurs when the strength of an indirect effect depends on the level of some variable, or in other words, when mediation relations are contingent on the level of a moderator” (p. 193).

The moderated mediation analysis employed bootstrapping techniques to assess the direct and indirect effects. Bollen and Stine (1990) suggested a bootstrap technique to estimate the sampling variability of direct and indirect effects of mediation analysis. Bootstrapping provides powerful estimates of key relationships for small sample and non-parametric data (Jose, 2013). Figure 3.2 below shows the visual conceptual path model of question 3b. As shown in Figure 3.2, the path from X to Y through M, which is the indirect effect, differs on the level of the moderating variable W (Edwards & Lambert, 2007). Thus, the effect of social networks (X) on psychological wellbeing (Y) may be mediated by perceived social support (M) based on the level of quality of relationship (W).

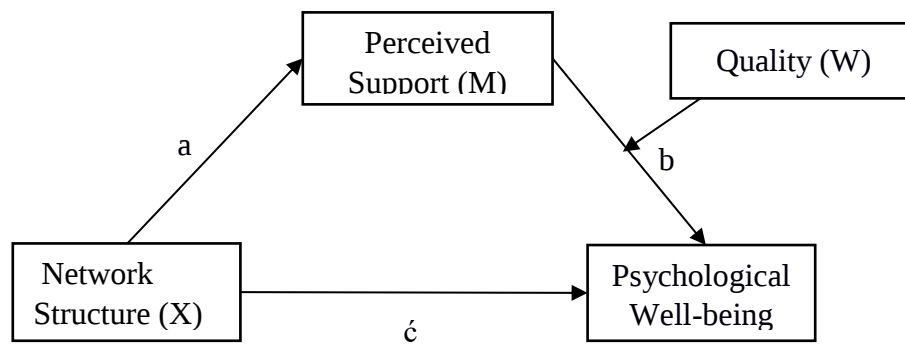


Figure 3.2. Conceptual model of hypothesized path model. X = Network Structure; M= perceived social support; W= Quality of satisfaction with social relationships; Y= Psychological wellbeing.

Qualitative Data Analysis. Data collection was conducted simultaneously with data analysis. Stake (1995) argued that analyzing qualitative data may begin at any time. Stake (1995) further stated that analyzing qualitative data “is a matter of giving meaning to first impressions as well as to final compilations. Analysis essentially means taking something apart” (Stake, 1997, p. 71). Padgett (2008), from a social work researcher perspective, argued that “analyses involve repeatedly listening to a tape of the interview and scrutinizing the transcript to identify 'stories' from which structural components are then delineated.” (p. 34). More specifically, the qualitative strand was analyzed using thematic analysis. As defined by Gibson and Brown (2009), thematic analysis “refers to the process of analyzing data according to the commonalities, relationships and differences across data set” (p. 127). Interviews were transcribed. The thematic analysis was guided by Braun and Clark’s (2006) approach to thematic analysis. They suggested a systematic approach to doing thematic analysis. Their suggested guidelines involve:

1. Familiarizing yourself with your data
2. Generating initial codes

3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report (p. 35).

Braun and Clark (2006) suggested a constant recursive process between the data and the coded extracts from the data, moving back and forth. The researcher inductively analyzed the data by searching for themes from the data.

6. What was the nature of the social networks of formerly homeless adults before entering supportive housing?

Chapter Summary and Conclusion

In summary, this study provides a comprehensive overview of the social networks of formerly homeless individuals with substance abuse and mental health disorders. The quantitative strand of this research study provided prospective understanding of the role that social relationships contribute to psychological wellbeing of those who have had a history of chronic homelessness, substance abuse and mental health disorders. The qualitative strand described the social networks of formerly homeless individuals while they were homeless prior to entering supportive housing program. The combination of both quantitative and qualitative questions and the analyses undertaken in this study sought to provide a broader and deeper understanding of the social relationships of formerly homeless individuals and may lead to better social reintegration of formerly homeless persons.

CHAPTER 4: RESULTS

Introduction

This chapter provides the results of the analysis in this study. First, the frequencies, percentages, means, standard deviations, and skewness of measured variables in the sample are presented. Second, exploratory factor analysis and reliability of the GWB Scale are reported. The reliability of the perceived social support measure is also presented. Third, the t-test and Mann-Whitney *U* tests are used to investigate differences on participants' characteristics on psychological wellbeing and social network variables. Fourth, standard multiple regression and hierarchical regression are used to determine predictors of psychological wellbeing. Lastly, results of the mediation and moderated-mediation are provided to explore the mechanisms through which perceived social support mediates the association between social network structure and psychological wellbeing at different levels of quality of satisfaction with social network. Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS Version 25).

Quantitative Results

Table 4.1 shows the frequencies, percentages, means, standard deviations, and skewness for demographic and situational variables measured in a sample of formerly homeless adults in a permanent supported housing program at six different locations of apartment complexes in Denver. The average age of respondents was 53.58, standard deviation of 9.36, skewness of -.84, and a range from 28 to 71. The majority of participants identified as males (55.7%) compared to females (44.3%). The male to female ratio in this sample is consistent with the literature on the homeless population, more males experience homelessness than females. The sample constituted

a diverse sample, although a majority of respondents identified as Whites. Whites constituted 44.3% of the sample, Blacks were 32.9%, American Indian or Alaska natives 6.3%, Latino/Hispanic 7.6%, Native Hawaiian/Pacific Islander 1.3%, and those who did not identify with any race or ethnicity 7.6%. On the level of education of respondents in the sample, 26% had less than high school education, another 26% had high school education, 44.2% had some college education, and 3.9% reported having a bachelor's degree or more. A low percentage of respondents (29.9 %) were volunteers and very few were employed (6.3%). About three quarters of the respondents had spent a night in jail or prison (70.9 %) with an average of 461 days in jail or prison. The average years of homelessness before moving into supported housing was 5.01 years; and respondents had been in housing for an average of 4.54 years.

Table. 4.1

Demographics and Situational Variables of 80 Residents in Supportive Housing Program

Variable	N	%	M	SD	Skewness
Gender					
Female	35	44.3			
Males	44	55.7			
Age			53.58	9.36	-.84
Race					
American Indian or Alaska Native	5	6.3			
Blacks/ African American	26	32.9			
Native Hawaiian/Pacific Islander	1	1.3			
White	35	44.3			
Hispanic/Latino	6	7.6			
Other	6	7.6			
Education					
Less than high school	20	26.0			
High school	20	26.0			
Some college	34	44.2			
Bachelor's degree or more	3	3.9			
Volunteering					

Yes	23	29.9		
No	54	70.1		
Employment				
Yes	5	6.3		
No	74	93.7		
Ever spent a night in jail/prison				
Yes	56	70.9		
No	23	29.1		
Length of Incarceration (days)			461	1012.74 3.12
Years of homeless (years)			5.01	4.99 2.00
Housing Tenure (Years)			4.54	3.50 1.36

On structural network variables (see Table 4.2), frequency of contact had a mean score of 2.55, standard deviation of 1.17, and skewness of .20. The mean network size in the sample was 8.07 with a standard deviation of 6.63 and skewness of 1.38. The mean network size is higher than another previously reported mean network sizes (5.02) of formerly homeless women (Toohey et al., 2004). The mean closeness was 17.94, standard deviation 14.26, and skewness was 1.3. Respondents reported having more families in their social network than friends, professionals or intimate partners. The mean proportion of families in network ($M = .58$, $SD = .34$) was more than the proportion of friends ($M = .26$, $SD = .29$) professionals ($M = .09$, $SD = .16$) and intimate partner ($M = .03$, $SD = .07$). It is important to note that three respondents did not have anyone in their network. The average perceived social support was 3.01 with standard deviation of .83 and skewness of -1.92. Relationship quality had an average score of 2.15, standard deviation of 1.09 and skewness of .27.

On psychological wellbeing, the mean was 58.83 and standard deviation of 17.99 and skewness of -.03. The mean score is lower than previous studies with Mexican-American women (69.75; Poston et al., 1998), and with college students (73.0; Fazio, 1977).

Table 4.2

Social Network Variables and Psychological Wellbeing of 80 Residents in Supportive Housing Program

Variable	<i>M</i>	<i>SD</i>	<i>Skewness</i>
Frequency of Contact	2.55	1.17	0.20
Size of Network	8.09	6.63	1.38
Closeness	17.94	14.26	1.30
Proportion of Families	0.58	0.34	-0.28
Proportion of Friends	0.26	0.29	0.99
Proportion of Professionals	0.09	0.16	1.90
Proportion of Intimate Partner	0.03	0.07	2.17
Perceived social support	3.01	0.83	-1.92
Relationship Quality	2.15	1.09	0.27
Psychological Wellbeing	58.83	17.99	-0.03

Preliminary Analysis

Principal axis factor analysis with varimax rotation was conducted to explore the underlying structure of the 18-item psychological wellbeing scale. Due to inconsistencies in the number of reported factors of the GWB scale (Poston et al., 1998; Taylor et al., 2003), no limitations on the number factors were requested. The Kaiser-Meyer-Olkin measure reported sampling adequacy for the analysis, KMO = .80 (meritorious according to Hutcheson & Sofroniou, 2009), the Bartlett's Test of Sphericity indicated the correlation matrix was significantly different from an identity matrix. After rotation, the first factor accounted 16.8% of the variance, the second factor 16.8%, the third factor 9%, the fourth factor 7.8%, and the fifth factor 7.4%. Factor structure suggests that the first and second factors accounted for 33.55% of total scale variance. However, items on factors seem cross loaded (e.g., items 1 and 13, see Table 4.3 for details). Thus, the exploratory factor analysis supports the use of the GWB scale as a unidimensional measure of psychological wellbeing. This is consistent with previous studies

suggesting the use of the total GWB scale items as a unidimensional measure of psychological wellbeing (Fazio, 1977; Poston et al., 1998).

Table 4.3

Factor Loadings from Principal Axis Factor Analysis with Varimax Rotation for Psychological Wellbeing (N=80)

Item	Factor Loadings					Communality
	1	2	3	4	5	
1. How have you been feeling in general?		.67	.34		.49	.70
2. Have you been bothered by nervousness or your "nerves"?	.54	.35				.56
3. Have you been in firm control of your behavior, thoughts, emotions, OR feelings?			.94			.61
4. Have you felt so sad, discouraged, hopeless, or had so many problems that you wondered if anything was worthwhile?	.70	.30				.63
5. Have you been under or felt you were under any strain, stress, or pressure?	.78					.64
6. How happy, satisfied, or pleased have you been with your personal life?		.56				.58
7. Have you had any reason to wonder if you were losing your mind, or losing control over the way you act, talk, think, feel, or of your memory?			.55			.58
8. Have you been anxious, worried, or upset?	.53	.47				.57
9. Have you been waking up fresh and rested?		.31		.81		.58
10. Have you been bothered by any illness, bodily disorder, pains, or fears about your health?	.36					.29
11. Has your daily life been full of things that were interesting to you?		.59		.30		.51
12. Have you felt down-hearted and blue?	.50	.44				.63
13. Have you been feeling emotionally stable and sure of yourself?			-.35	-.62	-.31	.60
14. Have you felt tired, worn out, used-up, or exhausted?	.71					.68
15. How concerned or worried about your HEALTH have you been?					.64	.45
16. How much ENERGY, PEP, VITALITY have you felt?	.32			.33	.58	.58
17. How much ENERGY, PEP, VITALITY have you felt?		.61				.51
18. How DEPRESSED or CHEERFUL have you been?		.78				.59

Note. Loadings < .30 are omitted

The 18-item GWB scale was assessed to determine the reliability. The total GWB scale reported good internal consistency, reporting a Cronbach's alpha of .84. Past studies have reported very high internal reliability, Cronbach's alphas were between .91 and .95 (Fazio, 1977; Poston et al., 1998; Taylor et al., 2003). The mean Cronbach's alpha for perceived social support across the number of participants was .87. The mean Cronbach's alpha for relationship quality was .938. However, social network structure reported low internal consistency reliability of .50.

