

**Prior Homelessness and Rent Burden as Predictors of HIV Risk for
Single Room Occupancy Building Residents**

BY

ELIZABETH A. BOWEN
B. Phil and B.A., University of Pittsburgh, 2002
A.M., University of Chicago, 2004

THESIS

Submitted as partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Social Work
in the Graduate College of the
University of Illinois at Chicago, 2014

Chicago, Illinois

Defense Committee:

Christopher Mitchell, Chair and Advisor
Von Nebbitt
James Swartz
Basmattee Boodram, School of Public Health
Lawrence Ouellet, School of Public Health

ACKNOWLEDGMENTS

There's a proverb that rings true for my experience as a doctoral student: "If you want to go fast, go alone. If you want to go far, go together." I have been fortunate to have a wonderful group of mentors, teachers, colleagues, family, friends, and supporters to accompany me on the path to completing this dissertation. First I must extend my wholehearted thanks to Dr. Christopher Mitchell, my dissertation committee chairperson and advisor. Throughout my doctoral studies, he has made himself constantly available with wise words of advice and a listening ear. I am most grateful for his guidance and encouragement. I would also like to thank my other committee members, Dr. Von Nebbitt and Dr. James Swartz of the Jane Addams College of Social Work and Dr. Basmattee Boodram and Dr. Lawrence Ouellet of the School of Public Health. They have each uniquely contributed out of their vast and varied experience to my development as a researcher and scholar.

Many other faculty at UIC have also influenced, encouraged, and supported me during my studies. They are too many to name here, but in particular I would like to thank Dr. Henrika McCoy and Dr. Mark Mattaini, whom I am lucky to consider as mentors. I would also like to thank my classmates in the doctoral program at Jane Addams. Our mutual support and friendships have been a highlight of my doctoral studies. My dear friend Afnan Afnan in the College of Business Administration has provided me with a fresh perspective and many moments of laughter (in addition to being a faithful Indonesian conversation and workout partner).

I started my doctoral studies dreaming of doing international research, only to return to the same Chicago neighborhood where I had my first job as a practicing social worker several years ago. I could not be happier with this outcome. Conducting research with SRO residents in

Uptown was an immensely enriching experience. David Cosey and the entire staff of the Community Outreach Intervention Projects (COIP) – Northside office were instrumental supporters and warmly welcomed me to their office in Uptown for the summer of 2013. I will always remember the care and respect they demonstrated toward their clients as well as toward me and the participants in my study. Dr. Antonio Jimenez, Associate Director of COIP, also provided key support. Dave Thomas and Marty Hansen of the AIDS Foundation of Chicago, Sreya Sarkar of the Lakeview Pantry, and Bharathi Gunasekaran and Mary Lynch-Dungy of ONE Northside provided background information on SRO housing in Uptown that was essential in facilitating the design and implementation of this study.

Many individuals helped me during the data collection phase of this study, first and foremost the study participants. I deeply appreciate their willingness to share their time and experiences, including many difficult ones, with me. My thanks also go to the staff and management of the SRO buildings where I recruited, as their cooperation and support made my research plans an achievable reality. Many of these staff became friendly acquaintances whom I enjoyed getting to know during my recruitment outings. Sebastino Aviles, the research assistant for this study, carried out much of the recruitment work and also assisted with the survey interviews. His engagement skills and enthusiasm for both research and social justice ensured that this process went smoothly.

Finally, I am extremely grateful for the friends and family who have encouraged me, listened to me, cooked for me, driven me places, made me laugh, cheered me on, and celebrated with me throughout this process. Jeremy Spencer shared the ups and downs with me and supported me in many ways, constantly reminding me that I could do this. His kindness and sense of humor were a source of strength. My sisters, Dr. Sarah Bowen and Alissa Bowen, are as

smart as they are thoughtful and hilarious. Their achievements inspire me to go further, and they also make me laugh like few others. My brother-in-law Dr. Mark Nance gave me great advice on many occasions, and my nephew and niece, Simon and Anna, were a fun distraction. I am also thankful for an amazing community of extended family and friends, in Chicago and many other places. These people always give me joy—in particular Amanda Forr, Dr. Joanna O’Leary, Kristy Skerrett, Mairita Smiltars, Lora Salley, Rachel Bickel, Shannon Rooney, Mario Machi, Harriett Green, and Dr. Maryam Zomorodian.

At the core, I feel that anything I accomplish is a testament to my parents, Karen and Curt Bowen, and their incredible example of love, compassion, and hard work. They will always have my deep love and gratitude.

TABLE OF CONTENTS

I. INTRODUCTION	1
A. Background.....	1
B. Conceptual Framework.....	4
C. Hypotheses.....	11
II. LITERATURE REVIEW	12
A. Relationship between Housing Conditions and Sex and Drug-Related Risk Behaviors.....	12
B. Definitions of Housing Conditions in the Housing and HIV Risk Literature	15
C. Inclusion of SRO Dwellings in the Housing and HIV Risk Literature	16
D. Research on Prior Homelessness as a Predictor of Health and Risk	19
E. Research on Rent Burden as a Predictor of Health and Risk.....	20
F. Control Variables and their Association with Housing and HIV Risk	22
G. Conclusions	25
III. RESEARCH METHODOLOGY	27
A. Research Design and Method.....	27
B. Sampling Procedures	27
C. Measurement and Instrumentation	31
D. Instrument Development and Testing	45
E. Data Collection.....	46
F. Human Subjects Protections.....	49
G. Data Analysis Plan	50
IV. RESULTS.....	53
A. Sample Recruitment, Eligibility, and Participation.....	53
B. Univariate Analyses	56
C. Bivariate Analyses.....	67
D. Multivariate Analyses.....	81
E. Summary of Findings	102
V. DISCUSSION	104
A. Study Purpose and Hypotheses	104
B. Discussion of Findings	105

TABLE OF CONTENTS (continued)

C. Limitations.....	118
D. Implications	124
APPENDICES	136
Appendix A	137
Appendix B.....	139
Appendix C.....	143
Appendix D	151
Appendix E.....	156
Appendix F	182
Appendix G	183
Appendix H	184
Appendix I.....	186
Appendix J.....	187
Appendix K	189
Appendix L.....	191
Appendix M.....	194
Appendix N	197
Appendix O	199
Appendix P	202
CITED LITERATURE.....	208
VITA	225

LIST OF TABLES

<u>TABLE</u>	<u>PAGE</u>
I. SELECT PARTICIPANT CHARACTERISTICS	57
II. HIV RISK VARIABLES AND INDICATORS	63
III. SUMMARY OF DISTRIBUTIONS OF KEY CONTINUOUS AND COUNT VARIABLES AND INDICATORS	66
IV. BIVARIATE ANALYSES: DICHOTOMOUS MEASURES OF HOMELESSNESS AND DEPENDENT VARIABLES	68
V. BIVARIATE ANALYSES: CONTINUOUS MEASURES OF HOMELESSNESS AND DEPENDENT VARIABLES	70
VI. BIVARIATE ANALYSES: RENT BURDEN AND DEPENDENT VARIABLES	73
VII. BIVARIATE ANALYSES: SEX, RACE, AND DEPENDENT VARIABLES	75
VIII. BIVARIATE ANALYSES: AGE AND DEPENDENT VARIABLES	76
IX. BIVARIATE ANALYSES: HIV STATUS, MENTAL ILLNESS, AND DEPENDENT VARIABLES.....	78
X. BIVARIATE ANALYSES: INDICATORS OF CRIMINAL JUSTICE HISTORY AND DEPENDENT VARIABLES.....	80
XI. BIVARIATE ANALYSES: HOUSING AND CONTROL VARIABLES ...	82
XII. MULTIVARIATE NESTED LOGISTIC REGRESSION MODEL: ANY ILLCIT DRUG USE OTHER THAN MARIJUANA IN PAST 30 DAYS.	85
XIII. MULTIVARIATE NESTED LOGISTIC REGRESSION MODEL: POSITIVE FAST SCREENING FOR ALCOHOL MISUSE	87
XIV. MULTIVARIATE NESTED LOGISTIC REGRESSION MODEL: LIFETIME INTRAVENOUS DRUG USE	89
XV. MULTIVARIATE NESTED LOGISTIC REGRESSION MODEL: MORE THAN ONE SEXUAL PARTNER IN PAST 30 DAYS	91

LIST OF TABLES (continued)

<u>TABLE</u>	<u>PAGE</u>
XVI. MULTIVARIATE NESTED NEGATIVE BINOMIAL REGRESSION MODEL: SEX WITHOUT A CONDOM IN PAST 30 DAYS	94
XVII. MULTIVARIATE NESTED NEGATIVE BINOMIAL REGRESSION MODEL: SEX WHILE DRUNK OR HIGH IN PAST 30 DAYS	96
XVIII. MULTIVARIATE NESTED LOGISTIC REGRESSION MODEL: LIFETIME SEX EXCHANGE.....	98
XIX. MULTIVARIATE NESTED NEGATIVE BINOMIAL REGRESSION MODEL: COMPOSITE MEASURE OF RECENT RISK.....	101

LIST OF FIGURES

<u>FIGURE</u>		<u>PAGE</u>
1.	Hypothesized relationships among individual-level characteristics, prior homelessness, rent burden, and HIV risk behaviors for SRO residents	10
2.	Study recruitment and participation rates by recruitment method	55

LIST OF ABBREVIATIONS

AUDIT	Alcohol Use Disorders Identification Test
CDC	Centers for Disease Control and Prevention
COIP	Community Outreach Intervention Projects
FAST	Fast Alcohol Screening Test
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
HUD	U.S. Department of Housing and Urban Development
IDU	Injection Drug User
IRB	Institutional Review Board
MSM	Men who have Sex with Men
PI	Principal Investigator
RA	Research Assistant
RBA	Risk Behavior Assessment
RFBC	Residential Follow-Back Calendar
SRL	Survey Research Laboratory
SRO	Single Room Occupancy

SUMMARY

Research indicates that homeless and unstably housed individuals are at a higher risk for contracting HIV than their stably housed counterparts (Beijer, Wolf, & Fazel, 2012). However, definitions of homelessness have varied considerably in the literature, and little is known about how different types of housing conditions, along with individual characteristics, may influence HIV risk (Aidala & Sumartojo, 2007). Informed by a risk environment perspective, this study assessed the risk behaviors of a sample of adults living in single room occupancy (SRO) buildings and examined the relationship between HIV risk and two dimensions of housing for this population, prior homelessness and rent burden (the proportion of income a person pays in rent).

The study tested two hypotheses. Past research (e.g. Jenness et al., 2011; Riley et al., 2007; Stein, Nyamathi, & Zane, 2009) has documented associations between various indicators of prior homelessness and drug and sex-related HIV risk behaviors. This study assessed multiple retrospective indicators of homelessness among SRO residents—including number of lifetime homeless episodes, proportion of the lifetime spent homeless, and homelessness in the past 12 months—in order to test the hypothesis that prior homelessness would be associated with greater likelihood of engaging in HIV risk behaviors. The study also examined rent burden as an economic facet of housing. Based on a qualitative research study that found a relationship between rental housing affordability and HIV risk among low-income adults (Dickson-Gomez et al., 2009), the study hypothesized that higher rent burdens will be associated with elevated HIV risk for SRO residents.

The hypotheses were tested using a cross-sectional survey design. A venue-based sampling approach was used to recruit the sample from 10 privately owned SRO buildings in the

Uptown neighborhood of Chicago. Participants were recruited primarily in person at the SROs in the sampling frame and referred to an Uptown satellite office of Community Outreach Intervention Projects (COIP), a community service and research program based out of the University of Illinois at Chicago's School of Public Health. Study survey interviews were conducted at COIP or, for one SRO, at an on-site private conference room. The interviewer-administered survey instrument was constructed using questions from surveys used in previous studies combined with some original questions; it was pilot-tested with four SRO residents and refined before being used for final data collection. A total of 172 participants completed the survey interview and 163 cases were retained for the analyses after applying quality control procedures to the sample.

The study's main independent variables were prior homelessness and rent burden. Seven categories of HIV risk behavior constituted the study's dependent variables: illicit drug and alcohol use, injection drug use and needle/equipment sharing, number of sexual partners, sex acts without a condom, sex acts while drunk or high, sex exchange, and a composite measure of recent risk based on totaling dichotomous indicators of these risk categories. Control variables included individual-level characteristics related to risk, such as sex, race, age, HIV status, serious mental illness, and criminal justice history.

Multiple indicators were used to measure many of the variables. For example, two measures of rent burden were calculated, one based on legitimate income only and the other based on both legitimate income and income gained through under-the-table and illicit sources. Bivariate analyses were conducted to identify indicators of the independent, dependent, and control variables to be used in the multivariate models. The hypotheses were then tested using multivariate regression modeling. Being homeless in the past 12 months was selected as the

indicator of prior homelessness for the multivariate analyses and rent burden was represented by a categorical variable that distinguished participants who received full rental subsidies and had no rent burden, moderate rent burdens of 1 to 50%, and high rent burdens of greater than 50%. The multivariate analyses were run using the measure of rent burden based on the legitimate income only as well as the comprehensive measure to see if there were any differences; as few differences were noted, the results were reported using the measure based on legitimate income.

The multivariate analyses indicated that prior homelessness and rent burden were associated with some HIV risk behaviors when controlling for the other variables in the models. Participants who had been homeless in the past 12 months were significantly more likely to report illicit drug use other than marijuana in the past 30 days, lifetime injection drug use, having sex while drunk or high in the past 30 days, and a greater number of total risk behaviors as measured by the composite measure of recent risk. These outcomes support the hypothesis that prior homelessness is associated with greater HIV risk among SRO residents. The hypothesis that higher rent burdens would be associated with greater HIV risk was not supported by this study. In contrast, participants in the no rent burden category were more likely than participants who had moderate or high rent burdens to engage in some HIV risk behaviors, including using illicit drugs other than marijuana, having more than one sexual partner in the past 30 days, and having sex without a condom. Though there are several limitations to consider in interpreting these findings, the study has important implications for research on the relationship between housing context and HIV risk, theory-building in terms of the application of the risk environment framework to housing environments, and social policy and social work practice regarding the role of SRO housing, rent subsidies, and service provision in addressing both homelessness and HIV/AIDS.

I. INTRODUCTION

A. Background

1. General Background and Purpose

Compared with the general population, HIV prevalence rates are higher among individuals who are homeless or unstably housed. For example, Robertson et al. (2004) found an HIV prevalence of 10.5% in a sample of San Francisco adults who were homeless or staying in low-cost hotels, which is about five times the prevalence rate of San Francisco's adult general population. The role that housing plays as a structural factor affecting HIV risk is increasingly warranting attention in HIV prevention research. Using a range of research designs, recent studies have documented significant relationships between indicators of housing instability and risk behaviors such as needle sharing, exchanging sex for money, and number of sexual partners (Corneil et al., 2006; Elifson, Sterk, & Theall, 2007; Neaigus et al., 2013; Neblett, Davey-Rothwell, Chander, & Latkin, 2011; Weir, Bard, O'Brien, Casciato, & Stark, 2007).

Housing instability is a multidimensional phenomenon that includes people living in a variety of conditions. Though researchers acknowledge that housing and homelessness are fluid and people move frequently among places such as shelters, the street, institutions, hotels, and other locations, little is known about how health and risk behaviors may vary among people in these different conditions (Aidala & Sumartojo, 2007; Robertson et al., 2004). This dissertation study contributes to addressing this gap in knowledge by examining the HIV risk behaviors of adults living in one housing condition, single room occupancy (SRO) dwellings. The study helps to elucidate the relationship between housing conditions, financial resources, and HIV risk by exploring if HIV risk is linked with SRO residents' prior housing instability and rent burden (a measure of housing affordability).

2. Background on SRO Buildings as an Urban Housing Option

Though low-rent SRO hotels and rooming houses have long been a part of the U.S. housing milieu, these buildings and their residents have often been misunderstood in policy, research, and public discourse—or not seen at all. Compared with the high visibility of street homelessness, SRO living is a much less perceptible phenomenon, to the extent that much of the public is either not aware of it or assumes that residents share the same backgrounds and lifestyles as those who live on the street (Butzen, 1996; Groth, 1994). In her memoir *The Last Resort: Scenes from a Transient Hotel*, former SRO resident Aggie Max describes this sense of invisibility:

If I try to talk to them, they will not hear what I say, because I am unreal to them. They see an image. To be recognized in my role I must ask for spare change or a cigarette, or spout obscenities, or exhort about Jesus, and thus become classifiable. What I really want to do is explain how I came to be in this uncomfortable and inconvenient position, but that would take years. I'm sure that all the Real People out there would much rather just give me a quarter or a cigarette. (Max, 1997, p. 54)

The invisibility of this housing option belies its long history and considerable popularity. In cities such as Chicago, New York, and San Francisco, SRO buildings have provided basic shelter to a diverse clientele including newly arrived immigrants, single laborers, and unemployed “transients” since at least the late 1800s (Groth, 1994; Hoch & Slayton, 1989). Groth also notes that as of 1990, nationwide more Americans lived in hotels—including many of the SRO type—than in all public housing projects. Additionally, the more recent economic recession has resulted in hotel living becoming a “last resort for shelter” for increasing numbers of struggling individuals and families (Lewinson, 2010, p. 180).

Despite an ongoing need for affordable housing in most cities, since the urban renewal era of the 1960s SRO buildings have been frequent targets for demolition or conversion, often to make way for more lucrative forms of development. Housing advocates linked the rise in street homelessness in the 1980s with the rapid destruction of SROs (Butzen, 1996; Groth, 1994). In Chicago, the SRO stock has dropped from 35,000 units in the mid-1900s to fewer than 15,000 by the mid-1990s (Butzen, 1996). As the SRO stock declined nationwide, opponents of this housing option derided SRO hotels as “welfare hotels” or even “refugee camps for the American poor” (Groth, 1994, p. 10). In a culture in which identity and status are strongly associated with property ownership, residential address, and material accumulation, the minimalist existence afforded by SRO hotels is a highly stigmatized way of living (Klinenberg, 2012; Takahashi, 1998). Yet in Chicago and elsewhere, SROs continue to provide shelter to a population of thousands of adults considered “hard to house,” due to lack of financial resources and other barriers (Gurstein & Small, 2005; Hoch & Slayton, 1989).

Many housing advocates have argued fiercely for the preservation of SROs, and have called for funding to improve the aging physical structures of the buildings as well as for the provision of onsite social services (Evans & Strathdee, 2006; Groth, 1994; Merrifield, 2002). The U.S. Department of Housing and Urban Development (HUD) currently administers an SRO grant program through a provision in the McKinney-Vento Homeless Assistance Act, designed to increase the SRO supply by subsidizing rents for low-income tenants and compensating owners for partial rehabilitation costs (HUD, n.d.). Since SROs and their residents have rarely been the focus of systematic empirical research, further efforts are needed to better understand the housing, health, economic, and social needs and contexts of SRO residents, and how these characteristics may vary from those who are homeless on the street (Hwang et al., 2011).

B. Conceptual Framework

At a broad level, this study was informed by scholarship and theoretical developments in the fields of social work and public health examining the social determinants of health. These perspectives represent elaborations of the ecosystemic paradigm widely utilized in social work education, practice, and research (Ungar, 2002). The ecosystemic paradigm emphasizes the importance of transactions between people and the different systems with which they interact in understanding human behavior (Mattaini, 2008). In particular, social-geographic perspectives on health and previous research exploring place-based health disparities informed this study's focus on the relationship between residential environments and HIV risk. Within this broader body of work, the study is informed by the risk environment framework (Rhodes, 2002; Rhodes, Singer, Bourgois, Friedman, & Strathdee, 2005), which elaborates the mechanisms and levels of influence through which different environmental conditions affect HIV risk.

1. Social Determinants of Health and Health Disparities

Although researchers and health care providers have observed for centuries the link between disease and factors such as socioeconomic status, it was not until the 1970s that a broad paradigm shift occurred in public health, highlighting the role of social influences in health and disease patterns (Berkman & Kawachi, 2000; Braveman, Egerter, & Williams, 2011; Krieger, 1994). Research on the social determinants of health soon illuminated disparities in many health outcomes, on the basis of factors such as income, education, gender, race, sexual orientation, and the intersections among these factors. The association between lower socioeconomic status and poorer health appears to be particularly strong, having been widely documented with regard to numerous health conditions as well as to overall mortality and life expectancy (Link & Phelan, 1995).

More recently, researchers have acknowledged that many disparities have a geographic component, in addition to being associated with identity characteristics such as sex and race. This research has centered attention on environmental context at multiple levels, revealing the associations between health and place. Many studies have been conducted at the neighborhood level, using aggregated data to show geographic variations in overall mortality and disease prevalence rates (Kawachi & Berkman, 2003; Williams & Latkin, 2007). Although some of this variation is likely due to compositional effects—the fact that people who share certain characteristics such as race or income level tend to live near one another—research indicates that many disparities are not due to composition alone. Drawing on research in a variety of health areas, Macintyre and Ellaway (2003) state that the contextual features of different places—such as land use patterns, housing options, policing strategies, and local employment opportunities—likely explain some of the geographic differences in health. Furthermore, multilevel analyses have shown that some health disparities previously attributed to identity characteristics like race are partially explained by geographic factors, such as neighborhood context (Do et al., 2008).

Research on substance abuse and HIV/AIDS in the United States has generally been slower in adopting this paradigm shift and exploring geographical influences on drug use and HIV risk behaviors. Many of the theoretical frameworks used to conceptualize HIV risk, such as the health belief model (Rosenstock, Strecher, & Becker, 1994), the AIDS risk reduction model (Catania, Kegeles, & Coates, 1990), and the theory of reasoned action (Fishbein, 1990), focus primarily on intrapersonal-level constructs, with less attention given to social and environmental factors. In both research and intervention programs, substance use and HIV risk behaviors such as sharing a needle or having sex without a condom have often been framed primarily as individual choices (Galea, Ahern, & Vlahov, 2003; Trickett, 2005).

However, studies that have looked beyond individuals have identified important contextual influences on risk behaviors. Several studies have documented differences in HIV prevalence, drug use, and drug-related mortality at the neighborhood level, and have examined potential environmental drivers of these differences (Hannon & Cuddy, 2006; Valdez & Cepeda, 2008; Wallace, 1988; Williams & Latkin, 2007). For example, Hannon and Cuddy (2006) found that the prevalence of boarded-up buildings in New York City neighborhoods was associated with increased drug-related mortality, controlling for factors such as neighborhood poverty. Researchers including Fullilove (2003) suggested that land use patterns and specifically boarded-up buildings could be associated with HIV transmission because such buildings often turn into shooting galleries and crack houses, spaces where high-risk behaviors occur.

The limits of individually focused models of risk and the growing body of research on health geography suggest that a shift in emphasis from *high-risk populations* to *risk environments* is needed in research on substance use and HIV/AIDS. Sociologist Tim Rhodes and colleagues have proposed a multilevel risk environment framework that incorporates the political, social, and economic context of HIV risk behaviors, focusing on the risks and contextual factors related to drug use (Rhodes, 2002; Rhodes et al., 2005). The risk environment framework informed this study's focus on the relationship between housing conditions and HIV risk and specifically the conceptualization of prior homelessness and rent burden as environmental factors that may predict HIV risk.

2. Background on the Risk Environment Framework

Rhodes (2002) developed the risk environment framework to extend theorizing on risk production and strategies for risk reduction beyond the individual. The framework conceptualizes risk as socially produced in the interactions between people and their

environments, and defines risk environments as “the space—whether social or physical—in which a variety of factors exogenous to the individual interact to increase the chances of HIV transmission” (Rhodes et al., 2005, p. 1027). Risk environments have different levels of influence, described as macro, meso, and micro environments (Rhodes et al., 2005).

At the broadest level, macro environments contain laws, policies, and widespread cultural practices that influence risk behaviors. These might include incarceration policies and entrenched socioeconomic inequalities that affect vulnerability to disease and access to care. Meso environments incorporate group norms and neighborhood-level influences, such as the acceptability of drug use in a person’s social network or the availability of drugs in a particular area. Micro environments are the physical and social spaces in which risk behaviors occur. Research on HIV risk in micro environments has included the study of brothels, crack houses, bath houses, and shooting galleries, which are abandoned buildings or other locations where people gather to inject drugs (Latkin & Knowlton, 2005). Examining how HIV risk is associated with residential environments such as SROs is a less common application of this concept.

At each of these levels of influence, risk environments operate through different physical, social, economic, and policy facets that influence risk (Rhodes, 2002). Physical facets incorporate aspects of the built environment, such as land use patterns at the neighborhood level or the design of physical space in micro environments like brothels, shelters, and homes. Social facets include the social relationships and norms engendered by different environments. Economic facets link aggregated indicators, such as neighborhood disadvantage, as well as individual socioeconomic status with risk. Policy facets range from national, state, and local laws to policies affecting specific spaces, such as a shelter’s policies regarding possession of drug

paraphernalia. The facets and levels of risk environments are not independent or mutually exclusive, but rather are in constant interaction (Rhodes et al., 2005).

3. Application of the Risk Environment Framework to the Study

This study conceptualizes SRO housing and homelessness as micro environments that may be linked with HIV risk in different ways. By inquiring about SRO residents' prior histories of street homelessness (e.g. sleeping in places not meant for human habitation or in overnight shelters), this study examined homelessness as a risk environment that may continue to be associated with HIV risk even as people enter SRO housing. Since risk is produced in the interactions between individuals and their environments, analyses of risk environments should control for relevant individual-level characteristics. These might include age, sex, race, HIV status, mental illness, and criminal justice history.

This study also examined the HIV risk influence of a specific economic facet of SRO housing, rent burden. Rent burden is an indicator of housing affordability, representing the ratio between one's income and what one pays in rent. Generally, rent burdens of 30% or less are considered affordable (Hulchanski, 1995). The selection of rent burden as an economic mechanism that may be linked with HIV risk is informed by qualitative research by Dickson-Gomez et al. (2009), which found that low-income drug users who were housed but had high rent burdens tended to engage in more risk behaviors. Many felt hopeless about being able to continue to pay rent and subsequently used more drugs, assuming that eviction was inevitable. Other studies have indicated relationships between economic factors related to rent burden and sexual risk behaviors. For example, studies of homeless and marginally housed adults (including SRO residents) found that those with greater food insecurity were more likely to report unprotected sex or sex with multiple partners (Vogenthaler et al., 2013), while receiving cash

benefits has been associated with reduced likelihood of trading sex for money (Riley, Moss, Clark, Monk, & Bangsberg, 2005). This study examined if a relationship between increased rent burden and higher HIV risk existed for people living in SRO units.

4. Research Questions and Conceptual Model

The study explored two main research questions:

- A.** To what extent have SRO residents experienced homelessness in their lifetimes, and how is prior homelessness related to current HIV risk behaviors?
- B.** What is the range of rent burdens among SRO residents, and how is rent burden associated with HIV risk for this population?

The hypothesized relationships among the study variables are illustrated in the conceptual model in Figure 1. The SRO building is a micro risk environment, embedded within meso and macro environments (which may influence the risk context, but are not the focus of this study). Within the SRO environment, the first independent variable, prior homelessness, is a retrospective indicator of the risk environment of street homelessness. The second independent variable, rent burden, is a continuous measure representing an economic mechanism that may be related to HIV risk within the SRO environment.

Individual characteristics are outlined on the left side of the model. Characteristics relevant to HIV risk include sex, race, age, HIV status, serious mental illness (such as major depression, bipolar disorder, or schizophrenia), and criminal justice history. These characteristics serve as control variables in the analyses. On the far right side of the model, six main HIV risk behavior categories serve as the dependent variables: illicit drug and alcohol use, injection drug use and needle/equipment sharing, number of sexual partners, sex acts without a condom, sex acts while drunk or high, and exchange of sex for money, drugs, or shelter.

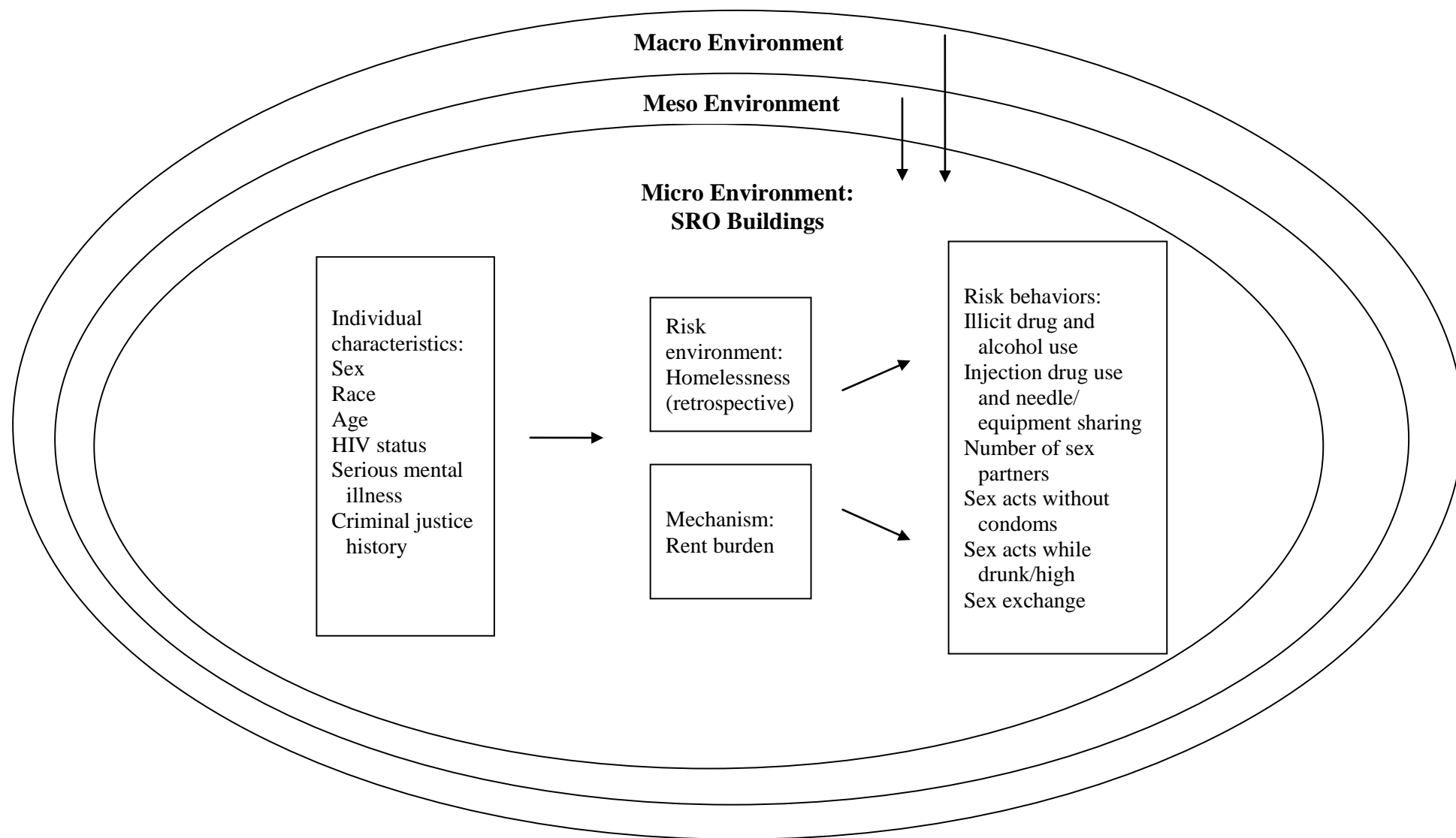


Figure 1. Hypothesized relationships among individual-level characteristics, prior homelessness, rent burden, and HIV risk behaviors for SRO residents. Factors at the meso level (i.e. neighborhood characteristics) and the macro level (i.e. laws and policies related to homelessness and drug use) also influence HIV risk, though these factors are not the focus of this study.

C. Hypotheses

Informed by the conceptual model and past research, the study tested two hypotheses:

1. Among SRO residents, prior street homelessness will be associated with increased HIV risk behavior, when controlling for individual-level characteristics.
2. Among SRO residents, higher rent burdens will be associated with increased HIV risk behavior, when controlling for individual-level characteristics.

II. LITERATURE REVIEW

A critical review of the literature was conducted in order to understand the current state of knowledge on the relationship between housing conditions and HIV risk and establish a foundation for this study. The review began with a search using multiple terms (including “HIV risk” and “housing,” “homeless,” “SRO,” “hotel,” or “rent burden”) in the WORLDCAT, JSTOR, Academic Search Premier, Summon, and Web of Science electronic databases. Studies that compared HIV risk behaviors between participants in different housing conditions, utilized retrospective housing indicators or rent burden as predictors of HIV risk, and/or examined the HIV risk behaviors of SRO residents were included in this review. Bibliographies of the articles yielded by the initial search were reviewed for additional references.

In this chapter, several facets of this literature are reviewed. First, the literature is analyzed in terms of the dependent variables, reviewing associations between housing conditions and HIV risk behaviors. Methodological concerns limiting the ability to make causal inferences from these associations are discussed. Next, the research is reviewed in terms of the varying definitions of homelessness and housing conditions that have been used. Studies that focused specifically on SRO environments are highlighted. Other studies that have examined prior homelessness and rent burden as dimensions of housing relevant to health are reviewed. Lastly, findings related to the study’s control variables are summarized.

A. Relationship Between Housing Conditions and Sex and Drug-Related Risk Behaviors

The housing and HIV risk literature has documented statistically significant relationships between housing conditions and multiple types of HIV risk behaviors. Several studies have examined sexual risks, for example finding that homelessness or housing instability was associated with increased likelihood of heterosexual women having multiple sex partners or

unprotected sex (Neblett et al., 2011; Ober et al., 2011; Wechsberg et al., 2003; Wenzel, Tucker, Elliott, & Hambarsoomians, 2007), young male drug users having unprotected sex (Mackesy-Amiti, Boodram, Williams, Ouellet, & Broz, 2013), and young men who have sex with men (MSM) having unprotected anal intercourse (Halkitis et al., 2013). One of the most common findings documented in the literature is an association between housing instability and exchanging sex for money, drugs, or shelter, which has been documented in populations including low-income adults living in poor urban areas (Grieb, Davey-Rothwell, & Latkin, 2013; Jenness et al., 2011; Riley et al., 2007), street youth (Mehrabadi et al., 2008; Roy et al., 2011), male and female injection drug users (IDUs) (Andia et al., 2001; Coady et al., 2007; Corneil et al., 2004; German, Davey, & Latkin, 2007), female drug users (Brown, Cavanaugh, Penniman, & Latimer, 2012; Rudolph, Linton, Dyer, & Latkin, 2013), and HIV positive men and women (Aidala, Cross, Stall, Harre, & Sumartojo, 2005; Aidala, Lee, Garbers, & Chiasson, 2006). One study of female sex workers found that homelessness was associated with elevated HIV risk in terms of providing services to a higher number of clients (Duff, Deering, Gibson, Tyndall, & Shannon, 2011), though another study of this population noted that homelessness among female sex workers was not related to the likelihood of having unprotected vaginal sex (Surratt, Kurtz, Chen, & Mooss, 2012).

Many studies have focused on drug-related HIV risk behaviors, particularly injection drug use. In some studies using samples not limited to IDUs, homelessness or unstable housing was associated with increased incidence of drug injecting (Aidala et al., 2005; Elifson et al., 2007; Shannon, Ishida, Lai, & Tyndall, 2006). Homelessness was also associated with increased likelihood of sharing syringes, in both IDU samples (Des Jarlais, Braine, & Freedman, 2007; German et al., 2007; Reyes et al., 2005; Salazar et al., 2007; Wagner, Simon-Freeman, &

Bluthenthal, 2013) and more general samples (Weir et al., 2007). Longitudinal studies of IDUs found that homelessness was associated with reduced likelihood of injection cessation (Mackesy-Amity et al., 2011) or a shorter time to relapse after initial cessation (Shah, Galai, Celentano, Vlahov, & Strathdee, 2006). One study noted that homelessness among IDUs increased the likelihood of participants engaging in “dual risk” for HIV—receptive needle sharing and unprotected sex (Neaigus et al., 2013).

Beyond the risk of transmission through needle sharing among IDUs, substance use more broadly is a critical aspect of the HIV risk context, since the abuse of alcohol and many illicit substances is associated with sexual risk behaviors, poor viral suppression in those already infected with HIV, and susceptibility to other sexually transmitted infections and hepatitis C infection (Bryant, 2006; Friedman et al., 2009). Substance-related outcomes associated with housing conditions include frequency or likelihood of any illicit drug use (Dickson-Gomez et al., 2009; Elifson et al., 2007; Riley et al., 2007; Royse et al., 2000; Weir et al., 2007; Zeleny et al., 2013) and likelihood of using drugs in shooting galleries or crack houses (Coady et al., 2007; Elifson et al., 2007; German et al., 2007; Metraux, Metzger, & Culhane, 2004; Rachlis, Wood, Zhang, Montaner, & Kerr, 2009). Though many studies focus on illicit drug use, some (e.g. Eyrich-Garg, O’Leary, & Cottler, 2008; Royse et al., 2000; Shannon et al., 2006) have also found associations between increased alcohol consumption, unstable housing, and HIV risk.

Although the consistency of findings across studies supports the existence of an association between housing conditions and HIV risk, it should be noted that the internal validity of the majority of the studies is limited by their use of cross-sectional designs. The evidence base for this association is strengthened by a small number of studies employing longitudinal designs, which demonstrated that changes in housing status were associated with subsequent changes in

HIV risk behaviors (e.g. Aidala et al., 2005, 2006; Duff et al., 2011; Grieb et al., 2013; Metraux et al., 2004; Roy et al., 2011; Solorio et al., 2008; Weir et al., 2007). This review of the literature identified one study that used a randomized controlled trial design. Wolitski et al. (2010) randomly assigned homeless HIV positive individuals to subsidized housing or standard case management services to determine the impact of housing on the health outcomes and risk behaviors of people living with HIV. Being assigned to the subsidized housing condition did not appear to affect sexual risk behaviors (drug-related outcomes were not reported), though findings were limited given that many of the participants in the control group were able to locate housing on their own over the course of the study. In sum, though the studies located in this review provide a solid basis for documenting a relationship between housing and HIV risk, further research is needed to establish if there is a causal relationship between homelessness/unstable housing and HIV risk, and to examine how specific housing conditions, including SRO living, and various facets of residential environments may be linked with risk.

B. Definitions of Housing Conditions in the Housing and HIV Risk Literature

The literature encompasses a large span of operational definitions of housing conditions, including subjective dimensions, categorical dimensions, and occasionally other dimensions such as transience. Studies using subjective definitions (e.g. Mackesy-Amiti et al., 2013; Salazar, 2007; Wagner et al., 2013) have compared participants on the basis of whether they consider themselves to be homeless. For example, Mackesy-Amiti et al. (2013) used a subjective measure of homelessness based on participants' response to the question, "Was there a time during the last 6 months when you considered yourself homeless?" (p. 2461).

Studies employing categorical definitions make comparisons by classifying participants' self-reported living situations into pre-established categories. Although many studies made

dichotomous distinctions between participants in “unstable” and “stable” housing (e.g. Corneil et al., 2004; Halkitis et al., 2013), others expanded the number of categories. Studies such as Marshall et al. (2009) and Reyes et al. (2005) each used three categories, distinguishing “literal” homelessness from transitional or unstable housing as well as stable housing. Dickson-Gomez, McAuliffe, Convey, Weeks, and Owczarzak (2011) began with 12 categories but collapsed them into four for the analyses, including homelessness, unstable housing, stable housing, and supportive housing. Andia et al. (2001) and Metraux et al. (2004) each used five categories. Both considered staying in SRO units or other hotels to be its own category, called temporary housing.

In perhaps the most rigorous approach, Weir et al. (2007) compared multiple measures of housing. Using subjective, categorical, and transience indicators, the authors found that relationships between housing indicators and HIV risk behaviors varied according to which measure was used. A categorical definition of homelessness, subjective housing instability, having more than one move in the past six months, and having unmet housing needs were significantly associated with different sex and drug-related risk behaviors to varying degrees. A few other studies were located that also associated transience indicators (e.g. number of residential moves in a given period of time) with risk behaviors such as sharing needles (German et al., 2007) and having multiple sexual partners (Grieb et al., 2013). In summary, operational definitions of housing conditions vary considerably within the literature, incorporating categorical, subjective, and transience dimensions of the housing experience. SRO dwellings constitute one housing category that has not been adequately addressed in the current literature.