Differences in participants' demographics and situational characteristics on social network variables, age, education, years homeless, and housing tenure (years) variables were investigated and collapsed into categorical variables to make the analysis more meaningful. The age variable was collapsed into a categorical variable, 55 years old or less ($n = 44$) and over 55 years old ($n = 35$). Education was recategorized into high school or less ($n = 40$) and more than high school ($n = 37$). Years of homelessness was collapsed into a categorical variable, 3 years or less ($n = 39$) and more than 3 years ($n = 41$). Housing tenure (years) was also collapsed into 3 years or less ($n = 35$) and more than 3 years ($n = 41$). Two variables "have you ever spent a night in jail or prison?" and "How many days did you spend in jail/prison?" was combined into a single categorical variable: "Have you spent 30 days or more in jail/prison?" (yes = 43%, no = 57%). Structural social network variables including network size, closeness, frequency of contact, proportion of families, friends, professionals, and intimate partners in network were standardized using z scores and computed to create a composite variable social network structure. The remainder of this chapter will report the analysis for each research question in this study.

Research Question One

1. Do psychological wellbeing, perceived social support, relationship quality, and network structure variables differ by respondents' demographic and situational characteristics?
 - a. Do participants vary on psychological wellbeing by their demographic and situational characteristics?

An independent samples t-test was used to investigate whether participants differed by demographic and situational variables on the outcome measure of psychological wellbeing. Demographic and situational variables did not differ on psychological wellbeing (see Table 4.4). However, participants differed on years in homeless. No significant difference was found between Whites and non-Whites on psychological wellbeing ($p = .413$), although Whites ($M = 61$) reported slightly higher means than non-Whites ($M = 57$). Similarly, participants did not differ by gender on psychological wellbeing, $p = .905$, with females ($M = 58.74$) reporting a slightly lower mean score than males ($M = 59.24$). On education, no significant difference was found between those with high school or less education ($M = 57$) and those with more than high school education ($M = 60$), $p = .413$, with those with more than high school education reporting slightly higher mean scores. No statistically significant difference was found between participants who identified as volunteers ($M = 59.21$) and those who were non-volunteers ($M = 58.80$), $p = .924$. Participants who had spent 30 days or more in jail ($M = 59.03$) did not significantly differ with those who had spent less than 30 days in prison or jail ($M = 58.47$), $p = .894$. On age, those who were 55 years or younger ($M = 59.60$), and those who were over 55 ($M = 57$) years did not statistically differ on psychological wellbeing, $p = .631$. Respondents with 3 years or less ($M = 55.97$) and those with more than 3 years in housing ($M = 64.48$) did not differ on their psychological wellbeing, $p = .204$.

Table 4.4

Independent Sample t-Test on Psychological Wellbeing by Demographic and Situational Variables

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Psychological Wellbeing						
Gender				-0.12	74	<i>p</i> = .905
Females	35	58.74	19.08			
Males	41	59.24	17.33			
Race				-0.83	54	<i>p</i> = .413
Non-White	42	57.40	14.14			
White	34	61.00	21.99			
Education				-0.82	72	<i>p</i> = .413
High School or Less	39	57.00	17.89			
More than High school	35	60.49	18.47			
Incarceration History				0.13	74	<i>p</i> = .894
30 days or more in jail/prison (Yes)	33	59.03	17.96			
30 days or more in jail/prison (No)	43	58.47	18.37			
Volunteering				0.09	72	<i>p</i> = .924
Yes	23	59.21	16.00			
No	51	58.8	19.32			
Years Homeless				2.05	75	<i>p</i> = .044
Three Years or Less Homeless	39	62.9	16.78			
More than Three Years Homeless	38	54.66	18.44			
Age				0.48	74	<i>p</i> = .631
55 Years of Less	43	59.6	17.85			
More than 55 Years	33	57.58	18.59			
Housing Tenure				-1.28	71	<i>p</i> = .204
Three Years or Less in Housing	33	55.97	20.76			
More than Three Years Housing	40	61.48	15.96			

However, a significance difference was found between participants who had been homeless for three years or less and those who have been more than three years homeless on psychological wellbeing, ($t(75) = 2.051, p < .05$, Cohen's $d = .47$), a small to medium effect size (Cohen, 1988). Participants who were homeless for 3 years or less ($M = 62.90, SD = 16.78$) had

significantly higher levels of psychological wellbeing than those who had been homeless for more than 3 years ($M = 54.66$, $SD = 18.44$).

- b. Do participants vary on perceived social support by demographic and situational characteristics?

No significant differences were found on perceived support on demographic and situational variables (see Table 4.5). Non-Whites and Whites did not differ on perceived social support, though the difference approached significance ($p = .054$), although non-Whites had higher mean perceived social support (43.97) than Whites (34.01). No significant gender difference was found on perceived social support, $p = .964$. Although there was no significant difference in age of perceived social support $p = .232$, respondents 55 years old or younger (42.19) had greater mean rank than those over 55 years old (36.01). Respondents with high school or less of education (mean rank = 41.49) and those with more than high school education (mean rank = 35.18) were not statistically different, $p = .214$. Respondents did not differ by volunteer status, $p = .082$. Similarly, those who were homeless for less than three years were not statistically different from the group with more than three years homeless, $p = .677$. There was no significant difference on housing tenure between those who had been in housing for three years or less (mean rank = 35.82) and those over more than three years in housing (mean rank = 39.80, $p = .431$). Likewise, those who had spent 30 days or more in jail/prison did not differ from those who had less than 30 days or more in jail, $p = .251$.

Table 4. 5

Mann-Whitney U-tests Examining Perceived Social Support by Demographic and Situational Variables

Variable	N	Mean Rank	U	Z	p
Perceived Support					
Gender			748.00	-0.05	$p = .964$
Females	35	39.37			
Males	43	39.6			
Race			560.50	-1.93	$p = .054$
Non-White	43	43.97			
White	35	34.01			
Education			600.50	-1.24	$p = .214$
High School or Less	40	41.49			
More than High school	36	35.18			
Incarceration History			629.00	-1.15	$p = .251.$
30 days or more in jail/prison (Yes)	33	42.94			
30 days or more in jail/prison (No)	45	36.98			
Volunteering			442.00	-1.74	$p = .082$
Yes	22	31.59			
No	54	41.31			
Years Homeless			737.50	-0.42	$p = .677$
Three Years or Less Homeless	39	38.91			
More than Three Years Homeless	40	41.06			
Age			629.50	-1.19	$p = .232$
55 Years of Less	44	42.19			
More than 55 Years	34	36.01			
Housing Tenure			623.00	-0.79	$p = .431$
Three Years or Less in Housing	34	35.82			
More than Three Years in Housing	41	39.8			

- a. Do participants vary on relationship quality by demographic and situational characteristics?

Table 4.6 below shows results of *t*-tests on demographic and situational variables.

Interestingly, respondents who had been less than 3 years homeless ($M = 1.87$) reported lower quality relationships than those who had been homeless for more than three years ($M = 2.4$), t

(77) = -2.32, $p < .05$, Cohen's $d = .53$), a large effect size according to Cohen (1988). No significant difference on race was found between non-White ($M = 2.25$) and Whites ($M = 1.98$) on relationship quality, $p = .258$. There were no differences by age ($p = .755$), education ($p = .059$), volunteer status ($p = .079$), whether respondents had spent 30 days or more in jail ($p = .408$), or years in housing ($p = .919$).

Table 4.6

Independent Sample t-Test on Quality of Relationship by Demographic and Situational Variables

Variable	N	M	SD	t	df	p
Quality of Relationship						
Gender				-0.3	76	$p = .764$
Females	35	2.09	1.05			
Males	43	2.16	1.1			
Race				1.14	72	$p = .258$
Non-White	43	2.25	1.07			
White	35	1.98	1.08			
Education				1.92	72	$p = .059$
High School or Less	40	2.34	1.14			
More than High school	36	1.9	0.87			
Incarceration History				0.832	76	$p = .408$
30 days or more in jail/prison (Yes)	33	2.3	1.13			
30 days or more in jail/prison (No)	45	2.09	1.02			
Volunteering				-1.62	74	$p = .109$
Yes	22	1.86	0.87			
No	54	2.29	1.12			
Years Homeless				-2.33	77	$p = .023$
Three Years or Less Homeless	39	1.87	1.05			
More than Three Years Homeless	40	2.43	1.07			
Age				-0.3	58	$p = .755$
55 Years or Less	44	2.12	0.94			
More than 55 Years	34	2.2	1.28			
Housing Tenure				-0.1	73	$p = .919$
Three Years or Less in Housing	34	2.14	1.06			
More than Three Years in Housing	41	2.17	1.07			

- b. Do participants vary on frequency of contact by demographic and situational characteristics?

Respondents who reported less than 3 years of homelessness ($M = 2.250$, $SD = 1.13$) had lesser frequency of contact with their social network members than those who had been homeless for more than 3 years ($M = 2.85$, $SD = 1.15$) $t(77) = -2.34$, $p < .05$, Cohen's $d = -.53$), a large effect size (see details in Table 4.7). There was no significant difference between females ($M = 2.50$, $SD = .31$) and males ($M = 2.53$, $SD = .34$) on frequency of contact, $p = .921$. Likewise, there was no significant difference between non-Whites ($M = 2.66$, $SD = 1.05$) and Whites ($M = 2.35$, $SD = 1.23$) on frequency of contact, $p = .244$. In the same vein, those with high school or less education ($M = 2.77$, $SD = 1.18$) and those with more than high school education ($M = 2.28$, $SD = .99$) did not differ on frequency of contact, $p = .054$. Frequency of contact did not differ by volunteering status. Those who reported volunteering ($M = 2.24$, $SD = 1.09$) did not differ significantly from those who were non-volunteers ($M = 2.67$, $SD = 1.11$), $p = .135$. Among participants who had spent 30 days or more in jail/prison ($M = 2.75$, $SD = 1.19$), they did not significantly differ from those who had less than 30 days in prison/jail ($M = 2.46$, $SD = 1.09$) on frequency of contact, $p = .263$. Participants who had three years or less in supported housing ($M = 2.55$, $SD = 1.19$) were not significantly different from those who had more than three years in supported housing ($M = 2.62$, $SD = 1.14$) on frequency of contact with their social networks, $p = .822$.