C. Inclusion of SRO Dwellings in the Housing and HIV Risk Literature

The experience of living in SRO buildings is an under-researched phenomenon. Most of the studies discussed in this review either combined people living in SROs with people living on

the street or in other places not meant for human habitation in broad classifications of homelessness or unstable housing (e.g. Aidala et al., 2005, 2006; Dickson-Gomez et al., 2011; Elifson et al., 2007; Jenness et al., 2011; Wenzel et al., 2007) or did not explicitly include people in SROs in their operational definitions of housing and homelessness (e.g. Brown et al., 2012; Grieb et al., 2013; Reyes et al., 2005; Salazar et al., 2007; Shah et al., 2006). Notably, two studies of Canadian street-involved youth (Marshall et al., 2009; Rachlis et al., 2009) categorized people living in SROs in a “housed” category that also included stable housing in a house or apartment, in comparison with youth living on the street or a shelter.

Only three studies were located that directly compared the HIV risk behaviors of SRO residents with people in other housing conditions. The earliest study, Andia et al. (2001), analyzed HIV risk behaviors among Puerto Rican IDUs in New York and Puerto Rico. In a logistic regression in which stable housing was the reference category, both homelessness ($OR = 2.42, p < .001$) and SRO housing ($OR = 2.64, p < .001$) were associated with increased likelihood of sharing drug paraphernalia. This study included only 61 participants living in SRO hotels; 134 participants were considered homeless, while 235 lived in their own or their parents’ homes.

Metraux et al. (2004) included residents of SROs and other hotels in a “temporary housing” category in their longitudinal analysis of a cohort of 401 Philadelphia area IDUs. During the eight year study period, 16% of the sample experienced homelessness and 40% reported living in a hotel for at least part of the duration of the study. Homelessness was associated only with shooting gallery use ($OR = 2.05, p = .02$), while hotel living was not significantly associated with HIV risk. Attrition was a potential confounding factor, with approximately one-third of the study lost to follow-up before the final data collection wave.

The third study, Shannon et al. (2006), directly addressed the research question of how the risk behaviors of SRO residents compare with those in stable housing. Reporting on baseline data from a cohort study of residents of Vancouver's Downtown Eastside neighborhood, the authors reported that 61% of the 2,985 participants were living in SRO hotels. Compared with 760 participants in stable housing in a house or apartment, recent injection drug use, crack cocaine smoking, and HIV positive status were all associated with SRO residence.

These three studies illuminate some important findings on the relationship between SRO living and HIV risk. Although Andia et al. (2001) found an association only between SRO housing and sharing drug paraphernalia and Metraux et al. (2004) failed to uncover any significant relationships between SRO housing and HIV risk behaviors, these studies may have been limited by low statistical power and attrition. Using a large sample, Shannon et al. (2006) found that SRO housing was associated with increased likelihood of drug injecting and other types of drug use, suggesting that SROs constitute an environment associated with elevated HIV risk when compared with more stable housing in a home or apartment. Since all of these studies used people in stable housing as the reference group, it is less clear how the residential histories and risk behaviors of SRO residents may or may not vary from individuals considered homeless.

Other studies have examined health and risk-related outcomes among SRO residents, though not in direct comparison to participants in differing types of housing. For example, one qualitative study used the risk environment framework to analyze the experiences of female sex workers in Vancouver who were unstably housed, including many living in SROs (Lazarus, Chettiar, Deering, Nabess, & Shannon, 2011). This study found that aspects of SROs such as curfews, restrictions on guests, and general unsanitary conditions limited sex workers' ability to stay healthy and reduce their HIV risk.

A few studies have focused on HIV positive SRO residents in New York City, where SROs serve as transitional housing sites for HIV positive homeless people through a Department of Welfare-administered program (Cunningham, Sohler, McCoy, Heller, & Selwyn, 2005). These studies have examined outcomes including access to general and specialized HIV care (Cunningham et al., 2005), substance use patterns (Cunningham, Sohler, Berg, Shapiro, & Heller, 2006), and experiences of discrimination (Sohler, Li, & Cunningham, 2007). While helping to clarify some of the risk and behavior patterns of the SRO-residing population, little is known about SRO residents outside of this particular context, including SRO residents' prior experiences with homelessness, financial resources, rent burdens, and how these characteristics may be associated with HIV risk. The current study sought to collect and analyze data on these characteristics from a sample of SRO residents in Chicago, where most SROs are independent, privately managed entities (Single Room Housing Assistance Corporation, n.d.).

D. Research on Prior Homelessness as a Predictor of Health and Risk

Many studies on housing and HIV risk have included indicators of prior homelessness in their analyses. For example, several studies located in this review categorized participants as homeless if they had been homeless at any point over a set period of time, such as the past 12 months (e.g. Jenness et al., 2011; Riley et al., 2007) or past six months (e.g. Brown et al., 2012; Neblett et al., 2011). In these studies, past homelessness was generally the only housing indicator, such that participants' current housing might have encompassed a range of living situations (e.g. still homeless, obtained housing, etc.) that were not incorporated in the analyses.

A few studies that had samples composed entirely of currently homeless individuals employed other measures of prior homelessness. Stein et al. (2009) created a "severity of homelessness" variable based on the number of times a person had been homeless and the

proportion of a participant's lifetime spent as homeless. Within a sample of currently homeless men, this variable was directly associated with increased sexual risk behavior and injection drug use. In addition, Stein and Nyamathi (2004) found that among homeless men, participants who had been homeless longer and had more lifetime homeless episodes were more likely to be diagnosed with hepatitis C infection and report sharing needles. In a study of homeless youth, the number of lifetime homeless episodes and length of the current episode were associated with injection drug use and sexual risk behaviors (Ennett, Federman, Bailey, Ringwalt, & Hubbard, 1999). However, another study of homeless youth found that being homeless for two years or more was not a significant predictor of risky sexual behavior (Rice, Barman-Adhikari, Milburn, & Monro, 2012). Further, in Kennedy, Wenzel, Brown, Tucker, and Golinelli's (2013) study of homeless men, neither number of days spent homeless in the past six months nor months spent homeless in the lifetime was associated with the dependent variable of having unprotected sex.

In sum, studies have employed a range of indicators of prior homelessness, some of which have been associated with drug and sex-related HIV risk behaviors in different populations. None of the studies located in this review examined prior homelessness specifically in current SRO residents. One of the purposes of the current study was to address this gap by measuring SRO residents' histories of prior homelessness through multiple indicators and examining their potential association with HIV risk.

E. Research on Rent Burden as a Predictor of Health and Risk

Most research on housing and HIV risk has neglected rent burden as a dimension of housing that may be associated with HIV risk behavior. The only study located by this review that directly examined rent and housing affordability was Dickson-Gomez et al. (2009). This qualitative study found that among housed drug users, those who lived in unsubsidized housing

and had higher rents engaged in more drug use (mainly cocaine and heroin), compared with residents of subsidized housing, whose rent burdens were lower. The findings indicated that some residents with higher rents felt less motivated to control their drug use because they did not feel confident they could continue to pay rent and stay in their housing long-term.

Very little is known about rent burden and its possible link with HIV risk behaviors for SRO residents. HUD's monthly fair market rent value for SRO units in the Chicago metropolitan area was \$545 for fiscal year 2014 (HUD, 2013). The rental rate of SRO units—calculated on a daily, weekly, or monthly basis depending on the building and tenant—may pose a significant burden for low-income residents. Shannon et al. (2006) estimated that Vancouver SRO residents typically had a rent burden of 60% or greater. Testimony gathered in support of rent stabilization legislation for residential hotels in New York City noted an average rent burden of about 50% (New York City Rent Guidelines Board, 2010). The average rent burden of Chicago SRO residents is not known.

Although no studies have examined the relationship between rent burden and HIV risk for SRO residents, Riley et al. (2005) found that receiving cash benefits was associated with lower rates of behaviors such as injection drug use or trading sex for money in a San Francisco sample of homeless and marginally housed adults, including SRO residents. Cash benefits would presumably lower rent burdens. Another study of low-income women found that receiving government assistance as a primary income source reduced the likelihood of women exchanging sex for money (Davey-Rothwell, Linas, & Latkin, 2012). Though this study did not measure rent, it suggests that having a stable source of income from which to pay rent and other necessary expenses may be associated with lower rates of some HIV risk behaviors. Other studies have linked food insecurity among low-income adults with risk behaviors such as having unprotected

sex, having multiple sexual partners, trading sex for money, and having sex while drunk or high (Vogenthaler et al., 2013; Wang et al., 2013). Food insecurity and rent burden are often associated as low-income individuals struggle to meet both housing and food costs (Kirkpatrick & Tarasuk, 2011). The current study sought to add to the literature by directly assessing rent burden among SRO residents and exploring its association with HIV risk.

F. Control Variables and their Association with Housing and HIV Risk

The studies' two hypotheses were tested controlling for several variables that are often associated with housing conditions and/or HIV risk. These included demographic factors such as sex, race, and age; HIV status; serious mental illness; and criminal justice system involvement. Nearly all of the studies in this literature review included demographic variables and HIV status as controls in their analyses, or made these variables part of the study's inclusion criteria (i.e. studying only women or only HIV positive individuals). The selection of serious mental illness and criminal justice history as control variables was made on the basis of the salience of these factors to both HIV risk and housing stability. Research on the relationships between the controls, HIV risk behaviors, and housing is summarized below for each variable.

The selection of these variables was also informed by theorizing on the determinants of health and risk behaviors for homeless and unstably housed populations. For example, consistent with Rhodes' (2002) notion of a multifaceted risk environment, Galea and Vlahov (2002) identify incarceration and mental illness as aspects of the "social environment" that influence both housing and health-risk behaviors (p. S136). The control variables included in this study are certainly not exhaustive. Measurement of some factors identified in Rhodes' framework as well as in empirical research as influencing HIV risk, such as social norms regarding drug use and condom use, was beyond the scope of this study.

1. Demographic Variables

Sex, race, and age all appear to be related to both homelessness and HIV risk. Regarding sex, for a variety of reasons the prevalence of street homelessness, illicit drug use, and HIV/AIDS is significantly higher for men (Centers for Disease Control and Prevention [CDC], 2005; Dietz, 2007). Men are overrepresented in homeless populations, and SROs also tend to be primarily male, with an average male-female gender ratio of 70-30 nationwide (National Coalition for the Homeless, 2009).

The relationship between race and HIV risk is complex. HIV prevalence is disproportionately high in African American men and women, with especially high rates among young black MSM (CDC, 2005). Racial disparities in HIV prevalence are not explained solely by differences in risk behaviors; for example research indicates that black MSM engage in similar levels of drug and sex-related risk behaviors as white MSM (Oster et al., 2011). Thus, race is often included as a control variable in HIV risk research, though the mechanisms through which it is related to HIV risk are still being explored.

Age is generally a protective factor for drug use and other HIV risk behaviors. For example, Dietz (2007) found that homeless people younger than 50 had significantly higher odds of reporting a current drug problem. While the proportion of older people living with HIV has grown, about three-fourths of people living with HIV/AIDS in the United States are under age 50, and 85% of new HIV/AIDS cases are diagnosed in people under 50 (CDC, 2008).

2. HIV Status

Being HIV positive—or more specifically, *knowing* that one is HIV positive—may affect risk behaviors. People often change their behaviors to reduce risk after learning they are HIV positive (Marks, Crepaz, Senterfitt, & Janssen, 2005). Some studies in this review restricted their

samples to only HIV negative participants (e.g. Elifson et al., 2007; Mackesy-Amity et al., 2011; Neaigus, 2013; Weir et al., 2007) or HIV positive samples (Aidala et al., 2005, 2006; Wolitski et al., 2010; Zelenev et al., 2013). Among studies that did not use serostatus as a recruitment criterion, some found that HIV positive status was associated with decreased risk behaviors (Dickson-Gomez et al., 2011; Metraux et al., 2004; Ober et al., 2011; Salazar et al., 2007), while others found that HIV positive status was associated with increases in some risk behaviors and decreases in others (Shah et al., 2006; Smereck & Hockman, 1998). Some of the studies verified HIV status through serological testing (Metraux et al., 2004; Rudolph et al., 2013; Shah et al., 2006, Smereck & Hockman, 1998); others such as Dickson-Gomez et al. (2011) and Salazar et al. (2007) relied on participants' self reports of HIV status and test history.

3. Serious Mental Illness

Individuals with serious mental illness—such as schizophrenia, major depressive disorder, and/or bipolar disorder—often engage in higher levels of sex and drug-related risk behaviors, leading to elevated HIV prevalence. Epidemiological studies have reported HIV prevalence rates ranging from 4 to 23% for this population (Senn & Carey, 2008). The relationship between mental illness and HIV risk appears to be partially driven by high rates of co-occurring substance use disorders. One recent study of community mental health clinic clients who had been diagnosed with a serious mental illness and a substance use disorder found that 6% of the sample was HIV positive and 24% had a history of injection drug use, with more than 90% of the latter reporting needle sharing (Himelhoch et al., 2011). In addition, individuals with serious mental illness are more likely to experience homelessness and incarceration, further affecting the HIV risk context. Some of the studies in this literature review (e.g. Aidala et al., 2005; Surratt et al.,

2012; Zelenev et al., 2013) included serious mental illness as a control variable and noted its association with homelessness and/or increased HIV risk.

4. Criminal Justice History

Having a history of involvement in the criminal justice system, and specifically having experienced incarceration, is a risk factor for both HIV and housing instability. Transmission of HIV within prisons appears to be relatively rare for both men and women (Lichtenstein, 2009; Rich et al., 1999). However, recently incarcerated individuals have a high prevalence of engaging in illegal behaviors associated with HIV risk, such as drug use and exchanging sex for money (Lichtenstein, 2009). These risk behaviors are likely associated with structural barriers that many previously incarcerated people, and especially those with felony convictions, face in finding housing and employment upon their return to the community. In a large sample of homeless and unstably housed San Francisco adults, Weiser et al. (2009) observed very high rates of incarceration, with 71% of men and 21% of women reporting at least one overnight jail stay in the past year. Being homeless on the street was associated with increased likelihood of incarceration for men and women, while long-term SRO stays had a protective effect on incarceration for women but not for men. Further, Hudson et al. (2011) found that recent incarceration among homeless people was associated with several substance-related HIV risk behaviors, including heavy drug and alcohol use. Indicators of criminal justice system involvement were included as control variables in many of the studies located in this review, such as Halkitis et al. (2013) and Wagner et al. (2013).

G. Conclusions

Associations between housing conditions and drug and sex-related risk behaviors are well-documented across a number of studies. Although the internal validity of most of these

studies is limited by their use of cross-sectional designs, a few studies employing longitudinal designs (e.g. Aidala et al., 2005, 2006; Grieb et al., 2013; Weir et al., 2007) have reported links between changes in housing status and changes in HIV risk behaviors. Studies have used a range of operational definitions in specifying categories such as “homeless” or “unstably housed” for their analyses. Applying a risk environment framework to this research area suggests that both street homelessness and SRO housing pose different risks to their occupants. However, the majority of studies have either not included people in SROs in their comparison groups or have grouped homeless people and SRO residents in a single category, usually categorized as “unstably housed.” The current study aimed to address this gap by assessing the risk behaviors of a sample of SRO residents and examining if prior homelessness in this population was associated with HIV risk.

Furthermore, though rent burden has been under-explored in the literature, research by Dickson-Gomez et al. (2009) suggests that low-income tenants with higher rents may engage in more risk behaviors. This association may be driven by material reasons (e.g. exchanging sex for survival needs) as well as less tangible reasons related to hopelessness about the ability to continue to pay rent. One of the chief purposes of the current study was to contribute to the literature by examining if rent burden was related to drug and sex-related HIV risk behaviors for residents of SRO housing.

III. RESEARCH METHODOLOGY

A. Research Design and Method

A cross-sectional survey design was used to assess the HIV risk behaviors of SRO residents and to test the study's hypotheses that prior homelessness and higher rent burdens would be associated with increased levels of HIV risk behavior. The sample was obtained primarily through face-to-face recruitment methods at SROs in the Uptown area of Chicago. Data was collected from participants at one point in time. An interviewer-administered survey that was designed for the study but integrated questions from other established survey instruments was used to gather data on the study variables.

B. Sampling Procedures

1. Sampling Frame and Approach

The initial sampling frame consisted of adult men and women residing in privately owned, for-profit SRO buildings in Chicago. "SRO building" was defined as a building that rents out small rooms (typically less than 200 square feet), which may or may not have a private bathroom but do not have a kitchen or cooking facilities, to single individuals. Although many Chicago SROs are licensed as hotels, some operate as non-hotel SRO buildings, depending on number of units and length of residents' stays, per the Chicago Municipal Code (City of Chicago, 2004). Some SROs are owned privately and operated as for-profit businesses, while others are owned and operated by nonprofit organizations (e.g. the YMCA), which often provide on-site social services and rental subsidies depending on eligibility criteria pertaining to income, age, and disability. Since these buildings function more as permanent housing for those who meet the eligibility criteria, a decision was made to exclude these from the frame and focus only on private, for-profit SROs.

A list of Chicago SRO buildings was obtained from Lakeview Action Coalition (now known as ONE Northside since it merged with another organization), a community organization that conducts research and advocacy on a variety of issues, including affordable housing. The list contained 96 buildings, grouped by city ward. A decision was made to limit the frame by focusing on SROs in the Uptown neighborhood (Chicago's 46th Ward), a racially and economically diverse area that had the largest number of SROs on the list. Focusing on a single geographic area for sample recruitment reduced the possibility of neighborhood-level variations in demographics, housing patterns, and risk behaviors among participants. The Uptown neighborhood has long been recognized for its concentration of SRO buildings, particularly since concentrations in other areas like West Madison Avenue were largely destroyed decades ago in waves of urban renewal programming (Watson, 1992). Even in the midst of gentrification, the greater Uptown area remains home to a diverse population and housing stock (Conrad, 2012).

The list contained 15 buildings in the 46th Ward. Three additional buildings that fell in neighboring wards but are commonly considered to be part of Uptown were added to the frame, as well as one building that the researcher was aware of that had not been included on the original list. Five buildings listed that were owned and operated by nonprofit social service providers were excluded from the sampling frame, along with one building that did not meet the definition of an SRO, one building sold to developers who were in process of converting the units to luxury studios, and one building that was recently sold and in the process of closing. The final sampling frame included 11 buildings.

A nonrandom purposive approach was used to select the sample from the frame. The principal investigator (PI) approached management at the buildings in the frame and requested permission to verbally recruit potential subjects in public areas of these buildings (e.g. main

lobby) as well as leave flyers with information about the study. Initially, management at five buildings (Wilson Men's Hotel, Darlington Hotel, Bachelor Apartments, Glenn Apartments, Foswyn Arms Apartments) provided permission in the form of a letter of support to verbally recruit participants onsite or post flyers about the study. Management of one building, the Lawrence House, provided written permission to recruit residents for the study at a regularly scheduled community meeting. However, no community meetings occurred during the data collection period, due to the building being sold to a new owner, so the community meeting was not utilized as a recruitment opportunity. Midway through the data collection period, management at one SRO, the Lorali, provided permission to verbally recruit as well as interview participants onsite in a conference room at the building. Sample letters of support from SRO management are provided in Appendix A.

Participants were recruited through face-to-face recruitment at these sites. In addition, participants were recruited on the street or sidewalks directly outside of the other buildings in the sampling frame that did not provide a letter of support permitting onsite recruitment. Except at the Lorali, where interviews took place onsite, recruited subjects were asked to schedule an appointment at the Northside office of Community Outreach Intervention Projects (COIP) to complete an eligibility screening, verbally provide informed consent, and complete the survey interview. COIP is a community-based program within the UIC School of Public Health that conducts research and provides HIV-related services such as case management, prevention education, and drug treatment referrals at five storefront locations across Chicago, including the Northside location at 4407 N. Broadway Avenue in Uptown. Participant recruitment and data collection procedures are described in detail below under Data Collection.

2. Inclusion Criteria

Inclusion criteria for the study were: (1) currently living (defined as having spent at least the last night) at one of the privately owned, for-profit SRO buildings in Chicago where recruitment for the study took place; (2) being at least 18 years of age; (3) not having previously completed a survey interview for the study; (4) being able to comprehend and communicate verbally in English; and (5) being able to verbally provide informed consent. The first three criteria were assessed by a paper-and-pencil brief screening tool developed for the study (Appendix B), which was administered to recruited potential participants when they came to the COIP office or Lorali conference room to enroll in the study. The latter two criteria were assessed by reading and reviewing the study's subject information sheet with the participant (Appendix C), then asking the participant questions (as listed on the eligibility screener) to ensure that he or she understood the nature of his/her participation and was capable of giving informed consent. The questions were adapted from Zayas, Cabassa, and Perez (2005) and included, for example, "Tell me at least one thing that you will be asked to do in the study" (acceptable answers included "answer questions" "be interviewed" "talk about myself" or "complete a survey"). If a participant did not provide an acceptable answer to any of these questions, the subject information sheet was re-read, focusing on the aspects of the study the participant did not understand, and the questions repeated. Participants were required to correctly answer all questions upon this second administration in order to be deemed capable of providing informed consent.

3. Prospective Power Analysis

G*Power 3.1 software was used to determine the statistical power for key dependent variables and statistical models based on a sample size of 150 participants. However, the study

sought permission to collect data from 175 participants. Oversampling was necessary to ensure that a minimum of 150 cases were available for analysis, since some missing data was expected. In addition, up to five participants were expected to complete the survey interview for the purpose of pilot-testing the survey instrument. The total maximum requested sample size was therefore 180 participants.

For the power analysis, base rates representing the dependent variables as counts (e.g. frequency of alcohol and drug use, number of sexual partners, frequency of sex exchange) were estimated using rates reported in other studies of homeless or transiently housed adults whose samples were not restricted only to HIV-positive people, drug users, or only one gender (Dickson-Gomez et al., 2011; Somlai, Kelly, Wagstaff, & Whitson, 1998; Weiser et al., 2009). A sensitivity analysis using Poisson regression revealed the smallest incidence rate ratios able to be detected with an n of 150 and 80% power ranged from 1.11 to 2.11, depending on the base rate of the dependent variable. Incidence rate ratios in this range are indicative of small to moderate effect sizes (Orme & Combs-Orme, 2009). Using Poisson regression for the power analysis was a conservative decision, since any of the dependent variables could be converted to dichotomous outcomes, in which case logistic regression, which generally requires a smaller sample size than Poisson, would be used.

C. Measurement and Instrumentation

All study variables were measured via an interviewer-administered survey that was developed by the PI, adapting questions from other survey instruments that have been used with the target population. The measurement plan for the study, including the survey questions used to measure the main variables and the sources of these questions, is summarized in Appendix D. As described below, several variables were measured by multiple indicators, since it was not known

a priori which indicator would be most meaningful in the analyses (for example, number of homeless episodes versus proportion of the lifetime spent homeless versus dichotomous indicators of lifetime or recent homelessness).

1. Screening Questions

An eligibility screening tool was developed by the PI to ensure that potential participants met the study's inclusion criteria (Appendix B). First, the screener asked participants to state where they slept the previous night, to confirm they were living at an SRO building. Next, the screener asked participants to provide their recruitment cards if they had them (see the Data Collection section below for a detailed description of recruitment procedures). Potential participants who were recruited in person but lost their cards were asked where and when they spoke with a research team member about the study. These potential participants were screened out if they did not list the same SRO given in response to the first question as the recruitment location and approximate date (i.e. within three days of when research records indicate recruitment took place). Potential participants were also asked in what year they were born to confirm that they were over 18, and if they had previously been interviewed for the study. Validation of responses to the latter question was enhanced by using one interviewer (the PI) to conduct nearly all interviews. After reading the subject information sheet to the participant, the interviewer then asked the participant the questions described above under the study inclusion criteria to confirm that the participant understood and was capable of giving informed consent.

2. Independent Variables

The study's independent, dependent, and control variables were measured by a survey developed by the PI (Appendix E). The study had two independent variables, prior homelessness and rent burden.

a. Prior homelessness

Homelessness was defined as living in an overnight shelter or in places not meant for human habitation, such as cars, parks, or the street. This definition was adapted from the definition that HUD uses to establish eligibility for its homelessness assistance programs, which “defines an individual or family who resided in a shelter or a place not meant for human habitation and who is exiting an institution where he or she temporarily resided as homeless” (HUD, 2011, p. 75995). Some studies such as Stein et al. (2009) have used similar definitions.

Prior homelessness was measured by five indicators: ever experiencing homelessness, lifetime number of homeless episodes, proportion of lifetime spent homeless, experiencing homelessness in the past 12 months, and length of homelessness (weeks/days) in the past 12 months. The first indicator was measured dichotomously by asking participants if they have ever been homeless, based on the definition above. For participants who answered affirmatively, the second indicator was measured by asking participants the number of different times that they had been homeless in their lifetimes. The third indicator was calculated by asking participants the total number of days they have been homeless and dividing this by age. The fourth and fifth indicators were measured using the timeline follow-back format, asking the participant to go back month by month and report the number of days spent homeless in that month. In order to assess the extent to which SROs provide an alternative to homelessness, participants were also asked how much time they spent in an SRO each month for the past 12 months, and to report how long they had lived at their current SRO residence.

Questions measuring these indicators were adapted from the questionnaire used in Stein et al.’s (2009) study, except for the fourth and fifth indicators, which were based on the timeline follow-back format adapted from the Residential Follow-Back Calendar (RFBC; New

Hampshire-Dartmouth Psychiatric Research Center, 1995). Moderate to strong test-retest reliability of the RFBC has been demonstrated with a large sample of unstably housed adults, with intraclass correlation coefficients ranging from .59 to .91 for participants in different housing situations (Tsemberis, McHugo, Williams, Hanrahan, & Stefancic, 2007). Though this study did not directly assess the reliability or validity of past year or lifetime homelessness indicators, one of the study authors communicated that he did not think reliability or validity were serious concerns for these items, as most people seemed to be able to recall their residential histories with some interviewer prompting (G. J. McHugo, personal communication, September 4, 2012). Other studies such as North et al. (2004) found adequate reliability for homeless people's recall of their residential history, including items measuring total lifetime homelessness and places lived in the past year.

b. Rent burden

Rent burden was operationally defined as a continuous variable (which could be transformed into a categorical variable if needed for the analyses) calculated by dividing a person's monthly income by his or her monthly rent. Participants were asked to report where they lived and the amount of rent they paid on a weekly or monthly basis over the past three months, using the timeline-followback format described by Tsemberis et al. (2007). Rent reported for the current month was used to calculate rent burden. For participants who reported paying rent by the week, monthly rent was calculated by totaling the amount paid over the past four weeks. Participants were also asked if the amount they paid is the full amount of rent owed for that time period and if they receive any type of housing subsidy that reduces their rental payments. At one SRO in the sample, residents had the option of including one to three meals served at a cafeteria in the building in the price of their monthly rent. For these participants, rent

burden was calculated using the SRO's base rental rate that does not include any meals.

Income is complex to measure, since it can be defined in multiple ways. This study adopted two different measures of rent burden, one calculated based on the definition of income used by HUD and another that included illicit and under-the-table sources of income, which HUD does not include. Although measuring rent burden in a way that is consistent with HUD's definition may help when interpreting the policy implications of the research, a measure of rent burden that includes illicit income sources was thought to be reflective of participants' actual resources for paying rent.

The income definition used by HUD in establishing eligibility for several of its programs includes income from multiple sources, such as wages, disability benefits, retirement income, and money received from family or friends (HUD, 2009). It excludes some sources of income, such as food stamps, that cannot directly be used to pay for housing costs. Income was calculated on a monthly rather than an annual basis, due to the high potential for income instability in the population (Riley et al., 2005). A study evaluating the reliability of self-reports of income from indigent substance-using adults found that kappa coefficients for different legitimate income sources ranged from .67 to .89 (Johnson et al., 2000). In addition, Ompad et al. (2012) documented support for criterion and construct validity for self-reports of income from formal, informal, and illicit sources among a large sample of unstably housed adults.

The second definition of income used to calculate rent burden included illegal or "under the table" sources in addition to the income sources reflected in HUD's definition. To ask about these sources, the study adapted a question included on a 2000 needs assessment of homeless persons in the Chicago area conducted by UIC's Survey Research Laboratory ([SRL], 2000). This question included income-generating activities such as panhandling, selling drugs, and

prostitution. Johnson et al.'s (2000) reliability study reported coefficients of .73 for reported income received from prostitution and .77 for income from other illegal activities. The two measures of rent burden were then calculated by dividing monthly rent by income using the HUD definition for the first measure, and by income using the HUD definition plus income gained through illicit and under-the-table sources for the second measure.

3. Dependent Variables

The study had six categories of dependent variables: illicit drug and alcohol use, injection drug use and needle/equipment sharing, number of sexual partners, sex acts without a condom, sex acts while drunk or high, and exchange of sex for money, drugs, food, or shelter. As described below, most of the dependent variables were measured through multiple indicators to maximize the options for analysis. The dependent variables were measured using questions adapted from the Risk Behavior Assessment (RBA), an instrument developed by the National Institute on Drug Abuse (1991) to assess drug and sex-related risk behaviors. Though the RBA does not contain any standardized composite risk scales, a composite measure of recent risk was constructed for the study based on seven indicators, similar to that created by Dévieux et al. (2007) and described in more detail below.

The RBA was selected for this study because of its frequent use in studies of HIV risk among unstably housed adults (i.e. Dickson-Gomez et al., 2011; Elifson et al., 2007; Weir et al., 2007) and because of its documented reliability and validity, described below for each variable. Other tools including the HIV Risk Questionnaire (Brooner, Greenfield, Schmidt, & Bigelow, 1993) and the Addiction Severity Index (McLellan et al., 1992) were also considered. However, the RBA was selected as the most concise and reliable instrument for assessing both sexual and substance-related risk behaviors. Dependent variables were measured over a 30-day recall

period, which is the standard used on the RBA as well as other instruments such as the HIV Risk Questionnaire, though in some cases participants were also asked about lifetime risk, e.g. for less common behaviors such as injection drug use.

a. Illicit drug and alcohol use

This variable was measured in multiple ways, adapting a series of questions from the RBA. The RBA includes a matrix listing categories of substances and asking participants to report for each category if they have ever used the substance, how many days they have used it within the past 30 days, how many days they have injected it in the past 30 days, how many times a day they injected the substance, and how many times a day they used the substance without injecting. The five drug categories included on the standard RBA are cocaine or crack, heroin, combinations of cocaine and heroin (“speedballs”), non-prescription use of opioid painkillers (e.g. hydrocodone, oxycodone, codeine), and amphetamines. This study added several other drug categories, including alcohol, marijuana, methamphetamine (“crystal meth”), ecstasy (MDMA), poppers/nitrates/other inhalants, non-medical use of Xanax or Valium, and an “other drug” category (e.g. LSD or other hallucinogens).

Measuring substance use in this way allows for multiple indicators, including a dichotomous measure of use (e.g. any use of a substance in the past 30 days), a count measure ranging from zero to 30 representing the number of days on which a substance was used, or a count representing the average number of uses per day, depending on variability of responses. Though the survey inquired separately about different types of substances, responses could be summed across categories. Many HIV risk studies include a measure representing any “hard” drug use or use of any illicit drugs other than marijuana (Aidala et al., 2005; Kipke, Weiss, &

Wong, 2007; Weir et al., 2007), as there is very limited evidence linking marijuana use with HIV risk behaviors in adults.

The RBA has been used extensively to assess substance use in HIV risk research. The instrument has demonstrated strong test-retest reliability of self-reported drug use with an ethnically diverse sample of urban drug users, who completed the instrument at two time points approximately 48 hours apart (Needle et al., 1995). For example, kappa coefficients for cocaine, crack, and heroin ranged from .81 to 1.00. Another study using a version of the RBA that included alcohol and marijuana reported test-retest reliability coefficients of .79 and .84 respectively (Johnson et al., 2000). In addition, a study that compared participants' RBA responses with urinalysis results demonstrated the validity of the measure, with 86.3% agreement between urinalysis and self-report for cocaine use and 84.9% agreement for heroin use (Weatherby et al., 1994).

Given the documented associations between excessive alcohol consumption and HIV risk (Bryant, 2006; Shuper et al., 2010), the survey also assessed alcohol misuse, using the four-item Fast Alcohol Screening Test (FAST; Hodgson et al., 2003). The FAST questions are adapted from a well-known, somewhat longer assessment, the Alcohol Use Disorders Identification Test or AUDIT (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The questions ask respondents about the frequency of several drinking-related issues, including excessive drinking (defined as having eight or more drinks on one occasion for men and six or more drinks for women), being unable to remember what happened the night before because of drinking, failing to carry out expected responsibilities because of drinking, and significant others reporting concerns about the respondent's drinking. Each item is scored on a scale of zero ("never") to four ("daily or almost daily") and the four items are summed for a total score. A total score of three or greater is

considered a positive screening, indicating that the respondent is misusing alcohol. The FAST screening has demonstrated strong reliability and validity in comparison with its widely tested parent instrument, the AUDIT (Hodgson et al., 2003).

b. Injection drug use and needle/equipment sharing

This variable was represented by three indicators: lifetime injection drug use, injection drug use in the past 30 days, and number of times over the past 30 days that participants used needles/syringes or other injection equipment (e.g. cookers, cotton, rinse water) that they knew had been previously used by another person to inject drugs. The first two indicators are dichotomous whereas the third is a continuous count variable. This variable was measured by a short series of questions on the RBA asking about lifetime injection drug use, injection drug use over the past 30 days, and two questions asking separately about sharing needles and sharing other injection equipment, asked only of participants who responded affirmatively to injecting drugs in the past 30 days. The reliability coefficient for needle and equipment sharing was .78 in Needle et al.'s (1995) study. Although injection drug use and needle/equipment sharing are difficult to directly validate, a review found that studies assessing concurrent validity by comparing reports of needle sharing between drug users and their close associates (e.g. primary sexual partners) indicated agreement of 71 to 93%, suggesting that self reports of needle sharing are largely valid despite social desirability biases (Darke, 1998). Other research indicates strong agreement rates between self reports of injection drug use/needle-sharing and urinalysis results for opiates or cocaine (Greenfield, Bigelow, & Brooner, 1995).

c. Number of sexual partners

This variable was defined as a count variable (which could be dichotomized for the analyses) representing the number of people, both male and female, with whom a participant has

had vaginal or anal sex in the past 30 days. This variable was measured by a single question on the RBA. Although the phrasing of the original question on the RBA includes oral sex partners, a recent review indicated that the risk of HIV transmission through oral sex is extremely low (Campo et al., 2006). Therefore questions pertaining to sexual partners and practices on the RBA were modified to include only vaginal and anal sex. Needle et al. (1995) reported a reliability coefficient of .80 for the number of sexual partners. Sexual risk behaviors are challenging to validate, and researchers have little option but to rely on participants' self-reports (Weinhardt, Forsyth, Carey, Jaworski, & Durant, 1998).

d. Sex without a condom

This variable was defined as a count variable representing the number of vaginal and anal sex acts in which the participant engaged in which condoms were not used in the past 30 days. Though this variable could be dichotomized for the analyses, the raw number of unprotected sex acts over a given period of time is often used as a dependent variable in HIV research (e.g. Boily et al., 2009). To measure this variable, the study adapted a series of questions from the version of the RBA that was used in Johnson et al.'s (2000) RBA reliability study and also by Weir et al. (2007). Respondents were asked to report the number of times they had vaginal or anal sex in the last 30 day and then to report the number of times a condom was used during these occasions, so that the number of sex acts in which a condom was not used could be easily calculated.

There are numerous ways of measuring condom use and no widely established "gold standard." Asking about the frequency of condom use, rather than framing the question in terms of non-use, appears to be the most commonly used methodology and follows recommended best practices for sexual risk behavior research by asking directly about concrete events (Weinhardt et al., 1998). Johnson et al. (2000) reported reliability coefficients of .87 for men and .86 for

women for the number of vaginal sex acts, and .76 for men and .84 for women for the percentage of the time that condoms were used.

e. Sex while drunk or high

This variable was defined as a count variable representing the number of vaginal and anal sex acts in which the participant was drunk or high over the past 30 days. In addition to condom use, this variable is another indicator of sexual risk, as alcohol and other drugs are associated with high-risk sexual behaviors for men and women (Shuper et al., 2010; Wang, Collins, Kohler, DiClemente, & Wingood, 2000). Because it is not included on the RBA, this variable was measured by adapting a question used in the Sexual Acquisition and Transmission of HIV Cooperative Agreement Program study, for which COIP served as a research site (Compton, Normand, & Lambert, 2009). Using a format similar to the question on condom use, participants were asked to recall the number of times they had vaginal or anal sex with male or female partners in the last 30 days, and then to report the number of times they were drunk or high while having sex.

f. Sex exchange

This variable was measured by three indicators: ever exchanging vaginal, anal, or oral sex for money, food, drugs, or a place to stay; exchanging sex in the past 30 days; and frequency of exchanging sex in the past 30 days. The first two indicators are dichotomous while the last is a continuous count variable. The variable was measured by a short series of questions on the survey instrument, asking participants if they had ever exchanged each type of sex (vaginal, anal, or oral) in their lifetimes. Participants who responded affirmatively were asked if they had exchanged sex in the past 30 days and if so, how many times. The questions measuring this variable were adapted from the version of the RBA used by Johnson et al. (2000) and Weir et al.

(2007). Johnson et al. reported a reliability coefficient of .66 for a similar question about the number of times participants traded sex for drugs, and .72 for the number of times trading sex for money.

g. Composite measure of recent risk

A composite measure of recent risk was developed based on the study's dependent variables. Possible scores on the composite measure ranged from zero to seven, with one point accorded for each of the following behaviors over the past 30 days: any illicit drug use other than marijuana, positive FAST screening, any injection drug use, having more than one sexual partner, any sex without a condom, any sex while drunk or high, and any sex exchange. Because the RBA does not contain any composite scales, the measurement properties of this indicator are not known. However, other studies such as Dévieux et al. (2007) have calculated similar composite measures based on dichotomous RBA responses.

4. Control Variables

The study assessed six control variables: sex, race/ethnicity, age, HIV status, serious mental illness, and criminal justice history.

a. Sex

Sex was defined as a categorical variable with five response choices: male, female, transgender male-to-female, transgender female-to-male, or another gender identity, as specified by the participant. Participants who chose a response other than "male" or "female" were asked the follow-up question, "What sex were you assigned at birth on your original birth certificate"?

b. Race/ethnicity

Following Bradburn, Sudman, and Wansink's (2004) recommendations for survey design, race was assessed by two questions. First, participants were asked if they identified as

Hispanic or Latino, and then were asked to select from the following categories: American Indian or Alaska Native, Asian American, Black or African American, White or Caucasian, or another race. Participants were able to select multiple responses.

c. Age

Age was operationally defined as a continuous variable with a lower limit of 18 and no predetermined upper limit. Per Bradburn et al., age is most accurately measured by the question, “In what year were you born?”

d. HIV status

HIV status was defined dichotomously, distinguishing between participants who knew they were HIV positive and those who were HIV negative or did not know their status. Participants were asked a short series of questions adapted from a needs assessment of homeless persons (SRL, 2000) and the 2010 National Health Interview Survey (CDC, 2011). The questions asked the participant if he or she had ever been diagnosed with HIV or AIDS, if he or she had ever been tested, and if so, how long ago the last test was conducted. Participants who reported HIV positive status were asked if they were taking antiretroviral medications and two questions about medication adherence, derived from the Adult AIDS Clinical Trials Group Adherence to Anti-Retroviral Medications Questionnaire (Chesney et al., 2000). All participants who were not knowingly HIV positive were invited to obtain free voluntary HIV testing and counseling at COIP, though testing was not considered part of the data collection process.

e. Serious mental illness

Presence of a serious mental illness was defined dichotomously, based on participants’ response to the question, “Have you ever been told by a doctor, psychologist, social worker, or other health professional that you have a serious mental illness or mental health condition?”