Table 4.7

Independent Sample t-Test on Frequency of Contact by Demographic and Situational Variables

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>
Frequency of Contact						
Gender				-0.10	76	<i>p</i> =.821
Females	35	2.51	1.11			
Males	43	2.53	1.18			
Race				1.18	76	<i>p</i> =.244
Non-White	43	2.66	1.05			
White	35	2.35	1.24			
Education				1.96	74	<i>p</i> =.054
High School or Less	40	2.77	1.18			
More than High school	36	2.28	0.99			
Incarceration History				1.13	76	<i>p</i> =.263
30 days or more in jail/prison (Yes)	33	2.75	1.19			
30 days or more in jail/prison (No)	45	2.46	1.10			
Volunteering				-1.51	74	<i>p</i> =.135
Yes	22	2.24	1.09			
No	54	2.67	1.11			
Years Homeless				-2.34	77	<i>p</i> =.022
Three Years or Less Homeless	39	2.25	1.13			
More than Three Years Homeless	40	2.85	1.15			
Age				-0.21	76	<i>p</i> =.834
55 Years of Less	44	2.53	1.03			
More than 55 Years	34	2.59	1.35			
Housing Tenure				-0.23	73	<i>p</i> =.822
Three Years or Less in Housing	34	2.55	1.19			
More than Three Years in Housing	41	2.61	1.14			

- c. Do participants vary on size of network by demographic and situational characteristics?

Because the network size variable was skewed, Mann-Whitney U test was used to investigate differences in demographic and situational characteristics on the size of participants' network (see Table 4.8). Consistent with the literature, network size differed by gender, ($U = 477, p = .004, r = -.33$), a medium effect size according to Cohen (1988). The mean network size for females (48.37) was higher than those of males (33.34). There was significant difference between participants 55 years or younger and those over 55 years old on the number of people in their network, ($U = 512.500, p = .010, r = -.56$), which is a large effect size (Cohen, 1988). Non-Whites had higher mean rank (43.47) on network size than Whites (35.64), but the difference was not statistically significant, $p = .129$. However, there were no significant differences on all other variables. Years of homelessness did not differ between those who had less than three years of homeless and those over three years of homelessness ($p = .097$), neither did respondents differ by housing tenure ($p = .697$), volunteer status ($p = .964$), education ($p = .069$), or whether participants had spent 30 days or more in jail/prison ($p = .727$).

Table 4. 8

Mann-Whitney U-tests Examining Network Size by Demographic and Situational Variables

Variable	<i>N</i>	Mean Rank	<i>U</i>	<i>Z</i>	<i>p</i>
Network Size					
Gender			477.00	-2.91	$p = .004$
Females	35	48.37			
Males	44	33.34			
Race			617.50	-1.52	$p = .129$
Non-White	44	43.47			
White	35	35.64			
Education			563.00	-1.82	$p = .069$
High School or Less	40	34.58			
More than High school	37	43.78			

Incarceration History			730.00	-0.35	$p = .727$
30 days or more in jail/prison (Yes)	34	38.97			
30 days or more in jail/prison (No)	45	40.78			
Volunteering			617.00	-0.05	$p = .964$
Yes	23	39.17			
No	54	38.93			
Years Homeless			628.50	-1.66	$p = .097$
Three Years or Less Homeless	39	44.88			
More than Three Years Homeless	41	36.33			
Age			512.50	-2.57	$p = .010$
55 Years or Less	44	45.85			
More than 55 Years	35	32.64			
Housing Tenure			680.50	-0.39	$p = .697$
Three Years or Less in Housing	35	37.44			
More than Three Years in Housing	41	39.4			

d. Do participants vary on closeness by demographic and situational characteristics?

There were gender differences on closeness, ($U = 456.50$, $p = .007$, $r = -.31$), a medium effect size, according to Cohen (1988), with females (46.07) reporting closer relationships than males (32.37). There was significant difference between participants 55 years or younger and those over 55 years on closeness as well, ($U = 466$, $p = .009$, $r = -.30$), which is a medium effect size according to Cohen (1988). Participants who were 55 years or younger (mean rank = 44.40) reported closer relationships than those over 55 years old (mean rank = 31.21). However, there were no significant differences on other demographic and situational variables by years of homelessness ($p = .120$), housing tenure ($p = .730$), whether participants had been in jail/prison for 30 days or more ($p = .741$), and race ($p = .274$); results are shown in Table 4.9.

Table 4.9

Mann-Whitney U-tests Examining Closeness by Demographic and Situational Variables

Variable	<i>N</i>	<i>Mean Rank</i>	<i>U</i>	<i>Z</i>	<i>p</i>
Closeness					
Gender			456.50	-2.71	<i>p</i> =.007
Females	34	46.07			
Males	42	32.37			
Race			610.00	-1.09	<i>p</i> =.274
Non-White	42	40.98			
White	34	35.44			
Education			505.50	-1.93	<i>p</i> =.054
High School or Less	39	32.96			
More than High school	35	42.56			
Incarceration History			666.50	-0.33	<i>p</i> =.741
30 days or more in jail/prison (Yes)	31	37.50			
30 days or more in jail/prison (No)	45	39.19			
Volunteering			566.00	-0.07	<i>p</i> =.943
Yes	22	37.23			
No	52	37.62			
Years Homeless					
Three Years or Less Homeless	37	43.09	588.50	-1.56	<i>p</i> =.120
More than Three Years Homeless	40	35.21			
Age			466.00	-2.61	<i>p</i> =.009
55 Years or Less	42	44.4			
More than 55 Years	34	31.21			
Housing Tenure			632.00	-0.35	<i>p</i> =.730
Three Years or Less in Housing	34	36.09			
More than Three Years in Housing	39	37.79			

- e. Do participants vary on proportion of family in social networks by demographic and situational characteristics?

Independent sample t-test was used to determine whether participants' demographic and situational characteristics differed regarding the proportion of families in network (see Table 4.10). Non-White participants ($M = .65$, $SD = .30$) had a higher proportion of family members in their network than White participants ($M = .47$, $SD = .36$), with a difference of .18, which was

statistically significant $t(73) = 2.26$; $p = .02$; $d = .5$), a medium effect size (Cohen, 1988). All other demographic and situational characteristics were not significant. Those who identified as volunteers ($M = .42$, $SD = .33$) were significantly different from those who were non-volunteers ($M = .65$, $SD = .31$) on proportion of families in network, $t(71) = -2.66$, $p < .05$, Cohen's $d = .67$), a large effect size according to Cohen (1988). There was no significant difference between females ($M = .64$, $SE = .31$) and males ($M = .51$, $SD = .35$) on proportion of families in network, $p = .081$. Those with less than high school education ($M = .64$, $SD = .32$) and those with more than high school education ($M = .50$, $SD = .34$) did not differ on proportion of family in network, $p = .088$. Other demographic and situational variables did not differ on proportion of families in network. Participants who had spent 30 days or more in jail/prison ($M = .60$, $SD = .31$) and those who had less than 30 days in jail/prison ($M = .57$, $SD = .34$) were not significantly different, $p = .670$. Differences between age groups were not significant either, $p = .723$. Comparing those who had been homeless for 3 years or less with those with more than 3 years of being homeless, no significant difference was found, $p = .547$. Likewise, respondents did not differ on housing tenure, $p = .432$.

Table 4.10

Independent Sample t-Test on Proportion of Family by Demographic and Situational Variables

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>P</i>
Proportion of Family						
Gender				1.77	73	$p=.081$
Females	34	0.64	0.31			
Males	41	0.5	0.34			
Race				2.46	73	$p=.016$
Non-White	42	0.65	0.30			
White	33	0.46	0.36			
Education				1.73	71	$p=.088$
High School or Less	38	0.64	0.32			
More than High school	35	0.51	0.34			
Incarceration History				0.43	73	$p=.670$
30 days or more in jail/prison (Yes)	32	0.6	0.31			
30 days or more in jail/prison (No)	43	0.56	0.34			
Volunteering				-2.66	71	$p=.010$
Yes	21	0.42	0.33			
No	52	0.64	0.31			
Years Homeless				-0.61	74	$p=.547$
Three Years or Less Homeless	39	0.55	0.34			
More than Three Years Homeless	37	0.6	0.33			
Age				-0.42	74	$p=.675$
55 Years of Less	42	0.56	0.31			
More than 55 Years	34	0.59	0.36			
Housing Tenure				0.79	70	$p=.432$
Three Years or Less in Housing	34	0.61	0.3			
More than Three Years in Housing	38	0.54	0.36			

- f. Do participants vary on proportion of friends in their network by demographic and situational characteristics?

Proportion of friends in social networks did not differ by participants' characteristics (see Table 4.11). For example, there was no significant difference between those who identified as volunteers and non-volunteers, $p = .055$. Years of homelessness did not differ by proportion of friends in social networks, $p = .911$. On race, non-Whites and Whites did not significantly differ

by proportion of friends in social network, $p = .115$. Participants' education did not differ by proportion of friends in network, $p = .097$. Similar results were reported for gender, with no significant difference between females and males on proportion of friends in network, $p = .639$. Although participants 55 years old or younger (42.40) had a higher mean rank on the proportion of friends in networks than those over 55 years old (mean rank = 33.68), the difference was not statistically significant, $p = .078$. Similarly, respondents did not differ by housing tenure on proportion of friends in network $p = .244$, although those who had three years or less in housing (33.52) reported a lower mean rank than those who had more than three years in housing (39.16). Those who had spent 30 days or more in jail were not statistically significantly different from those with less than 30 days in jail/prison, $p = .758$.

Table 4.11

Mann-Whitney U-tests Examining Proportion of Friends by Demographic and Situational Variables

Variable	N	Mean Rank	U	Z	p
Proportion of Friends					
Gender			654.00	-0.469	$p=.639$
Females	34	36.74			
Males	41	39.05			
Race			549.00	-1.58	$p=.115$
Non-White	42	34.57			
White	33	42.36			
Education			518.50	-1.66	$p=.097$
High School or Less	38	33.14			
More than High school	35	41.19			
Incarceration History			660.00	-0.31	0.758
30 days or more in jail/prison (Yes)	32	37.13			
30 days or more in jail/prison (No)	43	38.65			
Volunteering			392.00	-1.92	$p=.055$
Yes	21	44.33			
No	52	34.04			
Years Homeless			711.00	-0.11	$p=.911$
Three Years or Less Homeless	39	38.77			

More than Three Years Homeless	37	38.22	550.00	-1.76	$p=.078$
Age					
55 Years of Less	42	42.4	545.00	-1.17	$p=.244$
More than 55 Years	34	33.68			
Housing Tenure					
Three Years or Less in Housing	34	33.53			
More than Three Years in Housing	38	39.16			

g. Do participants vary on proportion of professionals by demographic and situational characteristics?