Participants who answered affirmatively were asked if the condition was depression, bipolar disorder, schizophrenia, or another disorder. This question was adapted from SRL's (2000) needs assessment of homeless persons in the Chicago area. Self report of mental health diagnosis has been used in other studies that have examined housing conditions and health outcomes, such as Palepu, Marshall, Lai, Wood, and Kerr (2010) and Dickson-Gomez et al. (2011), as well as the federal Health Care for the Homeless User Survey (Zlotnick & Zerger, 2008). To gauge service usage for mental health conditions, participants were asked about psychiatric hospitalizations and use of outpatient mental health services over the lifetime, in the past 12 months, and in the past 30 days, and to report if they had unmet treatment needs in the past 12 months.

f. Criminal justice history

Criminal justice history was assessed by four indicators: lifetime incarceration, recent incarceration, length of recent incarceration, or ever having received a felony conviction. Lifetime incarceration was defined dichotomously as ever spending one or more nights in jail or prison. Other studies such as Aidala et al. (2005) and Reyes et al. (2005) have used similarly defined lifetime incarceration variables. Recent incarceration was defined dichotomously as having spent at least one night in jail or prison within the past 12 months. Some studies (e.g. Elifson et al., 2007; German et al., 2007; Shannon et al., 2006) have included recent incarceration as a control. Length of recent incarceration was a continuous variable ranging from zero to 364, representing the number of nights spent in jail or prison in the past 12 months. This was assessed using the timeline follow-back format, at the same time length of homelessness in the past year was measured. Ever having received a felony conviction was measured by a dichotomous variable. Questions measuring these variables were adapted from the 2010 National

Survey on Drug Use and Health (Substance Abuse and Mental Health Services Administration, 2009).

5. Descriptive Data

In addition to the variables included in the analyses to test the study hypotheses, the survey also included several questions that were used to describe key characteristics of the sample. These characteristics included participants' previous contact with COIP, usage of case management and other supportive services, self-rated health, access to health and mental health care, food insecurity, and insurance status. Since there is little previous research focusing on SRO residents, this descriptive data helped to provide background on the general health and service utilization behaviors and housing context of this population.

D. Instrument Development and Testing

To facilitate data collection, the PI developed: (1) a brief screening instrument containing questions about the study's eligibility criteria; and (2) a survey instrument measuring the independent, dependent, and control variables and descriptive data. Both the screening and the survey instrument were designed to be completed by an interviewer in paper-and-pencil format during a face-to-face interview. The decision to collect data through interviews rather than a self-administered format was based on the high potential for cognitive limitations, including difficulty reading, in the target population (Hwang et al, 2011; Shannon et al., 2006).

Per recommended survey research procedures (Presser et al., 2004), a small sample of four SRO residents were recruited in "Phase 1" of the study, which took place April 10-12, 2013, to pilot-test the screening tool and survey. The four Phase 1 participants were males recruited from one SRO. They ranged in age from 30 to 54 years old and varied in terms of their educational backgrounds, incomes, health status, risk behaviors, experiences with homelessness,

and length of time living in an SRO. Three identified as White and one identified as African American. During the pilot testing, the PI administered the survey individually to each participant at the COIP office. After completing the survey, each participant provided feedback to the PI on the questions, a process known as cognitive interviewing. For example, the participants identified question wording or phrasing that they found to be confusing and explained how they interpreted some of the questions. This process took approximately one hour with each participant. Phase 1 participants were compensated \$25 for their time.

Data collected from participants during the pilot testing was not included in the analyses. Rather, it was used only to evaluate and refine the screening and survey instruments. Following the pilot test, some erroneous language in the instructions on the screening tool was removed, but the screening questions were not modified. Minor changes were made to the survey based on the pilot test, including adding questions about the use of several classes of drugs not included on the original RBA (e.g. inhalants, ecstasy) and adding a field to inquire if subjects had ever injected drugs or exchanged sex for money, in addition to asking if these events had occurred in the past 30 days. Participants who took part in Phase 1 were informed that they were not eligible to participate in Phase 2, when the revised survey instrument was used to collect data for the analyses.

E. Data Collection

1. Participant Recruitment

Data collection – Phase 2 of the study – took place between May-September 2013. Participants were recruited primarily through face-to-face recruitment in public areas of SROs whose management provided permission for this activity (Wilson Men's Hotel, Bachelor Apartments, Foswyn Arms Apartments, Glenn Apartments, Lorali). For SROs located in the

sampling frame whose management did not provide a letter of support permitting onsite recruitment (Aragon Arms, Hazelton, Lawrence House, Northmere the SRO Hotel), participants were recruited on the street or sidewalk directly outside of these buildings. Very low traffic was observed at two of the buildings in the initial frame, the Aragon Arms and Clarendon Association. Although a few recruitment attempts were made, only a few participants were recruited at these locations and none actually completed the study's survey interview. Though the Darlington Hotel provided permission to recruit onsite, the PI decided to post recruitment flyers there (Appendix F), rather than recruit in person, due to the very low foot traffic at this location. This was the only location at which recruitment flyers were used. A telephone script (Appendix G) was used by the PI to respond to potential participants who called in response to seeing the flyer or who heard about the study from friends or neighbors who had participated.

In Phase 1, all participants were recruited directly by the PI. In Phase 2, recruitment was conducted jointly by the PI and the study's research assistant (RA), a dual degree master's student in the Jane Addams College of Social Work and School of Public Health at UIC. Recruitment scripts were used by the PI and RA to recruit subjects in person (Appendix H). All participants recruited through face-to-face recruitment received a recruitment card with a letter code corresponding to the recruitment location (see Appendix I for recruitment card template). At the time of recruitment, participants were invited to schedule a time to come to COIP to complete the survey interview. Participants were instructed to bring the recruitment card with them to COIP. At the Lorali, where interviews took place onsite, participants were recruited in the lobby and then scheduled a time to complete the interview in a private conference room located off of the lobby.

To reduce transportation barriers that could have prevented potential participants from taking part in the study, participants recruited inside of SROs located more than four city blocks from the COIP office (Glenn Apartments and Foswyn Arms Apartments) were provided with a Chicago Transit Authority transit card worth \$2.50 (equivalent to one train or bus fare with transfer) at the time of recruitment. Due to the concern that distributing transit cards outdoors might attract people who did not live in SROs and therefore would not be eligible for the study, transit cards were not provided for subjects recruited on streets and sidewalks outside of the SROs whose management did not permit onsite recruitment. To minimize disruptions, each SRO was visited for recruitment purposes no more than once per week.

2. Data Collection Process

Except for 27 interviews that took place at the Lorali, eligibility screenings and interviews took place in a private room in the COIP Northside office. Most of the screenings and interviews (90%) were conducted by the PI, a doctoral student who is a Licensed Clinical Social Worker with more than four years of experience working with homeless and unstably housed populations. The remainder was conducted by the study's RA, who also has experience working with homeless and at-risk populations and was trained on the study's interview protocol directly by the PI. Following eligibility screening, the survey interview was individually administered to participants after they provided informed consent. At the end of the interview, participants received \$20 cash compensation and an information sheet about community resources, including housing and social service providers, in the Uptown area (Appendix J). The total screening and interview process took approximately 45 minutes with each participant.

F. Human Subjects Protections

The study protocol was submitted to the UIC Institutional Review Board (IRB) for review and approval. The study was determined to be minimal risk and was reviewed under expedited procedures. After addressing the IRB's request for modifications (Appendix K), the research protocol was approved on April 1, 2013 (Appendix L). Following Phase 1, an amendment to the IRB was submitted to approve the final eligibility screening and survey instruments, which were revised as a result of the pilot testing in Phase 1, and to add the RA as key research personnel for the study. The amendment was approved April 29, 2013 (Appendix M). A second amendment was approved June 27, 2013 (Appendix N). This amendment contained minor changes to the recruitment documents, including adding a line to the recruitment scripts to clarify that the target population of the study was adults living alone in single rooms in SRO buildings (rather than adults sharing larger rooms in these buildings) and to clarify that the Telephone Response Script could be used for general inquiries, such as potential participants who heard about the study from a friend or neighbor, as well as those calling in response to seeing one of the study flyers. A third amendment was approved July 25, 2013 (Appendix O), adding the Lorali as a performance site at which participant recruitment and interviews would take place. Modified versions of the study's recruitment scripts and subject information sheet that were tailored for use specifically at the Lorali were included in this amendment (Appendix P).

All recruitment materials and data collection instruments were approved as part of the protocol prior to their use in Phases 1 or 2. A waiver of documentation of informed consent was requested and obtained from the IRB, since the survey included questions about sensitive topics such as drug use and HIV status, and a signed informed consent document would have been the

only documentation linking the participant's identity to participation in the study. Therefore, participants were required to provide informed consent verbally rather than in writing. No identifiers—such as names, birth dates, or addresses—were collected or recorded during the data collection process.

Hard copies of completed surveys were stored in a locked file cabinet at the COIP office and transported by the PI approximately once per week to the Jane Addams College of Social Work at UIC. The PI entered the survey responses into an electronic dataset on her password-protected, stand-alone laptop computer. Hard copies were stored in a locked file cabinet in the office of the faculty sponsor for this study at the UIC Jane Addams College of Social Work following data entry.

G. Data Analysis Plan

Following data collection, univariate, bivariate, and multivariate data analyses were conducted according to the following analysis plan. The data collected were analyzed using Stata 11 analytical software (StataCorp, 2009).

1. Procedures for Data Entry, Data Cleaning, and Missing Data

Data from the paper-and-pencil surveys were entered by the PI into an electronic Stata database on the PI's password-protected standalone laptop computer. Following initial data entry, 17 surveys (10% of the sample) were randomly selected and re-checked by the study's RA. Only one data entry error was identified and corrected, which was determined to be an acceptable level of error (Forsyth & Kviz, 2006) and no additional surveys were re-checked. The PI then ran frequencies on all variables in the dataset to identify any values that were out of range. Approximately three errors were identified and corrected by re-checking the hard copy surveys.

Because the survey was administered by an interviewer—the PI for most of the interviews—there was little missing data. Responses were imputed for missing data only for four participants who reported receiving disability benefits but declined to state the amount. For these cases, monthly income was imputed as \$710, the standard monthly Supplemental Security Income benefit for 2013. For some variables in the dataset, the number of responses was slightly less than the total number of interviews due to a few participants declining or not being able to recall an answer to a question. Therefore some of the analyses were based on less than the total sample size of 163 cases.

2. Univariate Analyses

Univariate statistics including measures of central tendency (means and medians) and measures of variability (range and standard deviations) were calculated to examine the distributions of the continuous indicators of retrospective homelessness (number of homeless episodes and proportion of life spent as homeless), rent burden, age, continuous indicators of the dependent variables, and the composite risk measure. Assumptions of normality in the distributions of these variables were assessed statistically. For the categorical variables—the dichotomous indicator of past homelessness, sex, race, HIV status, dichotomous indicators of criminal justice history, serious mental illness, and dichotomous indicators of the dependent variables—frequencies and/or modes were reported.

3. Bivariate Analyses

Multiple types of bivariate relationships were analyzed, including relationships between dichotomous and continuous indicators of homelessness and the dependent variables; relationships between rent burden and the dependent variables; relationships between homelessness and rent burden; and relationships between the control variables and the dependent

variables. Methods of bivariate analysis included chi-square tests (for pairs of categorical variables) and t-tests or one-way analysis of variance (for pairs with one dichotomous/categorical and one continuous variable). The bivariate analyses informed the development of the regression models in the multivariate analyses. For example, of the five indicators of prior homelessness, the indicator most strongly associated with HIV risk behaviors was used in the multivariate analyses.

4. Multivariate Analyses

The PI tested the hypotheses by building a set of models regressing each dependent variable on the two main predictors, prior homelessness and rent burden, and the control variables. Nested logistic regression was used to model dichotomous indicators of the dependent variables (e.g. positive screening for alcohol misuse on the FAST) and nested negative binomial regression was used to model indicators of the dependent variables that were counts, such as the composite measure of recent risk (negative binomial regression was used instead of Poisson regression because these variables were over-dispersed, as described further in the Results chapter). These analyses indicated the ways in which the HIV risk behaviors measured by the study varied according to prior homelessness and rent burden when controlling for the other variables in the models.

IV. RESULTS

The results of the study are presented in the following order: (1) sample recruitment, eligibility, and participation; (2) univariate analyses; (3) bivariate analyses; (4) multivariate analyses (hypothesis testing); and (5) summary of results.

A. **Sample Recruitment, Eligibility, and Participation**

Recruitment and participation rates for the sample are summarized in Figure 2. The primary recruitment approach was a face-to-face strategy, employed at nine SRO buildings in the sampling frame. A total of 202 potential participants were recruited through this method, accounting for 90% of the recruited sample. The number of participants recruited at each SRO location varied from three at one small building with very little foot traffic to 45 at two of the larger buildings. In addition, 22 participants were recruited via calling the study's phone number after hearing about the study through word-of-mouth ($n = 15$) or seeing the study flyer at the Darlington Hotel ($n = 7$).

Of the 224 potential participants recruited, a total of 176 (79%) appeared for their scheduled appointments at COIP or the Lorali to complete the study's eligibility screening. Four potential participants were screened out at this stage for not meeting the inclusion criteria, which included one individual who was under 18 years of age, one who did not currently live at an SRO building in the sampling frame, and two individuals who had previously completed an interview for the study. All potential participants were screened for capacity to provide informed consent, but none were excluded on this basis. Following the eligibility screening, all eligible participants consented to participate in the study by completing the survey interview.

Of the 172 participants who completed the survey interview, nine cases were determined to be illegitimate and removed from the dataset. These cases included six participants whose

demographics (e.g. sex, race, age, sexual orientation, income amount, education, rent amount) were identical or very close to the demographics of an interview already recorded in the dataset, so it was determined that these participants were likely completing the interview for a second time. In these cases the participants' first interviews were retained while their second attempts were excluded from the dataset. Interviews from three additional participants were excluded, one due to the participant demonstrating severe deficits in cognition and memory during the interview, causing concern that his responses may not have been valid; one due to the participant having a hearing impairment and limited ability to communicate verbally; and the third because the participant admitted during the interview that he was homeless and did not currently live at an SRO. After excluding these cases, data from 163 participants, representing 73% of all recruited study candidates, were retained for the analyses.

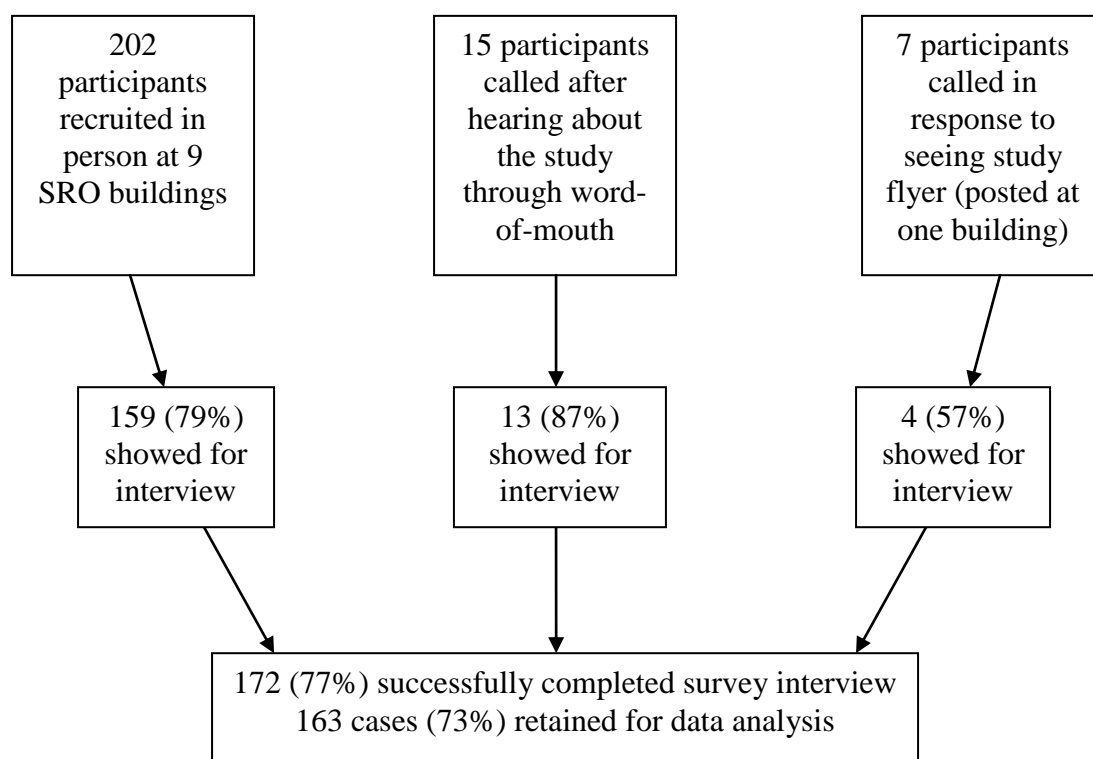


Figure 2. Study recruitment and participation rates by recruitment method.

B. Univariate Analyses

Table I provides a univariate description of the sample, including: demographics; housing characteristics, income, and rent burden; health and mental health characteristics; and criminal justice history. Participants' risk behaviors are described in Table II.

1. Demographic Characteristics

Sample demographics are summarized in Table I. As anticipated, the sample was predominantly (78%) male and racially diverse, with 63% identifying as African American, 27% as white, and 10% as other races, including Asian American and Native American, or more than one race. In addition, 7% of participants identified as being of Hispanic or Latino ethnicity.

Participants' ages ranged from 21 to 76, with a mean age of 49.8 years and a median of 51. Notably, one-third of the sample was over the age of 55. Participants' education levels varied, with approximately one-fourth having less than a high school education, one-third having a high school diploma or GED, and the remainder having some college or a college and/or graduate degree. A small minority (4%) was taking college classes at the time of the interview.

In terms of sexual orientation, the majority of the sample (82%) identified as straight. Twenty percent of female participants and 9% of male participants identified as bisexual, and 9% of women and 6% of men identified as gay or lesbian. Fifteen percent of the sample identified as a veteran of the U.S. Armed Forces.

TABLE I
SELECT PARTICIPANT CHARACTERISTICS

		<i>N (M)</i>	% (<i>SD</i>)
Sex	Male	127	78
	Female	34	21
	Transgender MTF	2	1
Race/ethnicity	Black	102	63
	White	45	27
	Other race or more than one race	16	10
	Hispanic or Latino ethnicity	12	7
Age	21-34	18	11
	35-55	90	55
	Over 55	55	34
Highest level of education	Grade school	8	5
	Some high school	31	19
	High school diploma or GED	55	34
	Some college	57	35
	College and/or graduate degree	12	7
Sexual orientation	Straight	133	82
	Gay or lesbian	10	6
	Bisexual	20	12
Veteran of U.S. Armed Forces		25	15
Housing characteristics	Ever homeless	135	83
	Homeless in past year	29	18
	Number of times homeless (<i>M</i>)	(3)	(4.7)
	Proportion of lifetime spent homeless(<i>M</i>)	(0.05)	(0.08)
	Days homeless in past 12 months (<i>M</i>)	(19.2)	(60.9)
	Months at current SRO (<i>M</i>)	(34.9)	(45.4)
Income and rent burden^a	Receive rental subsidy	56	35
	Monthly rent for total sample (<i>M</i>)	(316)	(163)
	Monthly rent for participants receiving a rental subsidy (<i>M</i>)	(156)	(124)
	Monthly rent for participants not receiving a rental subsidy (<i>M</i>)	(400)	(108)
	Legitimate monthly income (<i>M</i>)	(722)	(567)
	Total monthly income including illicit/alternative sources (<i>M</i>)	(844)	(637)
	Rent burden based on legitimate income (<i>M</i>)	(0.52)	(0.45)
	Rent burden based on total income (<i>M</i>)	(0.42)	(0.31)
Health and mental health	HIV positive	9	6
	Diagnosed with serious mental illness	110	68
	Ever had a problem with alcohol	80	49
	Ever had a problem with drugs	71	44

TABLE I (continued)

SELECT PARTICIPANT CHARACTERISTICS		
	<i>N (M)</i>	% (<i>SD</i>)
Criminal justice history		
Ever spent night in jail/prison	121	74
Ever convicted of a felony	78	48
Spent night in jail/prison in past 12 months	23	14
Days incarcerated in past 12 months (<i>M</i>)	(3.5)	(22.7)

^a Rent burden is defined as monthly rent divided by monthly income. Rent burdens above 30% are generally considered moderate and above 50% are considered severe.

2. Housing Characteristics, Income, and Rent Burden

Housing characteristics, income, and rent burden for the sample are summarized in Table

I. The majority of participants (83%) reported experiencing homelessness at some point in their lives, with a mean of three episodes of homelessness and a median of two. Only 18% had been homeless in the past 12 months; days homeless in the past year ranged from zero to 307, with a mean of 19.2 days. Amount of time at the participant's current SRO ranged from a few days to 20 years, with a mean of 34.9 months and a median of 17 months, indicating that the population was largely stable in terms of residence.

Two measures of rent burden were calculated: one based only on participants' legitimate income and one "comprehensive" measure based on legitimate income plus any income reported from under-the-table or illicit sources, as described in the measurement plan. In a few instances, participants reported paying less than the full amount of rent owed for the month (for example, owing \$400 in rent but having paid only \$350 so far). For these cases, rent burden was calculated based on the full amount of rent owed for the month.

A large range of rent burdens was noted. Sixteen participants reported receiving subsidies that covered 100% of their rent, because these participants had no legitimate income. Since these participants did not pay rent, their rent burdens were recorded as zero. For eight participants, rent far exceeded income—for example, a participant whose rent was \$365 but who recently lost employment and reported only \$50 legitimate income for the month. These participants reported paying rent through their savings, borrowing money, illegitimate income sources, or in some cases simply could not pay and feared they would soon be evicted. So that these participants' extraordinarily high rent burdens would not distort the analyses, rent burden was capped at a

maximum of two (meaning rent was twice the participant's income) for all analyses. Similar caps have been used in other studies of rent burden (e.g. Berger, Heintze, Naidich & Meyers, 2008).

About a third of the participants reported receiving a rental subsidy. The source of these subsidies included several local housing and social service organizations, including one subsidy program specifically for low-income SRO residents. Average monthly rent for participants receiving subsidies was \$156, compared to \$400 for participants not receiving a subsidy and \$316 for the sample as a whole (*Mdn* = \$320). Participants' monthly incomes from legitimate sources ranged from \$0 to \$5,800 (for a participant who worked as a traveling nurse), with a mean of \$722 and median of \$710. Notably, these amounts are well under the federal poverty level, which in 2013 was \$11,490 annually or \$957.50 per month for an individual (U.S. Department of Health and Human Services, 2013). The main legitimate income source was Social Security disability benefits, reported by 66% of participants. Fourteen percent of the sample reported receiving wages, salary, or tips from a job in the past month, with smaller percentages reporting income from other sources including retirement income and Veterans Administration payments.

Forty-four percent of participants reported receiving income from an under-the-table or illicit source in the previous month. The most common source was under-the-table employment, such as handing out restaurant menus or flyers, washing windows, babysitting, or moving jobs. Nineteen participants reported income from selling goods such as cigarettes, sodas, or DVDs, and four participants reported income from selling drugs. Panhandling was reported by 22 participants. Six participants received income in exchange for sex. Mean total monthly income including legitimate and under-the-table/illicit sources was \$844 with a median of \$730. Average rent burden was 52% based on legitimate income only and 42% based on total income.

3. Health, Mental Health, and Criminal Justice History

Key health, mental health, and incarceration variables are summarized in Table I. Nine participants (6%) reported they were HIV positive. All but one of the HIV positive participants were prescribed antiretroviral medication. Medication adherence varied, with two people reporting that they had missed a dose of their HIV medication within the past week, one reporting that he/she had missed a dose in the past two to four weeks, two reporting that they had missed a dose more than three months ago, and three reporting that they never missed a dose. Rates of HIV testing were relatively high, with 62% of self-reported HIV negative participants stating they had received an HIV test within the past two years.

Diagnosis with a serious mental illness was reported by 68% of the sample. Among those with a mental illness (some of whom reported multiple diagnoses), 41% reported a diagnosis of schizophrenia, 38% reported a diagnosis of major depression, 31% reported a diagnosis of bipolar disorder, and 23% reported other mental health conditions, mainly posttraumatic stress disorder, other anxiety disorders, and personality disorders. Of those reporting a mental illness, 71% had been hospitalized in their lifetimes for treatment and 83% had received either inpatient or outpatient mental health treatment within the past 12 months.

Almost half of the sample reported ever having a problem with alcohol, and 44% reported ever having a problem with drugs other than alcohol. Twenty-seven percent of participants reported accessing inpatient or outpatient substance abuse treatment in the past 12 months, including participation in 12-step self-help programs. Originally treatment participation was considered as a control variable for this study, but it was eliminated since only about half of the sample reported a substance abuse history. Further review of the literature indicated that studies of housing and HIV risk that included treatment participation as a control (e.g. Andia et

al., 2001; Elifson et al., 2007; Metraux et al., 2004) had samples composed entirely of people who had a history of recent substance abuse, particularly injection drug users.

Incarceration was common in the sample, with 74% reporting they had spent at least one night in jail or prison in their lifetimes. Nearly half of the sample had received one or more felony convictions. Only 14% of participants had been incarcerated in the past 12 months. Days spent in jail in the past 12 months ranged from zero to 183, with a mean of 3.5 days.

4. HIV Risk Behaviors

HIV risk behaviors for the sample are summarized in Table II. Regarding substance use, 17% of participants reported the use of illicit drugs other than marijuana in the past 30 days. The most commonly used illicit drug other than marijuana was crack or cocaine, used by 67% of participants in this category, followed by heroin (26%) and non-medical use of prescription painkillers (19%). Past month use of amphetamines or inhalants was reported by only two participants each and no participants reported past month use of crystal methamphetamine or ecstasy. The mean number of days of illicit drug use other than marijuana in the past 30 days for the total sample was one day. Since illicit drug use was relatively uncommon in the sample, a dichotomous indicator of any illicit drug use other than marijuana in the past 30 days was used in the analyses.

TABLE II
HIV RISK VARIABLES AND INDICATORS

	<i>N (M)</i>	<i>% (SD)</i>
Illicit drug and alcohol use		
Any illicit drug use other than marijuana in past 30 days*	27	17
Number of days of illicit drug use other than marijuana in past 30 days (<i>M</i>)	(1)	(3.8)
FAST score of three or more (problem drinking)*	54	33
Injection drug use and needle sharing		
Ever injected drugs*	18	11
Injected drugs in past 30 days	2	1
Shared needles or other equipment in past 30 days	0	0
Number of sexual partners^a		
Had more than one sexual partner in past 30 days*	27	17
Number of sexual partners in past 30 days (<i>M</i>)	(0.8)	(1.5)
Sex without a condom^a		
Had sex without condom at least once in past 30 days	49	30
Number of sex acts without a condom* (<i>M</i>)	(3.2)	(8.7)
Sex while drunk or high^a		
Had sex while drunk or high at least once in past 30 days	28	17
Number of sex acts while drunk or high* (<i>M</i>)	(1.3)	(4.2)
Sex exchange^b		
Ever exchanged sex for money/drugs/food/shelter*	34	21
Exchanged sex in past 30 days	6	4
Number of times exchanged sex in past 30 days	0.3	2
Composite measure recent risk^c * (<i>M</i>)		
	(1.2)	(1.4)
No risk behaviors	68	42
One risk behavior	42	26
Two risk behaviors	23	14
Three risk behaviors	19	12
Four or more risk behaviors	10	6

*Indicator was selected to represent the variable in the multivariate analyses

^a For the variables of number of sexual partners, sex without a condom, and sex while drunk or high, “sex” included vaginal or anal sex with a partner of any sex.

^b Defined as exchanging vaginal, anal, or oral sex for money, drugs, food, or a place to stay.

^c Included the following risk behaviors over the past 30 days: any illicit drug use other than marijuana, positive FAST screening, any injection drug use, having more than one sexual partner, any sex without a condom, any sex while drunk or high, any sex exchange (possible range 0-7).

Alcohol use was common with 70% of participants reporting that they had drunk alcohol at least once in the past 30 days. For these participants, the average number of drinks consumed per day ranged from one to 40, with a mean of 5.2 drinks and a median of four. The FAST screening tool was used to identify potential problem drinking among participants. One-third of the sample scored three or more points on the FAST, which is considered a positive screening and indicates that the respondent may be misusing alcohol (Babor et al., 2001). Positive FAST screening was used as a dichotomous indicator of problem drinking in the analyses.

Injection drug use was rare. Eighteen participants had ever injected drugs, though only two people reported injecting in the past 30 days. These two participants reported no sharing of equipment or needles in the past 30 days. Since recent injection drug use was so infrequently reported, a dichotomous measure of lifetime injection drug use was selected for the analyses.

Participants reported having between zero and 10 sexual partners in the past 30 days, with a mean of 0.8 partners. Because 54% of the sample reported no sexual partners, the median number of partners was zero. A dichotomous measure of having more than one sexual partner in the past 30 days, which was reported by 17% of the sample, was used as an indicator of having multiple sexual partnerships for the analyses. About one-third of the sample reported having sex without a condom at least once in the past 30 days. The number of sex acts without a condom ranged from zero to 60, with a mean of 3.2 acts. Engaging in vaginal or anal sex while drunk or high was reported by 17% of the sample. The number of sex acts while drunk or high ranged from zero to 30, with a mean of 1.3 acts. Although the bivariate analyses were performed using dichotomous indicators of having sex without a condom and having sex while drunk or high, in the multivariate models the number of unprotected sex acts and number of sex acts while drunk or high were used as the dependent variables, since this provided an opportunity to model more

of the variance in the data using negative binomial regression than would be possible with a dichotomous outcome using logistic regression (Orme & Combs-Orme, 2009).

Lifetime exchange of sex for money, drugs, food, or a place to stay was reported by 21% of the sample. Six participants reported exchanging sex in the past 30 days. Number of sex exchange acts in the past 30 days ranged from zero to 30, with a mean of 0.3 acts for the sample. Because recent sex exchange was rare in the sample, a dichotomous measure of lifetime sex exchange was selected for the analyses.

A composite measure of recent risk was calculated by allocating one point for each of the following seven indicators, measured over the past 30 days: any illicit drug use other than marijuana, positive screening on the FAST, any injection drug use, having more than one sexual partner, any sex without a condom, any sex while drunk or high, and any sex exchange. Though the possible maximum score on this measure was seven, participants reported between zero and six risk behaviors, with a mean of 1.2 behaviors and a median of one. In the bivariate analyses a dichotomous measure was employed to indicate “high risk” participants, i.e. those having two or more recent risk behaviors. In the multivariate analyses, this measure was modeled as a count variable and negative binomial regression was used.

5. Assessment of Normality in Distributions of Continuous Variables

The distributions of key continuous indicators and variables are summarized in Table III. These variables displayed considerable skewness and kurtosis, violating assumptions of normal distributions. Because skewness and kurtosis were less pronounced for the age variable, and because age was a control variable and normality is not assumed for predictor variables in regression, no transformations were made to the age variable and it was used as a continuous variable in the multivariate analyses.

TABLE III

SUMMARY OF DISTRIBUTIONS OF KEY CONTINUOUS AND COUNT VARIABLES
AND INDICATORS

	Range	<i>M</i>	<i>SD</i>	<i>Mdn</i>	Variance	Skewness	Kurtosis
Age	21-76	49.79	11.04	51	121.82	-0.71	3.19
Number of times homeless	0-40	2.96	4.68	2	21.94	4.51	29.97
Proportion of lifetime spent homeless	0-0.43	0.05	0.08	0.01	0.01	2.23	7.93
Weeks homeless in past year	0-44	2.76	8.69	0	75.60	3.51	14.55
Legitimate rent burden	0-2	0.52	0.45	0.43	0.20	1.94	7.16
Comprehensive rent burden	0-2	0.42	0.31	0.39	0.09	2.09	11.33
Number of sex acts without a condom	0-60	3.15	8.69	0	75.50	3.97	20.40
Number of sex acts while drunk or high	0-30	1.25	4.20	0	17.61	4.44	24.11
Composite measure of recent risk	0-6	1.18	1.36	1	1.84	1.16	3.81

Three continuous indicators of homelessness—number of times homeless, proportion of lifetime spent homeless, and weeks spent homeless in the past 12 months — displayed extreme skew and kurtosis, and the distributions of number of times homeless and weeks homeless were over-dispersed, with the standard deviations being much greater than the means. Because a dichotomous indicator of homelessness was selected for the multivariate analysis after testing multiple homelessness indicators in the bivariate analyses (described below), these indicators were ultimately not used in the multivariate analyses and thus no transformations were needed.

The legitimate and comprehensive rent burden variables also demonstrated considerable skew and kurtosis. For the bivariate and multivariate analyses, it was determined that a categorical measure of rent burden would be more meaningful, as described below in the section “Bivariate Analysis of Rent Burden and the Dependent Variables.” Thus, no transformations were needed to the continuous measures of rent burden.

The distributions for the variables of number of sex acts without a condom and number of sex acts engaged in while drunk or high were extremely over-dispersed. Though the dispersion of the distribution of the composite measure of recent risk was less extreme, it displayed some skew and kurtosis. For this reason, these variables were modeled using negative binomial regression, which does not assume that data are evenly dispersed or normally distributed by estimating separate parameters for the mean and variance of the distribution of estimated scores (Orme & Combs-Orme, 2009).

C. Bivariate Analyses

Bivariate analyses were conducted using chi-square tests, t-tests, and one-way analysis of variance to assess the following relationships among the variables: (1) relationships between dichotomous and continuous indicators of homelessness and the dependent variables; (2) relationships between rent burden and the dependent variables; (3) relationship between homelessness and rent burden; (4) relationships between the control variables and the dependent variables; and (5) relationships between the selected housing indicators and control variables.

1. Bivariate Analysis of Homelessness Indicators and Dependent Variables

The relationships between dichotomous and continuous indicators of prior homelessness and the dependent variables were assessed to determine which indicator of homelessness should be used in the multivariate analyses. Table IV shows the results of chi-square tests used to assess

relationships between two dichotomous indicators, lifetime homelessness and homelessness in the past 12 months, and the dependent variables. Lifetime homelessness was significantly associated only with recent illicit drug use at $p < .05$. Homelessness in the past 12 months was associated at $p < .05$ with illicit drug use in the past month, lifetime injection drug use, and having sex while drunk or high in the past month.

TABLE IV

**BIVARIATE ANALYSES: DICHOTOMOUS MEASURES OF HOMELESSNESS AND
DEPENDENT VARIABLES**

	Homeless in Lifetime			Homeless in Past 12 Months		
	Yes <i>n</i> = 135 %	No <i>n</i> = 28 %	<i>p</i>	Yes <i>n</i> = 29 %	No <i>n</i> = 134 %	<i>p</i>
Illicit drug use other than marijuana	19	4	.041	31	13	.016
FAST score of 3 or more	36	21	.148	28	32	.545
Lifetime injection drug use	12	7	.469	24	8	.013
More than one sexual partner	19	7	.141	28	14	.078
Sex without condom	30	29	.850	31	30	.900
Sex while drunk or high	18	14	.656	31	14	.029
Lifetime sex exchange	23	11	.147	28	19	.325
Two or more risk behaviors	34	21	.184	45	29	.074

Table V summarizes the results of t-tests conducted to assess the relationships of three continuous indicators of homelessness—number of times homeless in the lifetime, proportion of the lifetime spent homeless, and weeks spent homeless in the past 12 months—with the dependent variables. The number of times a participant was homeless was not significantly associated with any of the dependent variables. Proportion of the lifetime spent homeless was associated at $p < .05$ only with having a positive score on the FAST and lifetime sex exchange. Weeks spent homeless in the past year was associated at $p < .05$ with illicit drug use other than marijuana in the past 30 days, having sex while drunk or high in the past 30 days, and having two or more risk behaviors. Because the dichotomous indicator of homelessness in the past 12 months was significantly associated with three dependent variables and has been used in other research on housing and HIV risk (e.g. Jenness et al., 2011; Riley et al., 2007), it was selected to represent the homelessness variable in the multivariate analyses.

TABLE V**BIVARIATE ANALYSES: CONTINUOUS MEASURES OF HOMELESSNESS AND
DEPENDENT VARIABLES**

		Number of Times Homeless		Proportion of Life Homeless		Weeks Homeless in Past Year	
		<i>M</i>	<i>p</i>	<i>M</i>	<i>p</i>	<i>M</i>	<i>p</i>
Illicit drug use other than marijuana							
	Yes	4.2	.127	.06	.474	6.6	.012
	No	2.7		.05		2.0	
FAST score of 3 or more							
	Yes	3.8	.101	.07	.010	4.3	.117
	No	2.5		.04		2.0	
Lifetime injection drug use							
	Yes	3.7	.500	.05	.878	4.1	.505
	No	2.9		.05		2.6	
More than one sexual partner							
	Yes	2.9	.893	.08	.071	4.6	.232
	No	3.0		.04		2.4	
Sex without condom							
	Yes	3.9	.109	.05	.589	2.1	.502
	No	2.6		.05		3.1	
Sex while drunk or high							
	Yes	3.4	.594	.07	.113	7.3	.002
	No	2.9		.05		1.8	
Lifetime sex exchange							
	Yes	3.8	.229	.09	.000	5.1	.072
	No	2.7		.04		2.1	
Two or more risk behaviors							
	Yes	3.5	.283	.06	.353	4.8	.037
	No	2.7		.05		1.8	

2. Bivariate Analysis of Rent Burden and the Dependent Variables

Table VI shows the results of chi-square tests conducted to assess the relationships between a measure of rent burden based on legitimate income only and a measure of rent burden based on comprehensive income (legitimate and illicit/under-the-table sources) and the dependent variables. For both the legitimate and comprehensive measures, rent burden was operationalized as a categorical variable with three levels: no rent burden, rent burden of 1% to 50%, and rent burden higher than 50%. This was done in order to differentiate participants who did not pay any rent because they had no reportable income and received subsidies covering 100% of their rent (the first category) from those with a moderate rent burden (the middle category) and those with a high rent burden (the last category). Though 30% has traditionally been used as the cut-off point above which rent burden is considered to be excessive, the escalating cost of rental housing in proportion to income on a national level has led to the use of 50% as a cut-off for establishing “severe” or high rent burden in research and policy (Joint Center for Housing Studies of Harvard University, 2013). Since 85% of the 146 rent-paying participants in the sample had a rent burden greater than 30%, it was determined that 50% would be a more meaningful cut-off point than 30% for establishing a high rent burden category for this study.

Both the legitimate and the comprehensive measures of rent burden were significantly associated at $p < .05$ with illicit drug use, having more than one sexual partner, and having sex without a condom. The comprehensive measure was also significantly associated with lifetime injection drug use and having sex while drunk or high at $p < .05$. For both measures, participants who had no rent burden were more likely than participants in the moderate or high rent burden categories to respond affirmatively to each dependent variable with the exception of lifetime

injection drug use, which was not reported by any participant in the no rent burden category. The multivariate analyses were run with both the legitimate and comprehensive measures of rent burden to see if there were any significant differences. For ease of comparison with other studies of rent burden and greater clarity in interpreting the policy implications of the results (e.g. since eligibility for subsidized housing programs is typically based on legitimate income only), the legitimate measure of rent burden is used in the models that are reported on in the section below on the multivariate analyses; however, differences between the legitimate and comprehensive measures of rent burden are noted for the regressions of having more than one sexual partner and the composite measure of recent risk.

TABLE VI

BIVARIATE ANALYSES: RENT BURDEN AND DEPENDENT VARIABLES

	Legitimate Rent Burden			<i>p</i>	Comprehensive Rent Burden			<i>p</i>
	No Rent Burden <i>n</i> = 16 %	Rent Burden < 50% <i>n</i> = 80 %	Rent Burden > 50% <i>n</i> = 66 %		No Rent Burden <i>n</i> = 16 %	Rent Burden < 50% <i>n</i> = 98 %	Rent Burden > 50% <i>n</i> = 48 %	
Illicit drug use other than marijuana	31	22	8	.022	31	20	6	.034
FAST score of 3 or more	31	35	32	.905	31	36	29	.720
Lifetime injection drug use	0	16	8	.083	0	17	2	.007
More than one sexual partner	38	10	18	.020	38	13	15	.047
Sex without condom	63	24	30	.009	63	24	31	.009
Sex while drunk or high	38	13	18	.053	38	17	10	.046
Lifetime sex exchange	38	24	14	.076	38	20	17	.203
Two or more risk behaviors	50	29	32	.264	50	34	23	.113

3. Bivariate Analysis of Prior Homelessness and Rent Burden

To understand if the study's two independent variables were related, a chi-square test was conducted with the variable of homelessness in the past 12 months (the dichotomous indicator of retrospective homelessness selected for the multivariate analyses) and the categorical measure of rent burden based on legitimate income. In both the no rent burden and the moderate rent burden categories, 19% of participants had been homeless in the past 12 months, as well as 17% of participants in the high rent burden category. The chi-square test confirmed that there was no significant association between prior homelessness and rent burden, $\chi^2(2) = 0.12, p = .944$.