Non-Whites had a lower mean rank (37.07) than Whites (39.18) on the proportion of professionals in their network, but it was not statistically significant, $p = .615$. Those 55 years old or younger were not statistically different from those who were over 55 years on proportion of professionals in network, $p = .919$. Among all other demographic and situational variables, there was no significant differences on proportion of professionals in social network. There was no significant difference between those who had been homeless for three years or less and those who had been homeless for more than three years, $p = .286$, education $p = .702$, gender $p = .155$, volunteer status $p = .534$, and housing tenure, $p = .357$.

Table 4.12

Mann-Whitney U-tests Examining Proportion of Professionals by Demographic and Situational Variables

Variable	N	Mean Rank	U	Z	p
Proportion of Professionals					
Gender			586.50	-1.42	$p=.155$
Females	34	34.75			
Males	41	40.70			
Race			654.00	-0.50	$p=.615$
Non-White	42	37.07			
White	33	39.18			
Education			636.50	-0.38	$p=.702$

High School or Less	38	36.25			
More than High school	35	37.81			
Incarceration History			650.00	-0.49	$P=.630$
30 days or more in jail/prison (Yes)	32	39.19			
30 days or more in jail/prison (No)	43	37.12			
Volunteering			504.00	-0.62	$p=.534$
Yes	21	39.00			
No	52	36.19			
Years Homeless			637.00	-1.07	$p=.286$
Three Years or Less Homeless	39	36.33			
More than Three Years Homeless	37	40.78			
Age			706.00	-0.10	$p=.919$
55 Years or Less	42	38.31			
More than 55 Years	34	38.74			
Housing Tenure			577.00	-0.92	$p=.357$
Three Years or Less in Housing	34	34.49			
More than Three Years in Housing	38	38.30			

h. Do participants vary on proportion of intimate partners by demographic and situational characteristics?

Due to the skewness of the proportion of intimate partner variable, Mann U was used to investigate whether participants differ by demographic and characteristics on proportion of intimate partners in their network. Participants did not differ on demographic and situational variables, however, a difference was found for age groups. There was no statistically difference between non-Whites (40.79) and Whites (37.07) on proportion of intimate partners in network, ($U = 576$, $z = -1.74$, $r = -.2$). Similarly, females (39.62) and males (36.66) did not differ statistically on proportion of intimate partners in their networks, ($U = 642$, $z = -.82$, $p = .41$, $r = -.09$). There was a significant difference between those 55 years or younger and those over 55 years old, ($U = 552$, $z = -2.38$, $p = .018$, $r = -.272$), a medium effect size (Cohen, 1988). Participants 55 years or younger (mean rank = 42.36) had a higher proportion of intimate partners than those who were over 55 years old (mean rank = 33.74). There was no statistically

significant difference between the groups based on time spent homeless on the proportion of intimate partners in social networks, $p = .321$ (see Table 4.13 for details).

Table 4.13

Mann-Whitney U-tests Examining Proportion of Intimate Partner by Demographic and Situational Variables

Variable	N	Mean Rank	U	Z	p
Proportion of Professionals					
Gender			642.00	-0.82	$p = .414$
Females	34	39.62			
Males	41	36.66			
Race			576.00	-1.74	$p = .081$
Non-White	42	40.79			
White	33	43.45			
Education			641.00	-0.38	$p = .707$
High School or Less	38	37.63			
More than High school	35	36.31			
Incarceration History			536.00	-2.27	$P = .023$
30 days or more in jail/prison (Yes)	32	33.25			
30 days or more in jail/prison (No)	43	41.53			
Volunteering			525.50	-0.35	$p = .723$
Yes	21	37.98			
No	52	36.61			
Years Homeless			653.00	-0.99	$p = .321$
Three Years or Less Homeless	39	40.24			
More than Three Years Homeless	37	36.66			
Age			552.00	-2.38	$p = .018$
55 Years of Less	42	42.36			
More than 55 Years	34	33.74			
Housing Tenure			603.00	-0.67	$p = .505$
Three Years or Less in Housing	34	37.76			
More than Three Years in Housing	38	35.37			

Research Question Two

2. What is the best possible combination of demographic, situational, social network variables predict psychological wellbeing among adults in supported housing?

Prior to conducting regression analysis, the interrelations among variables in the study were examined to test for possible multicollinearity between variables and identify variables that are related to the outcome variable. Bivariate correlation tests (Kendall's Tau-*b*-tests) were used to explore the relationship between variables. Table 4.11 below shows the bivariate correlations. The outcome measure, psychological wellbeing, was only related with frequency of contact, relationship quality, perceived social support, and years of homelessness, ($\tau = -.19, p = .021, \tau = -.19, p = .017, \tau = .19, p = .017, \tau = -.20, p = .035$, respectively).

Bivariate correlations. A relationship between race and education was found, ($\tau = .30, p = .010$). Gender and volunteering were also related, ($\tau = -.30, p = .010$). Consistent with the literature, network size was significantly related to age, ($\tau = -.25, p = .010$). Similarly, network size was significantly correlated with gender, ($\tau = -.28, p = .004$), which was consistent with the literature. Significant correlations among social network variables were found. For example, network size was highly related with closeness, ($\tau = .93, p = .001$). Proportion of families in network was significantly related with the proportion of friends in networks, ($\tau = -.63, p = .001$), proportion of professionals in network, ($\tau = -.31, p = .001$), frequency of contact, ($\tau = .26, p = .002$), and quality of relationship, ($\tau = .25, p = .002$). There was a significant relationship between quality of relationships and frequency of contact, ($\tau = .66, p = .001$). Quality of relationship was also related with years homeless, ($\tau = .19, p = .023$). Years of homelessness and frequency of contact were also related, ($\tau = .20, p = .012$).

Table 4. 11

Bivariate Correlations of Variables in the Study (N=80)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.Age	1																			
2.Gender	.10	1																		
3.Race	0.01	-.03	1																	
4.Education	0.13	-0.17	0.30**	1																
5.Volunteering	-0.09	-0.30*	-0.15	-0.14	1															
6.Employment	0.05	-0.03	0.03	-0.04	0.06	1														
7. Jail/Prison	-0.11	-0.27	0.12	0.23*	-0.07	-0.02	1													
8. Housing	0.13	0.01	0.03	0.03	-0.02	0.16	0.12	1												
9. Homeless	0.01	0.09	-0.04	-0.17	-0.20	0.02	-0.10	-0.06	1											
10. Size	-0.20*	-0.28**	-0.15	0.18	0.00	-0.6	0.03	0.04	-0.16	1										
11. Closeness	-0.26*	-0.26**	-0.11	0.25*	0.01	-0.04	0.03	-0.03	-0.15	0.93**	1									
12. Frequency	0.04	0.02	-0.12	-0.10	0.14	-0.08	-0.12	-0.01	0.23*	0.06	0.03	1								
13. Family	0.06	-0.17	-0.22*	-0.10	0.24*	-0.02	-0.03	-0.06	0.06	0.10	0.10	0.26**	1							
14. Friends	-0.18	0.05	0.16	0.11	-0.20	0.01	0.03	0.12	-0.01	0.12	0.09	-0.10	-0.63**	1						
15.Profess	0.03	0.16	0.06	0.02	-0.07	0.05	-0.05	0.10	0.12	0.04	0.10	0.13	-0.31**	0.10	1					
16. Intimate	-0.26*	-0.09	-0.19	-0.03	-0.04	-0.22	0.25*	-0.08	-0.11	0.06	0.06	-0.17	-0.10	0.03	-0.05	1				
17. Support	-0.11	0.00	-0.18	-0.16	0.17	0.04	-0.11	0.08	0.04	0.05	0.06	-0.05	0.11	-0.06	0.18*	0.11	1			
18. Quality	0.00	0.03	-0.12	-0.10	0.12	-0.13	-0.07	-0.03	0.23*	0.04	0.02	0.66**	0.25**	-0.12	0.04	-0.02	0.01	1		
19. Structure	-0.25**	-0.16	-0.17	0.15	-0.00	-0.11	0.07	-0.02	0.00	0.65**	0.66**	0.26**	0.04	0.18	0.26**	0.22*	0.07	0.22*	1	
20. Wellbeing	.05	0.01	0.08	0.10	0.03	0.11	-0.01	0.12	-0.20*	0.20	0.02	-0.19*	-0.09	0.08	0.08	-0.02	0.19*	-0.19*	-0.06	1

Multiple regression was conducted to determine the best linear combination of variables that could predict wellbeing. The combination of years of homelessness, quality of relationship, and perceived social support predicted psychological wellbeing, ($F(3, 72) = 3.11, p = .021$). However, only perceived social support significantly predicted wellbeing. The adjusted *R-square* value of .09 indicates that 9% of the variability in psychological wellbeing is predicted by a combination of years of homelessness, satisfaction with network, and perceived social support. According to Cohen (1988), this a small effect size. The analysis indicates that greater perceived social support increases psychological wellbeing among adults in supported housing. Table 4.12 below shows variables and beta coefficients for the multiple regression.

Table 4.12

Simultaneous Multiple Regression Analysis Summary for Years of Homelessness, Perceived Social Support, and Quality of Relationship Predicting Psychological Wellbeing (N=80)

Variable	<i>b</i>	<i>SE B</i>	β	<i>p</i>
Years of Homelessness	-06.43	4.06	-.18	$p = .117$
Perceived Social Support	5.36	2.46	.25	$p = .033$
Quality of Relationship	-3.48	1.99	-.21	$p = .084$
Constant	59.89	9.48		$p = .001$

Note. $R^2 = .09, F(3, 72) = 3.46, p = .021$.

Research Question Three

- Controlling for demographic and situational variables, how does perceived social support, and quality of relationship each predict psychological wellbeing?

Based on social convoy theory and literature, the hierarchical regression was conducted to investigate how variables in the study contribute to predicting psychological wellbeing (Table 4.13). Because years of homelessness was correlated with psychological wellbeing, it was

entered in Step 1. However, it did not significantly predict psychological wellbeing, ($F(1, 74) = 3.90, p = .052$, adjusted $R^2 = .04$). After step 2, when perceived social support was added to years of homelessness, they significantly predicted psychological wellbeing, ($F(2, 73) = 3.55, p = .034$). After step 3, when quality of relationship was included, they slightly improved the prediction, ($F(3, 72) = 3.46, p = .021$, adjusted $R^2 = .09$), indicating 9% of the combination of years of homelessness, perceived social support, and quality of relationship explained the variance in psychological wellbeing. However, when all the variables are considered, only perceived social support significantly predicted psychological wellbeing. Years of homelessness and quality of relationships did not significantly predict psychological wellbeing.