4. Bivariate Analysis of Control and Dependent Variables

The results of bivariate analyses assessing the relationships between the control and the dependent variables are summarized in Tables VII-X. Table VII shows the results of chi-square tests between sex and race and the dependent variables. In the bivariate analysis of sex and the dependent variables and in the multivariate analyses, the two male-to-female transgender participants were included in the female group in recognition of their gender identity. Sex was significantly associated at $p < .05$ only with having sex without a condom, which female participants were more likely to report. Race was significantly associated with five dependent variables at $p < .05$: having more than one sexual partner, having sex without a condom, having sex while drunk or high, lifetime sex exchange, and having two or more recent risk behaviors. For each of these dependent variables, white participants were less likely to report risky behaviors than African Americans or participants in the other race/more than one race category.

Table VII**BIVARIATE ANALYSES: SEX, RACE, AND DEPENDENT VARIABLES**

	Sex		<i>p</i>	Race			<i>p</i>
	Male <i>n</i> = 127 %	Female <i>n</i> = 36 %		African American <i>n</i> = 102 %	White <i>n</i> = 45 %	Other/ Multiple Races <i>n</i> = 16 %	
Illicit drug use other than marijuana	17	14	.612	20	7	25	.094
FAST score of 3 or more	35	25	.240	36	27	31	.514
Lifetime injection drug use	13	3	.073	9	18	6	.227
More than one sexual partner	19	8	.132	24	2	13	.005
Sex without condom	26	44	.033	38	11	31	.004
Sex while drunk or high	19	11	.274	24	4	13	.016
Lifetime sex exchange	18	31	.105	29	2	19	.001
Two or more risk behaviors	32	31	.822	42	11	31	.001

Table VIII shows the results of t-tests conducted between age and the dependent variables. Age was associated at $p < .05$ with three dependent variables: lifetime injection drug use, sex without a condom, and having two or more recent risk behaviors. Participants who reported sex without a condom or two or more risk behaviors had a significantly lower mean age, while participants reporting lifetime injection drug use had a higher mean age.

Table VIII

BIVARIATE ANALYSES: AGE AND DEPENDENT VARIABLES

		<i>M</i>	<i>p</i>
Illicit drug use other than marijuana			
	Yes		
	No	48.1	.396
		50.1	
FAST score of 3 or more			
	Yes	50.6	.532
	No	49.4	
Lifetime injection drug use			
	Yes	57.2	.002
	No	48.9	
More than one sexual partner			
	Yes	46.6	.104
	No	50.4	
Sex without condom			
	Yes	46.6	.014
	No	51.2	
Sex while drunk or high			
	Yes	46.6	.098
	No	50.4	
Lifetime sex exchange			
	Yes	49.3	.772
	No	49.9	
Two or more risk behaviors			
	Yes	46.6	.012
	No	51.2	

Table IX shows the results of chi-square tests between the control variables of HIV status and serious mental illness and the dependent variables. HIV status was not significantly associated with any of the dependent variables, most likely owing to the small number of HIV positive participants (nine people) in the sample. To determine if there were significant differences in the group not reporting HIV positive status according to HIV testing history, this group was subdivided into two groups, one reporting having an HIV test in the past two years ($n = 95$) and the other including those who had never had an HIV test, had one longer than two years ago, or did not remember if or when they last had an HIV test ($n = 59$). Chi-square tests (not shown) were conducted between these two subgroups on the dependent variables. The only significant differences were that participants in the subgroup that had not been recently tested were less likely to report sex while drunk or high (8% compared to 23%) or sex exchange (10% compared to 25%). Because these were the only differences between the two subgroups, they remained combined as one “no HIV” group for the multivariate analyses.

Having a serious mental illness was associated at $p < .05$ with having sex while drunk or high in the last 30 days and lifetime sex exchange. Participants who had a serious mental illness were less likely to report having sex while drunk or high, but more likely to report lifetime sex exchange than participants not diagnosed with a serious mental illness.

TABLE IX

**BIVARIATE ANALYSES: HIV STATUS, MENTAL ILLNESS,
AND DEPENDENT VARIABLES**

	HIV Positive			Serious Mental Illness		
	Yes	No	<i>p</i>	Yes	No	<i>p</i>
	<i>n</i> = 9 %	<i>n</i> = 154 %		<i>n</i> = 110 %	<i>n</i> = 53 %	
Illicit drug use other than marijuana	33	16	.167	17	15	.708
FAST score of 3 or more	44	32	.458	37	25	.105
Lifetime injection drug use	22	10	.271	14	6	.128
More than one sexual partner	11	17	.651	14	23	.147
Sex without condom	11	31	.202	31	28	.734
Sex while drunk or high	11	18	.620	13	26	.030
Lifetime sex exchange	44	19	.073	26	9	.013
Two or more risk behaviors	44	31	.414	30	36	.476

Table X shows the results of chi-square tests between three indicators of criminal justice history—ever being incarcerated, ever being convicted of a felony, and being incarcerated in the past 12 months—and the dependent variables. Ever being incarcerated was associated at $p < .05$ with illicit drug use in the past 30 days, a positive FAST screening, lifetime injection drug use, and having two or more recent risk behaviors. Ever being convicted of a felony was associated at $p < .05$ with illicit drug use in the past 30 days, a positive FAST screening, lifetime sex exchange, and having two or more recent risk behaviors. Being incarcerated in the past 12 months was associated at $p < .05$ with a positive FAST screening, having more than one sexual partner, having sex while drunk or high, and having two or more risk behaviors. In each instance, criminal justice system involvement was associated with greater likelihood of engaging in risk behaviors. Although each of the indicators was associated with some of the dependent variables, felony conviction was selected for the multivariate analysis due to its significant association with

four dependent variables and because of its theoretical importance, as felony convictions are associated with longer incarceration periods and increased likelihood of homelessness and HIV risk following incarceration (Freudenberg, 2001).

TABLE X**BIVARIATE ANALYSES: INDICATORS OF CRIMINAL JUSTICE HISTORY AND DEPENDENT VARIABLES**

	Ever Incarcerated			Ever Convicted of a Felony			Incarcerated in Past 12 Months		
	Yes	No	<i>p</i>	Yes	No	<i>p</i>	Yes	No	<i>p</i>
	<i>n</i> = 121 %	<i>n</i> = 42 %		<i>n</i> = 78 %	<i>n</i> = 85 %		<i>n</i> = 23 %	<i>n</i> = 140 %	
Illicit drug use other than marijuana	21	2	.004	24	9	.011	26	15	.191
FAST score of 3 or more	39	17	.009	51	16	.000	57	29	.010
Lifetime injection drug use	14	2	.038	15	7	.090	9	11	.698
More than one sexual partner	17	14	.645	21	13	.194	39	13	.002
Sex without condom	30	31	.884	33	27	.383	35	29	.594
Sex while drunk or high	19	12	.293	17	18	.868	35	14	.016
Lifetime sex exchange	23	14	.224	33	9	.000	9	23	.121
Two or more risk behaviors	36	19	.035	41	24	.019	52	29	.026

5. Bivariate Analysis of Housing and Control Variables

To understand how the study's predictor variables may be related to one another, bivariate analyses were conducted between the housing variable indicators (homelessness in the past 12 months and the categorical measure of rent burden based on legitimate income) and the control variable indicators that were selected for the multivariate analyses. Table XI summarizes these analyses. Chi-square tests were used for pairs of categorical variables. A t-test was used to compare the difference in mean ages among participants who had been homeless in the past year and those who had not, and a one-way analysis of variance test was conducted to compare differences in mean ages among participants in the three rent burden groups. No significant relationships between the housing and control variables were detected.

Due to the well-documented association between race and felony conviction (Lichtenstein, 2009; Moore & Elkavitch, 2008), an additional chi-square test was conducted to assess the relationship between these two variables. Consistent with past research, African American participants were more likely to have a prior felony conviction, with 56% reporting a prior felony compared to 34% of participants of other races ($p = .006$).

TABLE XI**BIVARIATE ANALYSES: HOUSING AND CONTROL VARIABLES**

	Homeless in Past 12 Months			Legitimate Rent Burden			<i>p</i>
	Yes <i>n</i> = 29 %	No <i>n</i> = 134 %		No Rent Burden <i>n</i> = 16 %	Rent Burden < 50% <i>n</i> = 80 %	Rent Burden > 50% <i>n</i> = 66 %	
Female	17	23	.488	31	19	24	.480
African American	69	61	.433	88	63	58	.084
Age (<i>M</i>)	49	50	.701	49	52	48	.071
HIV positive	7	5	.721	0	8	5	.439
Serious mental illness	72	66	.532	69	71	64	.616
Ever convicted of a felony	55	46	.384	56	54	39	.178

D. Multivariate Analyses

Multivariate regression analyses were performed to test the hypotheses that prior homelessness (operationalized as a dichotomous variable indicating homelessness in the past 12 months) and having a higher rent burden (operationalized as a three-level categorical variable) would be associated with greater levels of HIV risk behavior when controlling for sex, race, age, HIV status, serious mental illness, and prior felony conviction. Nested logistic regression modeling was used with the dichotomous indicators of the dependent variables: any illicit drug use other than marijuana in the past 30 days, positive screening for alcohol misuse on the FAST, lifetime injection drug use, having more than one sexual partner in the past 30 days, and lifetime sex exchange. Nested negative binomial regression modeling was used for the three indicators of the dependent variables that were counts: number of times having sex without a condom in the past 30 days, number of times having sex while drunk or high in the past 30 days, and the composite measure of recent risk.

Nested models were used to understand how prior homelessness and rent burden contributed to variations in HIV risk after controlling for the other variables in the models (Orme & Combs-Orme, 2009). Post-estimation tests including the Hosmer-Lemeshow goodness-of-fit test and the link test for model specification error were conducted in order to identify potential problems with model fit and adjust the models accordingly. Tests for collinearity were also conducted but did not indicate problems for any of the models. Tjur R^2 , also known as the “coefficient of discrimination” (Tjur, 2009), was calculated as a measure of overall strength of association for the logistic regression models. Though several pseudo- R^2 measures are available for negative binomial regression, these are not reported here, due to the lack of a consensus on the meaningfulness of these measures for this type of regression modeling (Cameron &

Windmeijer, 1996). Due to missing data for select variables, sample size for the regression models ranged from 161 to 163, as noted in the regression tables.

1. Regression of Illicit Drug Use Other Than Marijuana in Past 30 Days

Table XII shows the results of the nested logistic regression conducted for the dependent variable of illicit drug use other than marijuana in the past 30 days. In the reduced model, which contained only the control variables, the only variable that was significant was prior felony conviction, $OR = 3.21$. The reduced model was not significant, $LR \chi^2(7) = 12.82, p = .08$. In the full model, past-year homelessness and rent burden were added following the control variables. Prior felony conviction retained its significance. Homelessness in the past 12 months was a significant predictor, $OR = 3.57$. Participants in the highest rent burden group were significantly less likely than participants with no rent burden and no income (the reference group) to report illicit drug use in the past month, $OR = 0.12$. The full model was significant, $LR \chi^2(10) = 27.49, p < .01$. The likelihood ratio test comparing the two models was also significant, suggesting that including the homelessness and rent burden variables significantly improved model fit. The Hosmer-Lemeshow goodness-of-fit test and link test were not significant, indicating that the model appeared to be a good fit for the data and did not appear to be mis-specified. Tjur R^2 was .18, interpreted as a small-to-moderate effect size (Ferguson, 2009).

TABLE XII

**MULTIVARIATE NESTED LOGISTIC REGRESSION MODEL: ANY ILLICIT DRUG USE
OTHER THAN MARIJUANA IN PAST 30 DAYS**

Part A: Reduced model

	<i>OR</i>	95% CI
Female	1.00	(0.32, 3.11)
White	0.40	(0.11, 1.48)
Other race or more than one race	1.54	(0.41, 5.73)
Age	0.97	(0.93, 1.02)
HIV positive	2.46	(0.54, 11.31)
Serious mental illness	1.02	(0.38, 2.73)
Felony conviction	3.21*	(1.16, 8.86)
LR $\chi^2(7) = 12.82, p = .08$		

Part B: Full model

	<i>OR</i>	95% CI
Female	1.14	(0.35, 3.76)
White	0.36	(0.09, 1.49)
Other race or more than one race	4.30	(0.95, 19.53)
Age	0.97	(0.92, 1.02)
HIV positive	2.10	(0.39, 11.43)
Serious mental illness	0.72	(0.24, 2.15)
Felony conviction	3.20*	(1.09, 9.38)
Homeless in past year	3.57*	(1.20, 10.64)
Rent burden 1% to 50%	0.59	(0.16, 2.21)
Rent burden more than 50%	0.12*	(0.02, 0.61)
LR $\chi^2(10) = 27.49, p < .01$		
Model comparison: LR $\chi^2(3) = 11.80, p < .01$		
Hosmer-Lemeshow goodness of fit test: $\chi^2(8) = 6.57, p = .58$		
Link test: linear predicted value $\beta = 1.30, p = .01$		
linear predicted value squared $\beta = 0.10, p = .45$		
Tjur $R^2 = .18$		

Note. $n = 161$.

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

2. Regression of Positive FAST Screening for Alcohol Misuse

Table XIII shows the results of the nested logistic regression conducted for the dependent variable of receiving a score of three or more on the FAST assessment, which is considered a positive screen for alcohol misuse. The only variable that was significant in the reduced model was prior felony conviction, $OR = 4.68, p < .01$. In the full model, neither past-year homelessness nor rent burden was significantly associated with a positive FAST screening. Though both the full and reduced models were significant at $p < .01$, the model comparison test was not significant, confirming that the past-year homelessness and rent burden variables did not improve model fit. Even with prior felony conviction as the only significant predictor, the Hosmer-Lemeshow test indicated that the full model was an adequate fit for the data. When the link test was performed, the squared linear predicted value was not significant; however, the linear predicted value of the model was also not significant, indicating that the model did not have enough meaningful predictors (University of California at Los Angeles Institute for Digital Research and Education, 2013a). This suggests that although the model was statistically significant, the control and independent variables included did not explain much of the variation in alcohol misuse. Tjur R^2 was .14, a small effect size.

TABLE XIII

**MULTIVARIATE NESTED LOGISTIC REGRESSION MODEL: POSITIVE FAST
SCREENING FOR ALCOHOL MISUSE**

Part A: Reduced model

	<i>OR</i>	95% CI
Female	0.82	(0.32, 2.08)
White	0.86	(0.36, 2.05)
Other race or more than one race	0.96	(0.27, 3.38)
Age	1.00	(0.97, 1.04)
HIV positive	1.68	(0.39, 7.22)
Serious mental illness	1.64	(0.72, 3.74)
Felony conviction	4.68**	(2.15, 10.19)
LR $\chi^2(7) = 24.29, p < .01$		

Part B: Full model

	<i>OR</i>	95% CI
Female	0.82	(0.32, 2.10)
White	0.84	(0.35, 2.03)
Other race or more than one race	0.90	(0.24, 3.31)
Age	1.00	(0.97, 1.04)
HIV positive	1.66	(0.38, 7.23)
Serious mental illness	1.66	(0.72, 3.83)
Felony conviction	4.77**	(2.18, 10.45)
Homeless in past 12 months	1.12	(0.45, 2.79)
Rent burden 1% to 50%	1.20	(0.34, 4.26)
Rent burden more than 50%	1.42	(0.39, 5.24)
LR $\chi^2(10) = 24.70, p < .01$		
Model comparison: LR $\chi^2(3) = 0.40, p = .94$		
Hosmer-Lemeshow goodness of fit test: $\chi^2(8) = 3.62, p = .89$		
Link test: linear predicted value $\beta = 0.27, p = .68$		
linear predicted value squared $\beta = -0.49, p = .26$		
Tjur $R^2 = .14$		

Note. $n = 162$

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

3. Regression of Lifetime Injection Drug Use

Table XIV shows the results of the nested logistic regression conducted for the dependent variable of lifetime injection drug use. Because no participants in the zero rent burden category reported injection drug use, this variable acted as a “perfect predictor” and created challenges for model fit. So that the model could be fitted to the data using the remaining variables and given that rent burden was not significantly associated with injection drug use in the bivariate analysis, the regression was constructed with homelessness in the past 12 months as the only housing variable. The model was also evaluated using the Firth estimation method of logistic regression, which allows for perfect predictors (Allison, 2012b). Running the model using Firth estimation confirmed that rent burden was not associated with injection drug use; therefore the more parsimonious model using standard nested logistic regression and not including rent burden is reported here.

In the reduced model, age was significantly associated with lifetime injection drug use, $OR = 1.14$. The reduced model was significant, $LR \chi^2(7) = 27.06, p < .01$. In the full model, age retained its significant association with increased likelihood of lifetime injection drug use. Being homeless in the past 12 months was significantly associated with lifetime injection drug use, $OR = 4.59$. The full model was significant, $LR \chi^2(8) = 32.13, p < .01$. The model comparison test was also significant, $LR \chi^2(1) = 5.15, p = .02$, indicating that the model was a better fit for the data when past-year homelessness was included. The Hosmer-Lemeshow test and link test were not significant, suggesting good model fit and no major specification errors. Tjur R^2 was .25, indicative of a moderate effect size (Ferguson, 2009).

TABLE XIV

MULTIVARIATE NESTED LOGISTIC REGRESSION MODEL:
LIFETIME INJECTION DRUG USE

Part A: Reduced model

	<i>OR</i>	95% CI
Female	0.13	(0.01, 1.23)
White	2.18	(0.59, 8.11)
Other race or more than one race	0.81	(0.08, 8.63)
Age	1.14**	(1.04, 1.25)
HIV positive	6.56	(0.96, 44.90)
Serious mental illness	4.12	(0.98, 17.32)
Felony conviction	2.62	(0.71, 9.71)
LR $\chi^2(7) = 27.06, p < .01$		

Part B: Full model

	<i>OR</i>	95% CI
Female	0.14	(0.02, 1.32)
White	2.00	(0.52, 7.68)
Other race or more than one race	1.16	(0.10, 13.02)
Age	1.16**	(1.05, 1.27)
HIV positive	6.81	(0.90, 51.03)
Serious mental illness	3.79	(0.88, 16.38)
Felony conviction	2.52	(0.67, 9.44)
Homeless in past 12 months	4.59*	(1.23, 17.10)
LR $\chi^2(8) = 32.13, p < .01$		
Model comparison: LR $\chi^2(1) = 5.15, p = .02$		
Hosmer-Lemeshow goodness of fit test: $\chi^2(8) = 9.23, p = .32$		
Link test: linear predicted value $\beta = 1.11, p = .01$		
linear predicted value squared $\beta = 0.03, p = .75$		
Tjur $R^2 = .25$		

Note. $n = 163$

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

4. Regression of Having More Than One Sexual Partner in Past 30 Days

Table XV shows the results of the nested logistic regression conducted for the dependent variable of having more than one sexual partner in the past 30 days. Due to the low number of white participants and participants identifying as other races or more than one race who reported more than one sexual partner, these two categories were combined in this regression model, with African American participants as the reference category. In the reduced model, participants in the white/other race/more than one race category were less likely to report having more than one sexual partner than African American participants, $OR = 0.12$. The reduced model was significant, $LR \chi^2(6) = 20.24, p < .01$.

In the full model, past-year homelessness was not statistically significant ($p = .08$). Participants in the moderate rent burden category were significantly less likely than participants who had no rent burden to report having more than one sexual partner, $OR = 0.22$. When this model was run using the measure of rent burden based on comprehensive income, rent burden was not significantly associated with the dependent variable.

The full model was significant, $LR \chi^2(9) = 27.84, p < .01$. The model comparison test approached significance, $LR \chi^2(3) = 7.03, p = .07$. The Hosmer-Lemeshow test was not significant, indicating that the model was a good fit for the data. When the link test was performed, as with the model for alcohol misuse, the squared linear predicted value was not significant but the linear predicted value of the model was also not significant, indicating that the model may not have had enough meaningful predictors. Tjur R^2 was .17.