Table 4.13

Hierarchical Multiple Regression Analysis Summary Predicting Psychological Wellbeing from Years of Homelessness, Perceived Social Support, and Quality of Relationship (N=80)

Variable	<i>b</i>	<i>SEB</i>	β	<i>p</i>
Step 1				
Years of homelessness	-8.03	4.07	-.22	$p = .052$
Constant	70.93	6.38		$p = .001$
Step 2				
Years of homelessness	-8.01	4.01	-.22	$p = .050$
Perceived social support	4.24	2.41	.20	$p = .083$
Constant	58.25	9.57		$p = .001$
Step 3				
Years of homelessness	-6.43	4.06	-.18	$p = .117$
Social support	5.36	2.46	.25	$p = .033$
Quality	-3.48	1.99	-.21	$P = .084$
Constant	59.83	9.48		$P = .001$

Note. $R^2 = .01$ for Step 1: $\Delta R^2 = 0.4$, for Step 2: $\Delta R^2 = .08$, for Step 3.

Research Question Four

4. Does perceived social support play a mediating role between social network structure and psychological wellbeing?

Results of Mediation

Based on the social convoy model, a simple mediation analysis was conducted by using ordinary least squares path analysis to determine whether perceived social support mediates between social network structure and psychological wellbeing. As shown in Table 4.14, after controlling for years of homelessness, network structure is significantly associated with perceived social support ($b = 0.15, p < .001$); perceived social support is significantly associated with psychological wellbeing ($b = 6.10, p < .05$). Based on a 10,000 bootstrap sample, which was different from zero, perceived social support mediated the relationship between social network structure and psychological wellbeing, after controlling for years of homelessness ($b = .93, \text{BCa CI } [.003, 2.134]$) (see Table 4.15). There was no association between social network structure and psychological wellbeing, ($b = -1.17, p > .05$).

Table 4.14

Model Coefficients for the Mediation Model

		Consequent						
		Perceived Support (M)			Psychological Wellbeing (Y)			
Predictors		coefficient.	SE	p		coefficient.	SE	p
Network Structure (X)	a	0.15	0.03	<.001	ĉ	-1.17	0.86	0.172
Perceived Support (M)		--	--	--	b	6.10	2.75	0.030
Years Homeless		-.00	.17	.999		-8.04	3.99	0.047
constant	i ₁	2.98	0.27	<.001	i ₂	52.75	10.31	<.001
R ² = 0.24					R ² = 0.11			
F (2, 73) = .11.58, p < .001					F (3, 72) = 3.03, p > .05			

Table 4.15

Direct and Indirect Effect of Network Structure (X) on Psychological Wellbeing (Y) through Perceived Support (M)

Direct Effect of X on Y	Effect	SE	t	p	LLCI	ULCI
	-1.18	0.86	-1.38	0.172	-2.98	0.53
Indirect Effect of X on Y	Effect	Boot SE			Boot LLCI	Boot ULCI
	0.93	0.55			0.003	2.134

Research Question Five

- Does social support mediate the relationship between social network structure and psychological wellbeing at different levels of quality of relationship?

The moderated mediation analysis examined whether the mediating role that perceived social support plays between social network structure and psychological wellbeing depends on

the levels of quality of social networks. In other words, this analysis considered the indirect effects of perceived social support on psychological wellbeing at different levels of quality of relationships with social networks. As shown in Table 4.16, the interaction between perceived social support and relationship quality was not significant, ($b = 1.51, p > .05$). However, as shown in Table 4.17, further probing of the interaction at values of quality of relationship showed there is an indirect effect of perceived social support on psychological wellbeing when quality is “relatively low” (16th percentile), but there is no significant effect when quality is “moderate” (50th percentile) and “high” (84th percentile).

Table 4.16

Model Coefficients for the Conditional Process Model

Predictors	Consequent							
	M (Perceived Support)				Y (Psychological Wellbeing)			
		coefficient	SE	p		coefficient	SE	p
X (Network Structure)	a	0.15	0.03	<.001	¢	-0.50	0.96	.61
M (Perceived Support)	--	--	--	--	b ₁	4.35	3.73	0.25
V (Quality)	--	--	--	--	b ₂	-7.63	6.37	0.23
Interaction (M×V)	--	--	--	--	b ₃	1.52	1.91	0.43
Years Homeless		-0.00	0.17	.999		-6.82	4.09	0.10
constant	i ₁	2.98	0.27	<.001	i ₂	53.36	12.19	<.001
R ² = 0.24				R ² = 0.14				
F (2,73) = 11.58, p < .001				F (4, 71) = 2.32, p = .05				

Table 4.17

The Direct Effect and the Conditional Indirect Effect of Network Structure (X) on Psychological Wellbeing (Y) through Perceived Support (M) for Various Values of Quality (V)

Direct Effect of X on Y						
	Coefficient	SE	t	p	LLCI	ULCI
	-0.499	0.97	-0.52	0.61	-2.422	1.424
Conditional Indirect Effect(s) of X on Y at values of the moderator						
	Quality	Effect	Boot SE		Boot LLCI	Boot ULCI
Perceived Support	1.00	.895	0.545		0.025	2.135
	2.00	1.127	0.759		-0.025	2.911
	3.400	1.452	1.204		-0.265	4.297

Qualitative Results

Research Question Six

6. What was the nature of the social networks of formerly homeless adults before entering supportive housing?

A total of 20 participants were interviewed for the qualitative component of the study. About half of participants were White females and a quarter were White males. Three identified as Black and the rest identified as Hispanic/Latino. All participants were residents of the Colorado Coalition of Homeless supportive housing program.

Restricting Social Networks

Qualitative results revealed one overarching theme that showed participants restricted their social networks while they were homeless. Three sub-themes were also identified: mistrust of people, self-shaming, and “I don’t wanna be around no body.” This overarching theme and

sub-themes illustrate participants' narratives of how past life experiences, some preceding homelessness, and personal challenges shape the nature of their social network structures or how they construct their social relationships. The three sub-themes are explored in more detail.

Mistrust of people. This theme illustrates participants' mistrust with people due to previous life experiences, stressing a general mistrust from their past experiences with people.

Helen, an older adult White female, illustrated this sub-theme while talking about her experiences while homeless:

I isolate[ed] as much as I possibly can. I've had a lot of weird people experiences and pretty much, no offense okay, I find people really worthless and just not worth my time. Not everybody, but just 99.99% of them.

Another participant, John, a middle-aged White male, also echoes this sub-theme when he mentioned:

I pretty much spent a lot of time by myself. I did it pretty much solo. I had a friend or two out there but I didn't really have any relationships with anybody. I guess I felt like nobody cared enough to help me out. If I was going to be out there on my own I might as well just be out there on my own. Right? didn't have anybody that wanted to help me while I was going through mental health problems.

Helen and John's narrations allude to a general feeling of mistrust of people due to previous experiences prior to entering homelessness or during homelessness, which engendered isolation and restricted interactions with people. John felt no one cared to provide support while he was experiencing homelessness. Thus, he felt alone while he was homeless.

Self-shaming. Another sub-theme that emerged in this phase of the study is self-shaming. Some participants felt isolation or restricting interactions was because of homelessness. Two participants, Diego and Peter, alluded to a feeling of self-shaming. Peter, a Black male in his 30s, narrated his experiences while homeless:

At that time, nobody. Nobody. Just I was kind of mad at myself and I didn't want to be around people. You see, because I was homeless. I didn't want them to know. You don't

wanna see nobody because once you become homeless, people think low of you. You know what I mean? Even with that, I mean, there's reason why you become homeless. But people, they're not forgiving, if you know what I mean. That's why I didn't want to be around people. No. I did not want to be around people. I did not want people to be around me.

Diego, a Latino male in his 50s has this to say:

I had a truck at the time. So I sometimes needed a place to park it in order to ... I had a futon mattress in the back. So I could sleep in the back sometimes. But most of the time, I would go to shelters for people where you can eat and whatnot. And because I felt ashamed of myself, I wouldn't go around as many people as I would normally have in my life. But it wasn't a whole bunch of people because you don't really want to go around a whole bunch of people when you're in a situation like that. So you tend to keep that part hidden, that part of your life hidden. Right? I don't want to be belittled or looked down upon. So usually, I would try to go to school. And I would try to ... Because I went to college when I was homeless. And so I was trying to put on an air that everything was good in my life. But when the nighttime came, it was kind of "Where am I going to rest my neck?"

"I don't wanna be around nobody." Another subtheme that emerged in the qualitative analysis was "I don't wanna be around no body." This subtheme describes challenges faced by individuals experiencing homelessness and its impediments to creating and maintaining social relationships. Lucero, a Latino woman in her 40s, narrated her experiences with mental illness and how it impacted her social interactions:

Not many people? Because I don't go with nobody you know. I don't talk to nobody. Sometime, I had a lot of depression. And I can't go with no people. Only me and him. Only me and him. With my daughter, yeah, sometime, I would stay with her and you know, in the street, you know. In the car. Nobody. Only my boyfriend. Yeah. Always, I'm alone with him. With nobody. I don't have no friends, nothing. And sometime, I was with my daughter, except I'm not, because I feel always I had a lot of depression. Not ... I don't want to talk to her. No. No, because always I'm depressed, you know.

Alyssa, a White female in her 40s, also narrated how her mental illness precluded her from forming and maintaining relationships with people:

I didn't have very good social relationships before I moved into housing, but, I also had an undiagnosed mental illness, so, my behavior was very erratic and very out of control and when I went to The Coalition, I was able to get mental health help and I was put on

medication and I developed good relationships upon getting housing and becoming stable. Yes and my behavior was erratic and I was horrible. Yes, but, they didn't know how to deal with me, so, they didn't offer me much help. I had to seek that on my own and once I got help now we're all very much close.

Lucero and Alyssa's narrations show how their mental illness inhibited their social network formation and interactions. Lucero, although she had a daughter, mentioned that she was unable to maintain a relationship with her daughter because of her depression, and the only person she had a relationship with was her boyfriend. Alyssa narrated how her mental illness inhibited her ability to relate to people.

Chapter Summary and Conclusion

The results of the study showed participants in this sample have more family members in their network than other network members. Participants varied by gender on network size and closeness. Females had more people in network and closer relationships than males. Multiple regression results indicated a combination of years of homelessness, perceived social support, and quality of relationship in the model significantly predicted psychological wellbeing. However, perceived social support was the only significant variable. Perceived social support also mediated the relationship between social network structure and psychological wellbeing. Further analysis using conditional process modeling indicated perceived social support is only associated with psychological wellbeing when quality of social relationship was low. Qualitative result showed participants in this study restricted their social interactions while they were homeless.

CHAPTER 5: DISCUSSION

Introduction

The purpose of this embedded mixed-method case study was to examine how social network variables (structural network characteristics, perceived social support, and quality of social relationship), as well as demographic and situational characteristics are associated with psychological wellbeing of previously homeless adults in supported housing. The study first provided a comprehensive investigation of the social network characteristics of previously homeless individuals in permanent supported housing. In addition, the study investigated whether psychological wellbeing and social network characteristics differed by demographic and situational factors. The study collected survey data from 80 residents in the Colorado Coalition of Homeless permanent supportive housing program on their social network characteristics and psychological wellbeing. In addition, qualitative data were collected using semi-structured interviews. The study presented how social network variables and demographic and situational variables contribute to psychological wellbeing. Also addressed was to investigate the mechanism through which perceived social support and quality of social relationship are associated with psychological wellbeing.

Summary

This section provides a summary of the study by restating the purpose, problem statement, methodology and key findings.

Purpose

The purpose of this embedded mixed-method case study was to explore social networks, and to investigate its effects on psychological wellbeing among formerly homeless adults in a

supportive housing program. The quantitative strand examined the association between social network characteristics and psychological wellbeing. The qualitative component explored the social networks of the sample prior to entering the supportive housing program.

Overview of the Problem

Although a large body of empirical research has investigated the effects of housing and supportive services on the wellbeing of formerly homeless adults, the association of social networks on the wellbeing of formerly homeless adults in supportive housing programs has not been adequately explored. Very few previous studies have qualitatively explored the social networks of adults in supportive housing programs (Hawkins & Abrams, 2007; Henwood et al., 2015).

Methodology

An embedded mixed-method case study was utilized to understand the social networks of formerly homeless adults in a supportive housing program. The quantitative component was the dominant approach ($N = 20$); it was used to examine the relationship between social network variables and psychological wellbeing. To understand social relationships at any point, it is important to understand previous relationships (Antonucci, 2001). The qualitative component ($n = 20$) was used to further explore the nature of participants' social networks prior to entering housing. Quantitative and qualitative data were collected concurrently.

Findings

Findings indicate participants' psychological wellbeing varied by the number of years they have been homeless. However, other demographic and situational variables did not indicate significant difference. Results of multiple regression analysis indicated perceived social support

was associated with psychological wellbeing. Additionally, perceived social support mediated the relationship between social network structure and psychological wellbeing.

Discussion

The quantitative results are discussed in this section including the descriptive, multiple regression, hierarchical regression, mediation, and conditional process modeling results. The descriptive results indicate the social network characteristics and psychological wellbeing of formerly homeless adults in supported housing programs at six different apartment complexes in the Denver metro area. The participants reported a lower than average psychological wellbeing score than past studies (Fazio, 1977; Poston et al., 1998; Taylor et al., 2003). This finding suggests participants in this sample may have a much lower psychological wellbeing than the general population.

Social network characteristics show the nature of the relationships of participants in the sample. The average network size (8.09), for example, suggests participants may have more social interactions than previously assumed in other studies (Golembiewski, Watson, Robison, & Coberg II, 2017). However, three participants did not have anyone in their social network. Thus, although most participants were socially active on some level, other participants were isolated. The respondents' network composition was found to have a greater proportion of family members in their network than friends, professionals, and intimate partners. This suggests respondents may be interacting most often with family members than other members of their network. Measurements of perceived social support and satisfaction with the quality of relationships were measured on a 1 to 4 Likert scale; the averages suggest respondents may have a much lower satisfaction with the quality of their relationships than their perceived social support would indicate by sheer quantity.

Research Question One

1. Do psychological wellbeing, perceived social support, quality of social relations, network structure variables differ by respondents' demographic characteristics?

The results of the analysis on whether participants differed on psychological wellbeing by demographic and situational characteristics showed that only years of homelessness (three years or less, and more than three years) had a statistically significant difference on psychological wellbeing. Respondents who were homeless for more than three years had lower wellbeing than those with less than three years of homelessness. However, other underlying factors may explain this finding, or it may be more complex than merely years of homelessness. Participants with longer homelessness time may have chronic mental health and/or substance abuse disorders, which often go undiagnosed. Participants with severe mental health and substance abuse disorders are often the most difficult for professionals to engage. However, this findings shed important light on the psychological wellbeing of adults in supported housing. This finding suggests that even after individuals have exited homelessness, the effects of years of homelessness may continue to impact their psychological wellbeing.

Respondents' perceived social support did not differ by their demographic and situational characteristics. Social support may be influenced by the housing type (Yanos, 2007), which might explain the lack of differences by demographic and situational characteristics. However, differences between non-Whites and Whites approached the significance level at .054. More robust parametric tests or a larger sample may better detect differences. More interestingly, respondents who were homeless for more than three years had more quality relationships than those with less than three years of homelessness. Because homeless individuals rely on their social network for survival (Snow & Anderson, 1993), respondents who might have spent longer

years on the street may have developed stronger ties with their friendship networks and may be more satisfied with the quality of their friendship networks than those with less years on the streets.

The findings for social network structural variables and demographic and situational variables were partly consistent with the social convoy model. According to the social convoy model, social network structural factors may differ by situational and demographic characteristics (Kahn, 1979). This study further extends the theory with formerly homeless adults in a supportive housing program. This study found certain structural network variables were influenced by demographic factors. Factors of size of network, closeness, and proportion of families in networks were differentiated by demographic characteristics. However, other variables did not vary by demographic and situational characteristics. Still, findings in this study were generally consistent with previous studies, although studies on network structure and demographic variables were inconsistent (Antonucci, 2001; Fiori, Smith, & Antonucci, 2007). This study shows that certain structural network variables were differentiated by demographic factors and provides further context to understand the social networks of adults in supported housing.

Analyses showed that network size differed by age. Respondents 55 years or less had more people in their network than those over 55 years old. This finding is consistent with the convoy model, which suggests that structural characteristics vary by life-span differences (Antonucci & Akiyama, 1987). Results indicated respondents 55 years or younger may have more interactions with people than those over 55 years old. Similar to the previous study by Pugliesi and Shook (1998), females in this study had more people in their network than males.

Women's social networks may include children, which may partially account for larger network size (Müller, Nordt, Lauber, & Rössler, 2007).

Network size did not differ by race. Ajrouch and Antonucci (2017) found similar results when they compared Arab Americans, Blacks, and Whites. Compared with other groups, Blacks have smaller social network size than other groups, according to Ajrouch et al. (2001) and Pugliesi and Shook (1998). This inconsistency with the current study could be explained by the small sample size of this study ($N = 80$) and recoding of variables into non-White and Whites. A larger sample size with more categories on race/ethnicity may be better able to detect differences in network size among different groups.

Closeness varied by gender and age. This study suggests females and those 55 years or younger have closer relationships than males and over 55 year-olds. Results for proportion of families in network showed non-Whites had more interactions with families than Whites. Similarly, Ajrouch et al. (2001) found significant differences between Blacks and Whites on proportion of family in networks. Blacks had a higher proportion of families in networks than Whites. This current study did not find significant difference between non-Whites and Whites on frequency of contact, Pugliesi and Shook (1998) found that Blacks have less frequent contact with relatives, friends, and neighbors than Whites. However, Ajrouch et al. (2001) found Blacks had more contact with their network members than Whites. This inconsistent result with previous studies may be explained by categorizations of race variables, White and non-Whites.

Very few participants in this study indicated having an intimate partner ($n = 20$), which was consistent with previous research findings with this population. Previous research has shown that formerly homeless individuals tend to be more suspicious about forming intimate

relationships due to past experiences and current concerns (Padgett et al., 2008), which might explain what was found in this study.

Research Questions Two and Three

2. What is the best possible combination of demographic, situational, and social network variables to predict psychological wellbeing among adults in supported housing?
3. Controlling for demographic and situational variables, how does perceived social support, and quality of relationship each predict psychological wellbeing?

Analyses suggests a combination of years of homelessness, quality of relationships, and perceived social support can significantly predict psychological wellbeing. This finding is consistent with ecological perspective, which argues that social interactions between the individual and the environment have implications on behavioral outcomes and may be influenced by situational factors (Bronfenbrenner, 1979; Bronfenbrenner, 1994). However, the findings suggest perceived social support was the most important factor in predicting psychological wellbeing among adults in supported housing. This finding must be interpreted with caution because different factors may influence perceived social support that were not considered in this study. Perceptions of supportive relationships may be influenced by several factors such as mood and personality, which were not studied here. Research has shown that extroverted individuals tend to have larger networks, more frequent social contact, and perceived higher social support from network members; in contrast, individuals with mental illness have reported lower levels of perceived social support (Russell, Booth, Reed, & Laughlin, 1997). In addition, the definition of what constitutes “high” or “low” perceived social support may be different individually, thus, comparing individuals may be less reliable (Shor & Roelfs, 2015). Also, it is important to note that perceived social support may vary under periods of stress (Gottlieb, 1985). Hence,

participants may report different levels of stress at different periods, and thereby different levels of social support, even if social support actually remains the consistent. The findings are consistent with the literature on perceived support and different measures of psychological wellbeing. Perceived social support was correlated in past studies with different measures of psychological wellbeing of individuals with chronic conditions (Bennett et al., 2001; McDowell & Serovich, 2007; Uchino, Cacioppo, & Kiecolt-Glaser, 1996).

Research Questions Four and Five

4. Does perceived social support play a mediating role between social network structure and psychological wellbeing?
5. Does social support mediate the relationship between social network structure and psychological wellbeing at different levels of quality of relationship?

The analyses revealed perceived social support mediated the relationship between network structure and psychological wellbeing; the association between social network structure and psychological wellbeing depends on perceived social support. Network structure may not have much influence on participants' psychological wellbeing based on these results. In addition, the combination of the number of people in their network, the frequency with which they interact, how close they are with these people, and the type of relationship may not be an important factor in determining their psychological wellbeing either. However, the perceived support from the network structure seems to be the most important consideration in determining participants' psychological wellbeing.

The second part of the analyses investigated whether the mediation role that perceived social support plays between social network structure and psychological wellbeing could be differentiated based on relationship quality. The findings showed that psychological wellbeing

was effected when quality is low. However, it is interesting to note that a significant effect on psychological wellbeing is not found when quality is high. Thus, when respondents perceived their relationships as low in quality, the mediating effect of perceived social support on psychological wellbeing was significant. However, when they perceived the quality of their relationship was high, perceived social support has no significant effect on psychological wellbeing. Thus, perceived social support seemed to be more of an important factor when it was perceived to be of low quality more than when it was perceived to be of high quality.

Research Question Six

6. What was the nature of the social networks of formerly homeless adults before entering supportive housing?

The qualitative component explored the nature of participants' social networks prior to exiting homelessness to provide an understanding of the context of their social interactions before they entered supported housing. One overarching theme emerged from the analysis that showed participants in this study restricted their social networks while they were homeless. The overarching theme had three sub-themes: (a) mistrust of people; (b) self-shaming; and (c) "I don't wanna be around no body." Restricting social networks describes the underlying reasons homeless individuals restricted their social interactions, mostly based on their prior experiences to being homeless and experiences during homelessness. This finding is consistent with previous research findings. Johnson et al. (2005) found homeless youth's networks were associated with their experiences. Baum and Burnes (1993) also observed that homeless individuals may disaffiliate from people, including alienation from helping institutions.

The qualitative results indicate participants' lived experiences prior to being homeless, and their experiences during homelessness continued to shape the structure and function of their

social relationships, defining who and how they interact with people. Thus, these findings support the theoretical underpinnings of the study of life course and social convoy theories. From a life course perspective, Lang (2004) suggested that personal and situational factors influence social networks and their change and variance over the course of life. Consistent with the life course perspective, the qualitative findings suggest that social relationships may be viewed in the context of changes over the course of life. Participants' previous experiences with relationships prior to becoming homeless and also during homelessness informed their interactions and how they form their social network structure. Similarly, the findings support the convoy model, which postulates that personal and situational characteristics define social network structure (Kahn, 1979).

Participants seemed to premise their mistrust of people on their perceived lack of supportive relationships prior to entering homelessness and/or during their homeless experiences. Similar finding has been previously reported with homeless individuals entering residential programs (Padgett, Henwood, Abrams, & Drake, 2008). This suggests participants may have had strained relationships with people in their previous social networks. In addition, the qualitative findings suggest that how the homeless are perceived by larger society may influence their interactions with people. For example, Snow and Anderson (1993) observed that the presence of the homeless in public spaces may invoke discomfort among the non-homeless. Thus, attitudes toward the homeless may further alienate them and constrict their interactions with people.

Similar to previous studies suggesting a relationship between homelessness and mental illness (Baum & Burnes, 1993; Burt, Aron, Lee, & Valente, 2001; Greenberg & Rosenheck, 2008), this study suggests mental illness may have inhibited their ability to form and maintain relationships. Moreover, the experiences of mental illness may have further strained relationships

with people in their social networks, including family, friends, professionals, and intimate partners.

Integrating Quantitative and Qualitative Results

The study results suggest both quantitative and qualitative findings contrast each other on the structure of participants social networks. Quantitative results suggest participants had more people in their social network, reporting an average network size of 8.09, and an average frequency of contact of 2.55 on a scale of 1 to 5. However, the qualitative results suggest participants restricted their social interactions. Contrasting participants' social networks during homelessness and after entering homelessness, this study suggests participants might have expanded their social network after entering housing, as previous studies suggest homeless individuals reconnect with previous relationships after entering housing (Hawkins & Abrams, 2007; Henwood et al., 2015). Participants may have expanded their social interactions after moving into permanent supportive housing program.

Limitations

This study was limited to a sample of formerly homeless adults in on permanent supported housing program. It must be noted that this study was limited in the number of social network variables it could include, considering the multiple measures available to assess personal social network structure. Other social network variables such as proximity and density could have been included to expand the scope of the study, which may have provided further insights into the social network characteristics on psychological wellbeing. Another limitation occurred due to the length of time involved in collecting social network data, causing participants to potentially report smaller network sizes. As noted by Trumbetta et al. (1999),

The length of self-report instruments for social networks, particularly when they are embedded in much longer research protocols, raises an additional question of whether,

for the sake of time, interviewers and patients may have reported smaller than actual social networks. (p. 426)

Based on the advice from this previous study, the number of questions were intentionally limited in order to decrease respondent fatigue. Another limitation of this study was the use of surveys. An obvious weakness in survey research is that reducing data to numbers may not fully capture the complexity of human behaviors (Bell, 2017). In addition, although the study sought to purposefully sample participants, there was not much variation among participants' characteristics. More than half of participants in the qualitative strand identified as whites. This study relied on participants' retrospective recall of their social networks, which may be biased among distressed participants (Kawachi & Berkman, 2001). The associations found in this study are not generalizable to the entire population of formerly homeless individuals in supportive housing. Due to the small sample size, this study was limited in investigating differences among demographic groups. Age, education, years in housing, and years of homelessness variables were re-coded because of the small sample size. While recoding may not have made a significant difference, other group differences may have been subsumed by the categorizations. Furthermore, the conditional process modeling examined the indirect effect of perceived social support at different levels of quality of relationship. However, the mediated effect could be moderated by other variables that were not examined in this study.

Recommendations

Based on the findings of the quantitative and qualitative results, this study makes the following recommendations to inform professionals and policy makers working with formerly homeless adults in supported housing programs.

Quantitative

This study provided a comprehensive exploration of the social relations of adults in a supported housing program. Recommendations in this study may not be generalizable to other supported housing programs. However, the findings in this study may inform professionals and policy makers working with formerly homeless adults in supported housing programs. The analysis of the GWB scale reported a much lower mean than previous studies with Mexican-American women (69.75; Poston et al., 1998), African American women (76.96; Taylor et al., 2003), and college students (73.0; Fazio, 1977). This finding shows concerted effort must be made to improve the wellbeing of adults in supported housing. This could be provided through intensive case management services to continually engage supported housing participants in outpatient treatment services. The study findings suggest that early interventions in addressing homelessness may improve the wellbeing of the current homeless population, particularly when using the housing first approach, which does not require sobriety or treatment as a prerequisite to housing. Moreover, it is recommended that interventions among the formerly homeless population may be more effective if interventions are differentiated by the number of years a person has been homeless. More attention may need to be devoted to formerly homeless adults who have been homeless longer.

It is recommended that program entry assessments of adults in supported housing programs incorporate a perceived social support assessment. Lincoln (2000) suggested assessments should include investigating the quantity and quality of social networks. Others have recommended that practitioners assess the social network of clients in treatment at initial intake and during the treatment process (Min et al., 2013). Assessing supported housing participants' social support may inform professionals if participants are isolated or integrated in their

communities (Hardcastle, Powers, & Wenocur, 2011). Based on the score on the perceived social support assessment score, case management plans could include social support interventions among participants with low perceived social support. Increasing support for residents with perceived low support may improve their wellbeing. However, it must be noted that not all supportive networks are beneficial; some supportive networks may also have negative influences on wellbeing. Thus, professionals would have to assist residents in supported housing programs with low social support to develop and sustain positive supportive relations with primary, secondary, and tertiary support networks. Primary support networks include network members with general interests in each other's lives such as family and friends; secondary support networks may include those with narrower interests in members and may be composed of informal and formal groups such as acquaintances, religious groups, social clubs and others; tertiary support networks have much more limited interests in members and are more formalized, such as therapeutic support groups (Hardcastle et al., 2011). However, emphasis must be placed on developing primary support networks, as previous research has shown that more support from primary network members have better outcomes on physical and mental health (Lincoln, 2000).

Qualitative

Similar to quantitative findings, it is recommended that assessments of current homeless populations could include screening tools to assess strained relationships with families and friends. Assessing social relationships may inform homeless interventions and inform professionals particularly of mental illness symptoms. In addition, homeless interventions may include programs that promote developing positive social networks. Increasing the social networks of current homeless populations may enhance homeless intervention programs.

Implications for Future Research

Although previous studies have investigated objective measures of mental health disorders and substance abuse disorders among the formerly homeless in supported housing programs, a significant gap remains in the literature on subjective feelings of psychological wellbeing. Thus, more studies are needed to examine subjective perceptions of wellbeing of adults in supported housing programs. Further studies are needed to examine the relationships between perceived social support and quality of relationship. Although these two concepts may be conceptually close, based on the findings of this study, these are in fact different concepts that need further exploration in the literature, particularly among the study's population.

Differentiated effects of years of homeless on subjective wellbeing measures is warranted in the literature and the results of this study. This study calls for larger samples, perhaps using cross-national data to investigate the effects of social networks on wellbeing among supported housing adults. The qualitative methodology in this study could be replicated in other contexts to further explore the nature of social networks of homeless adults. Future research studies could investigate the implications of social support on subjective wellbeing measures, as well as the effects of different aspects of social support on wellbeing. The mechanics through which perceived social support interacts with the quality of the relationship needs further exploration with a larger sample size.

Chapter Summary and Conclusion

This study provided detailed characteristics of the social networks of adults in a supported housing program. Descriptive analysis showed participants in this study may have more interactions with their social networks than may be assumed. This study suggests residents in a supportive housing program may interact more with their family members than other

members of their social network, with family being a larger proportion of their social network than other network members. The study further explored the relationships between social network variables and psychological wellbeing. Results suggest participants' years of homelessness may continue to influence their psychological wellbeing even after finding housing. Based on these results, it is recommended that professionals differentiate intervention programs by years of homelessness. This study also suggests that residents in supportive housing with low social support, may with assistance improve their social support, and thereby enhance their psychological wellbeing.

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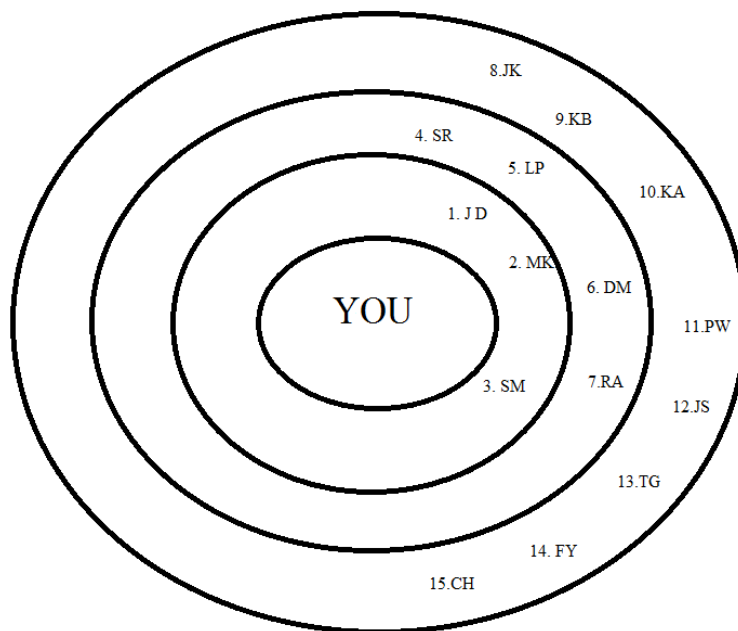
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APPENDIX A

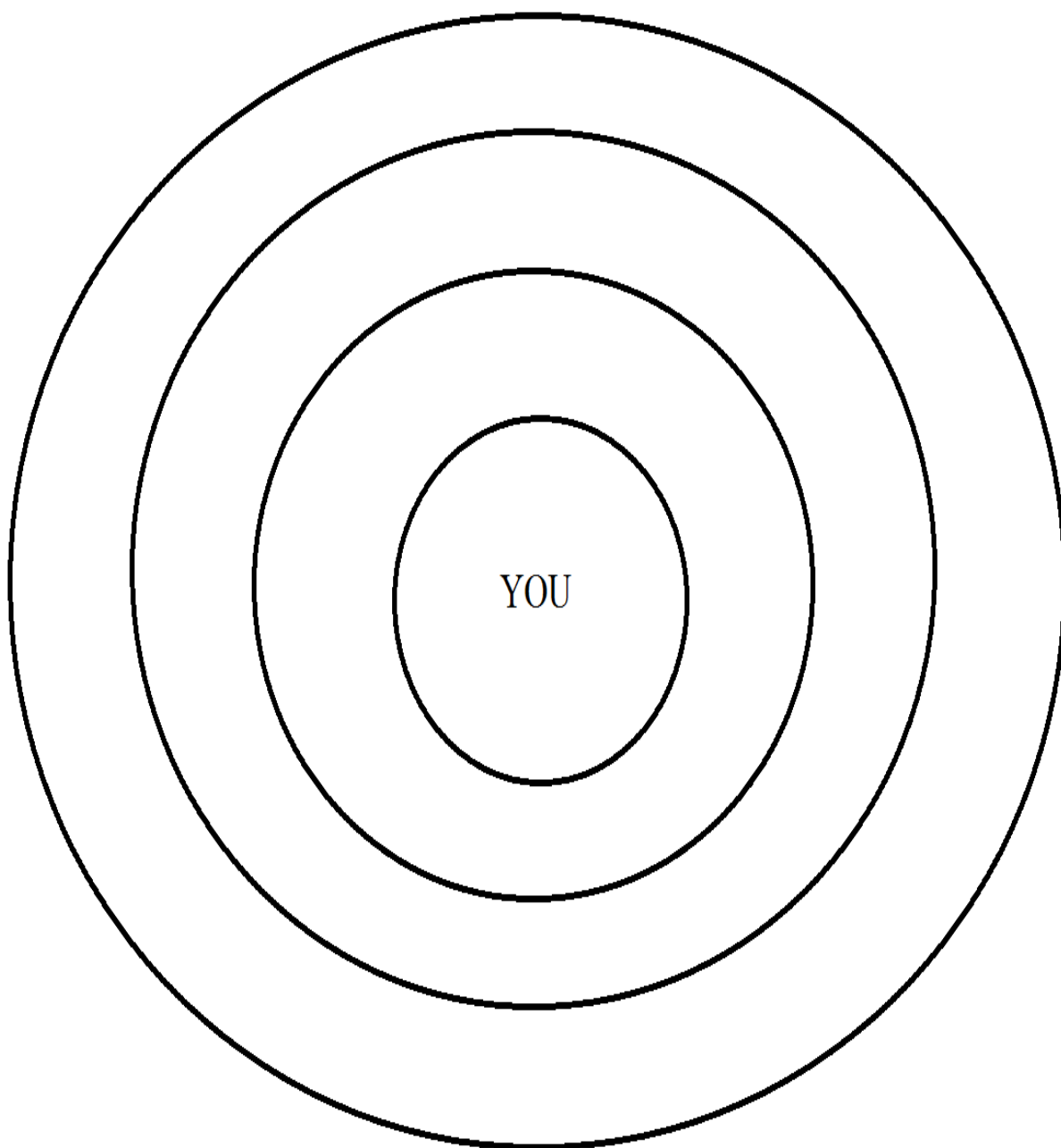
THE SOCIAL NETWORK QUESTIONNAIRE

I would like to ask you about the people who are important to you in your life right now. You are at the center. The first ring represents people you feel so close that its hard to imagine life without them. The second ring represents people you feel not quite as close, but still very important to you. The third ring represents people you have not mentioned, but who are close enough and important enough in your life. Please complete the diagram by filling in the initials of the people who are important to you. Please assign a number to each person as you place the person in the circle. The diagram below shows an example of how to diagram the important people in your social network.

Example



SOCIAL NETWORK DIAGRAM



Please fill in the following information about the first 10 people in your social network:

Person	1	2	3	4	5	6	7	8	9	10
Initials										
Type of Relationship 1=Intimate partner 2= Friends 3=family 4= Professional										
Frequency of Contact 5=Very Frequently 4=Frequently 3=Occasionally 2=Rarely 1=Very Rarely										
Relationship Quality 4= Very satisfied, 3=Somewhat satisfied, 2=Somewhat dissatisfied, 1=Very dissatisfied										
Would this person go to the doctor with you? 4 = Definitely true 3 = Probably true, 2 = Probably false, 1 = Definitely false										
Would this person lend you a dollar? 4 = Definitely true 3 = Probably true, 2 = Probably false, 1 = Definitely false										
Would you talk to this person about intimate problems? 4 = Definitely true 3 = Probably true, 2 = Probably false 1 = Definitely false										

Would you share private worries with this person? 4 = Definitely true 3 = Probably true, 2 = Probably false, 1 = Definitely false										
Would you turn to this person for advice concerning family problems? 4 = Definitely true 3 = Probably true, 2 = Probably false, 1 = Definitely false										
Would this person offer you suggestions for personal problems 4 = Definitely true 3 = Probably true, 2 = Probably false, 1 = Definitely false										

APPENDIX B

The General Wellbeing Schedule

1. How have you been feeling in general? (DURING THE PAST MONTH)	___ 1 In excellent spirits ___ 2 In very good spirits ___ 3 In good spirits mostly ___ 4 I have been up and down in spirits a lot ___ 5 In low spirits mostly ___ 6 In very low spirits
2. Have you been bothered by nervousness or your “nerves”? (DURING THE PAST MONTH)	___ 1 Extremely so—to the point where I could not work or take care of things ___ 2 Very much so ___ 3 Quite a bit ___ 4 Some—enough to bother me ___ 5. A little ___ 6 Not at All
3. Have you been in firm control of your behavior, thoughts, emotions, OR feelings? (DURING THE PAST MONTH)	___ 1 Yes, definitely so ___ 2 Yes, for the most part ___ 3 Generally so ___ 4 Not too well ___ 5 No, and I am somewhat disturbed ___ 6 No, and I am very disturbed
4. Have you felt so sad, discouraged, hopeless, or had so many problems that you wondered if anything was worthwhile? (DURING THE PAST MONTH)	___ 1 Extremely so —to the point that I have just about given up ___ 2 Very much so ___ 3 Quite a bit ___ 4 Some —enough to bother me ___ 5 A little bit ___ 6 Not at all
5. Have you been under or felt you were under any strain, stress, or pressure? (DURING THE PAST MONTH)	___ 1 Yes —almost more than I could bear or stand ___ 2 Yes—quite a bit of pressure ___ 3 Yes —some, more than usual ___ 4 Yes—some, but about usual ___ 5 Yes— a little ___ 6 Not at all

6. How happy, satisfied, or pleased have you been with your personal life? (DURING THE PAST MONTH)	☐ 1 Extremely happy—could not have been more satisfied or pleased ☐ 2 Very happy ☐ 3 Fairly happy ☐ 4 Satisfied —pleased ☐ 5 Somewhat dissatisfied ☐ 6 Very dissatisfied
7. Have you had any reason to wonder if you were losing your mind, or losing control over the way you act, talk, think, feel, or of your memory? (DURING THE PAST MONTH)	☐ 1 Not at all ☐ 2 Only a little ☐ 3 Some—but not enough to be concerned or worried about ☐ 4 Some and I have been a little concerned ☐ 5 Some and I am quite concerned ☐ 6 Yes, very much so and I am very concerned
8. Have you been anxious, worried, or upset? (DURING THE PAST MONTH)	☐ 1 Extremely so—to the point of being sick or almost sick ☐ 2 Very much so ☐ 3 Quite a bit ☐ 4 Some —enough to bother me ☐ 5 A little bit ☐ 6 Not at all
9. Have you been waking up fresh and rested? (DURING THE PAST MONTH)	☐ 1 Every day ☐ 2 Most every day ☐ 3 Fairly often ☐ 4 Less than half of the time ☐ 5 Rarely ☐ 6 None of the time
10. Have you been bothered by any illness, bodily disorder, pains, or fears about your health? (DURING THE PAST MONTH)	☐ 1 All the time ☐ 2 Most of the time ☐ 3 A good bit of the time ☐ 4 Some of the time ☐ 5 A little of the time ☐ 6 None of the time
11. Has your daily life been full of things that were interesting to you? (DURING THE Past MONTH)	☐ 1 All the time ☐ 2 Most of the time ☐ 3 A good bit of the time ☐ 4 Some of the time ☐ 5 A little of the time ☐ 6 None of the time

12. Have you felt down-hearted and blue? (DURING THE PAST MONTH)	☐ 1 All the time ☐ 2 Most of the time ☐ 3 A good bit of the time ☐ 4 Some of the time ☐ 5 A little of the time ☐ 6 None of the time
13. Have you been feeling emotionally stable and sure of yourself? (DURING THE PAST MONTH)	☐ 1 All the time ☐ 2 Most of the time ☐ 3 A good bit of the time ☐ 4 Some of the time ☐ 5 A little of the time ☐ 6 None of the time
14. Have you felt tired, worn out, used-up, or exhausted? (DURING THE PAST MONTH)	☐ 1 All the time ☐ 2 Most of the time ☐ 3 A good bit of the time ☐ 4 Some of the time ☐ 5 A little of the time ☐ 6 None of the time
For each of the four scales below, note that the words at each end of the 0 to 10 scale describe opposite feelings. Circle any number along the bar which seems closest to how you have generally felt DURING THE PAST MONTH	
15. How concerned or worried about your HEALTH have you been? (DURING THE PAST MONTH)	0 1 2 3 4 5 6 7 8 9 10 Not concerned Very concerned
16. How RELAXED or TENSE have you been? (DURING THE PAST MONTH)	0 1 2 3 4 5 6 7 8 9 10 Very relaxed Very tense
17. How much ENERGY, PEP, VITALITY have you felt? (DURING THE PAST MONTH)	0 1 2 3 4 5 6 7 8 9 10 No energy AT ALL, listless Very ENERGETIC, dynamic
18. How DEPRESSED or CHEERFUL have you been? (DURING THE PAST MONTH)	0 1 2 3 4 5 6 7 8 9 10 Very depressed Very cheerful

APPENDIX C

I would appreciate if you could provide the following information about yourself.

What is your age? _____

What is your gender? (Select all that apply)

☐ Female

☐ Male

☐ Other

What is your primary race/ethnicity? (Select all that apply)

☐ American Indian or Alaska Native

☐ Asian

☐ Black or African American

☐ White

☐ Native Hawaiian or Other Pacific Islander

☐ Hispanic/Latino

☐ Prefer not to answer

☐ Other

What is the highest level of education you have completed?

☐ Less than high school

☐ High school

☐ Some college

☐ Bachelor's degree or more

Are you currently employed?

☐ Yes

☐ No

Are you currently volunteering?

☐ Yes

☐ No

Have you ever spent a night in jail or prison?

☐ Yes

☐ No

How long were you in jail/ prison? _____

How long have you been living in permanent supportive housing? _____

How long were you homeless?

APPENDIX D

Qualitative Interview Protocol

Date: _____

Time: _____ Location: _____

Interviewee: _____

I am trying to understand how social networks change after moving to permanent supportive housing. I would like to ask you questions on your social networks before and after you moved into permanent supportive housing.

1. Can you please describe your social relationships while you were homeless?
2. Who were the most important people to you while you were homeless?
3. Have your social relationships changed since you moved into permanent supportive housing?
4. Can you describe your social relationships since moving into permanent supportive housing?
5. Who are the important people in your life now?