TABLE XV

**MULTIVARIATE NESTED LOGISTIC REGRESSION MODEL: MORE THAN ONE
SEXUAL PARTNER IN PAST 30 DAYS**

Part A: Reduced model

	<i>OR</i>	95% CI
Female	0.43	(0.11, 1.68)
White or other race/more than one race ^a	0.12**	(0.03, 0.55)
Age	0.96	(0.92, 1.01)
HIV positive	0.48	(0.54, 4.27)
Serious mental illness	0.64	(0.24, 1.73)
Felony conviction	1.82	(0.65, 5.12)
LR $\chi^2(6) = 20.24, p < .01$		

Part B: Full model

	<i>OR</i>	95% CI
Female	0.39	(0.10, 1.59)
White or other race/more than one race ^b	0.13*	(0.03, 0.63)
Age	0.97	(0.92, 1.02)
HIV positive	0.66	(0.07, 6.50)
Serious mental illness	0.68	(0.24, 1.92)
Felony conviction	1.78	(0.61, 5.16)
Homeless in past 12 months	2.64	(0.89, 7.79)
Rent burden 1% to 50%	0.22*	(0.05, 0.87)
Rent burden more than 50%	0.47	(0.12, 1.79)
LR $\chi^2(9) = 27.84, p < .01$		
Model comparison: LR $\chi^2(3) = 7.03, p = .07$		
Hosmer-Lemeshow goodness of fit test: $\chi^2(8) = 2.77, p = .95$		
Link test: linear predicted value $\beta = 0.62, p = .22$		
linear predicted value squared $\beta = -0.14, p = .42$		
Tjur $R^2 = .17$		

Note. $n = 162$

^a White participants and participants of other races or more than one race were combined due to the low number of participants in these categories reporting more than one sexual partner. African American participants were the reference category for the regression.

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

5. Regression of Having Sex Without a Condom in Past 30 Days

Table XVI shows the results of the nested negative binomial regression conducted for the dependent variable of having sex without a condom in the past 30 days. Negative binomial regression was used to model sex without a condom as a count variable; because its distribution was over-dispersed, negative binomial regression was used instead of Poisson regression (Orme & Combs-Orme, 2009). The Vuong test available in Stata indicated that a zero-inflated model was not a significantly better fit for the data than an ordinary negative binomial regression model, so ordinary nested negative binomial regression was used (University of California at Los Angeles Institute for Digital Research and Education, 2013b).

Initially having sex without a condom was modeled using the same set of predictors used in the other models; however, the link test was significant, suggesting specification error. Age and race were strong predictors in the initial model, so a new model was constructed that included an interaction term for race, a three-level categorical variable, and age, a continuous variable. The age variable was mean-centered prior to creating the interaction term. The revised model including the age-by-race interaction term is reported below.

In the reduced model, the incidence rate of sex without a condom was much lower for HIV positive participants, $IRR = 0.03$, and white participants, $IRR = 0.03$. The age-by-race interaction was also significant, with increased age being associated with a lower incidence rate of having sex without a condom for white participants but not for participants of other races in comparison to African American participants (the reference group), $IRR = 0.85$. The reduced model was significant, $LR \chi^2(9) = 38.24, p < .01$. In the full model, the variables of HIV status, white racial identity, and the white race-by-age interaction term retained their significance at $p < .05$. Participants in the moderate rent burden group had a significantly lower incidence rate of

sex without a condom compared with participants in the no rent burden category, $IRR = 0.17$.

The full model and the model comparison tests were both significant, suggesting that including the past-year homelessness and rent burden variables significantly improved model fit. The link test was not significant, indicating that adding the age-by-race interaction term corrected the specification error noted in the initial model.

TABLE XVI

**MULTIVARIATE NESTED NEGATIVE BINOMIAL REGRESSION MODEL:
SEX WITHOUT A CONDOM IN PAST 30 DAYS**

Part A: Reduced model

	<i>IRR</i>	95% CI
Female	1.99	(0.60, 6.63)
White	0.03**	(0.00, 0.19)
Other race or more than one race	1.21	(0.26, 5.76)
Age (centered)	0.98	(0.93, 1.03)
Age (centered)*white	0.85**	(0.76, 0.96)
Age (centered)*other race or more than one race	0.95	(0.84, 1.07)
HIV positive	0.03*	(0.00, 0.45)
Serious mental illness	1.19	(0.45, 3.13)
Felony conviction	2.37	(0.82, 6.90)
LR $\chi^2(9) = 38.24, p < .01$		

Part B: Full model

	<i>IRR</i>	95% CI
Female	2.31	(0.73, 7.28)
White	0.03**	(0.00, 0.24)
Other race or more than one race	1.53	(0.36, 6.56)
Age (centered)	0.99	(0.95, 1.03)
Age (centered)*white	0.83**	(0.74, 0.94)
Age (centered)*other race or more than one race	0.95	(0.86, 1.06)
HIV positive	0.06*	(0.00, 0.93)
Serious mental illness	1.70	(0.66, 4.39)
Felony conviction	1.65	(0.57, 4.78)
Homeless in past 12 months	1.86	(0.61, 5.72)
Rent burden 1 to 50%	0.17*	(0.04, 0.69)
Rent burden more than 50%	0.41	(0.10, 1.73)
LR $\chi^2(9) = 38.24, p < .01$		
Model comparison: LR $\chi^2(3) = 7.95, p = .047$		
Link test: linear predicted value $\beta = 1.02, p < .01$		
linear predicted value squared $\beta = 0.05, p = .32$		

Note. $n = 162$

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

6. Regression of Having Sex While Drunk or High in Past 30 Days

Table XVII shows the results of the nested negative binomial regression analysis conducted for the dependent variable of having sex while drunk or high in the past 30 days. Similar to the variable of having sex without a condom, negative binomial regression was used to model this variable as an over-dispersed count variable and the Vuong test indicated that zero-inflated negative binomial regression would not be a significantly better fit for the data, so ordinary negative binomial regression was used. In the reduced model, white participants in comparison with African American participants reported lower incidence rates, $IRR = 0.14$. Age was also associated with lower rates of having sex while drunk or high, with a 9% decrease in the incidence rate for each one-year increase in age. The reduced model was significant, $LR \chi^2(7) = 14.08, p < .05$.

In the full model, race was not significant but the age variable retained its significant association with reduced incidence of having sex while drunk or high. Participants who had been homeless in the past 12 months reported higher incidence rates of having sex while drunk or high, $IRR = 7.80$. Rent burden was not a significant predictor. The full model was significant, $LR \chi^2(10) = 24.52, p < .01$. The model comparison test was also significant, indicating that the model was a better fit for the data when past-year homelessness and rent burden were included. The link test was not significant, indicating that the model was not mis-specified.

TABLE XVII

**MULTIVARIATE NESTED NEGATIVE BINOMIAL REGRESSION MODEL:
SEX WHILE DRUNK OR HIGH IN PAST 30 DAYS**

Part A: Reduced model

	<i>IRR</i>	95% CI
Female	0.72	(0.11, 4.55)
White	0.14*	(0.03, 0.81)
Other race or more than one race	0.58	(0.07, 4.75)
Age	0.91*	(0.84, 0.99)
HIV positive	0.29	(0.02, 3.98)
Serious mental illness	0.55	(0.14, 2.22)
Felony conviction	2.25	(0.50, 10.04)
LR $\chi^2(7) = 14.08, p < .05$		

Part B: Full model

	<i>IRR</i>	95% CI
Female	0.80	(0.13, 4.80)
White	0.28	(0.05, 1.61)
Other race or more than one race	1.41	(0.18, 11.12)
Age	0.90**	(0.84, 0.97)
HIV positive	0.19	(0.01, 3.11)
Serious mental illness	0.39	(0.09, 1.75)
Felony conviction	2.98	(0.72, 12.39)
Homeless in past 12 months	7.80**	(1.77, 34.48)
Rent burden 1% to 50%	0.25	(0.03, 1.75)
Rent burden more than 50%	0.42	(0.06, 2.74)
LR $\chi^2(10) = 24.52, p < .01$		
Model comparison: LR $\chi^2(3) = 9.43, p = .02$		
Link test: linear predicted value $\beta = 0.94, p < .01$		
linear predicted value squared $\beta = -0.18, p = .09$		

Note. $n = 162$

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

7. Regression of Lifetime Sex Exchange

Table XVIII shows the results of the nested logistic regression analysis conducted for the dependent variable of lifetime exchange of sex for money, drugs, food, or shelter. Several predictors were significant in the reduced model. Female sex, having a serious mental illness, and prior felony conviction were all significantly associated with increased likelihood of lifetime sex exchange. In comparison with African American participants, white participants were significantly less likely to report engaging in sex exchange. The reduced model was significant, $LR \chi^2(7) = 47.49, p < .01$. Neither past-year homelessness nor rent burden was a significant predictor in the full model. The model comparison test was not significant, $LR \chi^2(3) = 2.99, p = .39$, confirming that the model was not a substantially better fit for the data when the housing variables were included. The Hosmer-Lemeshow and link tests were not significant, indicating that the model fit well overall and was not mis-specified. Tjur R^2 was .30, a moderate-to-high effect size reflecting the relatively strong associations between several of the control variables and the dependent variable (Ferguson, 2009).

TABLE XVIII

MULTIVARIATE NESTED LOGISTIC REGRESSION MODEL:
LIFETIME SEX EXCHANGE

Part A: Reduced model

	<i>OR</i>	95% CI
Female	3.69*	(1.23, 11.12)
White	0.05**	(0.01, 0.43)
Other race or more than one race	0.55	(0.13, 2.41)
Age	0.99	(0.94, 1.04)
HIV positive	3.88	(0.73, 20.62)
Serious mental illness	4.45*	(1.32, 15.00)
Felony conviction	5.14**	(1.71, 15.48)
LR $\chi^2(7) = 44.40, p < .01$		

Part B: Full model

	<i>OR</i>	95% CI
Female	3.85*	(1.24, 11.94)
White	0.06**	(0.01, 0.45)
Other race or more than one race	0.83	(0.18, 3.83)
Age	0.99	(0.94, 1.04)
HIV positive	3.77	(0.68, 20.92)
Serious mental illness	4.05*	(1.18, 13.94)
Felony conviction	5.24**	(1.71, 16.06)
Homeless in past 12 months	1.56	(0.50, 4.88)
Rent burden 1% to 50%	0.68	(0.18, 2.64)
Rent burden more than 50%	0.36	(0.09, 1.52)
LR $\chi^2(10) = 47.49, p < .01$		
Model comparison: LR $\chi^2(3) = 2.99, p = .39$		
Hosmer-Lemeshow goodness of fit test: $\chi^2(8) = 10.24, p = .25$		
Link test: linear predicted value $\beta = 1.34, p < .01$		
linear predicted value squared $\beta = 0.11, p = .17$		
Tjur $R^2 = .30$		

Note. $n = 162$

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

8. Composite Measure of Recent Risk

Table XIX shows the results of the nested negative binomial regression analysis conducted for the composite measure of recent risk. The distribution for this count variable was slightly over-dispersed ($M = 1.18$, $SD = 1.36$) and a Stata comparison test indicated that a negative binomial model would better fit the data than a Poisson model. The data was initially modeled using a zero-inflated negative binomial model and the Vuong test was significant, suggesting that the zero-inflated model may be preferred. However, there was no theoretical basis for modeling the zeros in the model separately from the count data, as it was assumed that the same independent and control variables would predict a participant having no or multiple risk behaviors. Other fit statistics indicated that the differences between the zero-inflated and standard negative binomial regression models were minimal or in some cases favored the standard model. For example the BIC measure based on the likelihood ratio chi-square (BIC') was 19.82 for the zero-inflated model and 11.21 for the standard model. Following the advice of Allison (2012a), standard negative binomial regression modeling was used.

As shown in Table XIX, the reduced model was statistically significant, $LR \chi^2(7) = 31.52$, $p < .01$. White participants reported reduced incidence rates of risk behaviors, $IRR = 0.41$. Each one-year increase in age was associated with a 2% reduction in the incidence rate of HIV risk behaviors. Participants with prior felony convictions had elevated incidence rates of risk behaviors, $IRR = 1.85$. In the full model, these control variables retained their statistical significance. Being homeless in the past 12 months was also associated with a higher incidence rate of HIV risk behavior, $IRR = 1.58$. The relationship between rent burden and the composite measure of recent risk was not statistically significant but trended toward participants in the moderate and high rent burden categories reporting lower incidence rates than participants in the

no rent burden category ($IRR = 0.64, p = .07$ and $IRR = 0.64, p = .09$ respectively). The relationship between membership in the high rent burden category and reduced incidence of risk did reach statistical significance when the model was re-run using the measure of rent burden that included illegitimate income. The full model was significant as was the model comparison test, $LR \chi^2(3) = 8.82, p = .03$, indicating that the model better fit the data when past-year homelessness and rent burden were included. The link test was not significant, suggesting that the model was not mis-specified.

TABLE XIX

**MULTIVARIATE NESTED NEGATIVE BINOMIAL REGRESSION MODEL:
COMPOSITE MEASURE OF RECENT RISK**

Part A: Reduced model

	<i>IRR</i>	95% CI
Female	1.17	(0.76, 1.81)
White	0.41**	(0.25, 0.67)
Other race or more than one race	0.79	(0.44, 1.42)
Age	0.98*	(0.96, 0.99)
HIV positive	0.89	(0.43, 1.84)
Serious mental illness	0.97	(0.66, 1.43)
Felony conviction	1.85**	(1.26, 2.72)
LR $\chi^2(7) = 31.52, p < .01$		

Part B: Full model

	<i>IRR</i>	95% CI
Female	1.18	(0.78, 1.78)
White	0.44**	(0.27, 0.71)
Other race or more than one race	0.95	(0.53, 1.70)
Age	0.98*	(0.97, 0.99)
HIV positive	0.91	(0.45, 1.86)
Serious mental illness	0.94	(0.65, 1.38)
Felony conviction	1.79**	(1.24, 2.60)
Homeless in past 12 months	1.58*	(1.07, 2.33)
Rent burden 1% to 50%	0.64	(0.39, 1.04)
Rent burden more than 50%	0.64	(0.39, 1.07)
LR $\chi^2(10) = 39.61, p < .01$		
Model comparison: $\chi^2(3) = 8.82, p = .03$		
Link test: linear predicted value $\beta = 1.03, p < .01$		
linear predicted value squared $\beta = -0.17, p = .42$		

Note. $n = 161$

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

E. Summary of Findings

The aim of this study was to better understand the relationship between housing-related variables, specifically prior homelessness and rent burden, and HIV risk behaviors among a sample of SRO residents. The study tested two hypotheses:

1. Among SRO residents, prior street homelessness will be associated with increased HIV risk behavior, when controlling for individual-level characteristics.
2. Among SRO residents, higher rent burdens will be associated with increased HIV risk behavior, when controlling for individual-level characteristics.

The findings indicate partial support for the first hypothesis. In the multivariate analyses, being homeless in the past 12 months was significantly associated with four of the study's eight dependent variables at $p < .05$: illicit drug use other than marijuana, lifetime injection drug use, having sex while drunk or high, and the composite measure of recent risk. This suggests that SRO residents who had been homeless in the past 12 months were more likely to engage in certain HIV risk behaviors, particularly those related to drug use, and to report multiple risk behaviors in the past 30 days, as indicated by the composite risk measure.

There is little support for the second hypothesis, linking higher rent burdens with increased risk behavior. However, the findings indicate a different relationship between rent burden and HIV risk: that participants who had no rent burden and no reportable income were more likely to engage in certain HIV risk behaviors than those who had a moderate (1% to 50%) or high (more than 50%) rent burden. The bivariate analysis of rent burden and the dependent variables (Table VI) suggested minor differences in HIV risk behavior between the moderate and high rent burden groups, with risks sometimes higher among the moderate rent burden group and sometimes higher among the high rent burden group. For most of the dependent variables,

though, participants in the no rent burden category reported notably higher levels of HIV risk behavior than participants in either the moderate or high rent burden categories. This relationship persisted in some of the multivariate models. Participants in the no rent burden category were significantly more likely at $p < .05$ than participants in the moderate or high rent burden categories to report illicit drug use other than marijuana, having more than one sexual partner, and having sex without a condom. Overall, these findings suggest that participants who had subsidies covering 100% of their rent because they had no reportable income were more likely to engage in some HIV risk behaviors.

The relationships between the two independent variables of prior homelessness and rent burden and the dependent variables were tested controlling for demographic factors (sex, race, age), HIV status, serious mental illness, and prior felony conviction. For each dependent variable except illicit drug use, the reduced model containing only the control variables was significant at $p < .05$, suggesting that the control variables contributed substantially to variations in HIV risk. White participants and older participants generally reported lower levels of HIV risk behaviors, while prior felony conviction was associated with increased risk in most of the models. In some models, such as lifetime sex exchange, the control variables were very strong predictors. Overall the multivariate models demonstrated good model fit, indicating that the combination of prior homelessness, rent burden, and the control variables comprised models that were good fits for the data. Tjur R^2 values calculated for the logistic regression models generally indicated small-to-moderate effect sizes, which are the typical magnitude for social science research (Ferguson, 2009).

V. DISCUSSION

This study examined the relationship between prior homelessness, rent burden, and HIV risk behaviors among a sample of adults living in SRO buildings in the Uptown neighborhood of Chicago. Prior homelessness was operationalized as a dichotomous indicator representing homelessness in the past 12 months and rent burden was operationalized as a three-level categorical variable representing no rent burden, moderate rent burden (1% to 50%), and high rent burden (greater than 50%) groups. In the multivariate analyses, prior homelessness and rent burden were associated with several HIV risk behaviors when controlling for demographic factors, HIV status, serious mental illness, and prior felony conviction. For example, participants who had been homeless in the past 12 months and participants in the no rent burden category were more likely to report use of illicit drugs other than marijuana in the past 30 days, controlling for the other variables in the model.

This chapter begins with a review of the study's purpose and hypotheses. Next, the main findings are discussed. Thirdly, key limitations of the study are reviewed. Lastly, implications of the study's findings for research and theory, policy, social work education and practice, and social justice are highlighted.

A. Study Purpose and Hypotheses

The main purpose of this study was to better understand the relationship between housing conditions, financial resources, and HIV risk by examining if HIV risk behavior was associated with prior homelessness and rent burden among SRO residents. The study was informed by a risk environment conceptual framework (Rhodes, 2002) as well as a broad body of literature linking homelessness and housing instability with HIV risk. Though past research has suggested that prior homelessness and rent burden may be associated with HIV risk (e.g. Dickson-Gomez

et al., 2009; Jenness et al., 2011; Stein et al., 2009), this study is unique in its exploration of these variables among residents of SRO housing. Specifically, the study examined two hypotheses:

1. Among SRO residents, prior street homelessness will be associated with increased HIV risk behavior, when controlling for individual-level characteristics.
2. Among SRO residents, higher rent burdens will be associated with increased HIV risk behavior, when controlling for individual-level characteristics.

B. Discussion of Findings

1. Discussion of the Sample

This study included a final sample of 163 Chicago SRO residents, after stringent inclusion/exclusion criteria were applied. Participants were selected primarily through face-to-face recruitment at nine privately owned SRO buildings in the Uptown neighborhood of Chicago. Since few empirical studies (e.g. Shannon et al., 2006) have examined the health, housing experiences, rent burdens, and risk behaviors of SRO residents, the descriptive characteristics of the sample provide an informative context about SRO residents' lives and backgrounds.

The sample was predominantly (78%) male, slightly above the national estimate of a 70-30 male-female sex ratio for SRO residents (National Coalition for the Homeless, 2009). This is not surprising given that one of the SROs in the sampling frame admitted only men. Though the sample was primarily African American (63%) and Caucasian (27%), a minority of participants who identified as other races (e.g. Asian American, Native American), as more than one race, and/or as Hispanic or Latino were also represented, reflecting the diversity of those who live in SROs as well as the Uptown neighborhood (Fisher & Schwieterman, 2008). Participants' ages ranged from 21 to 76. The mean age was 50 years, suggesting that the sample was mostly

composed of middle-age or older adults, a pattern that appears to be characteristic of SROs in Chicago and elsewhere (Hoch & Slayton, 1989; Hwang et al., 2011).

As expected, almost all of the participants were very low-income and the majority relied on disability or retirement benefits as their primary income sources. Among the minority of participants (14%) reporting legitimate paid employment, work was primarily low-wage, unstable, and/or temporary in nature, including jobs such as retail cashier, fast-food worker, security guard, or day laborer. Mean monthly take-home pay from legitimate employment was only \$146. An interesting finding was that in addition to benefits and employment, 44% of participants reported income from under-the-table or illegal sources, ranging from panhandling to selling drugs and averaging \$121 per month. Few studies researching housing and health have explored both legitimate and alternative income sources and how these may be related to both housing choices and health and risk behaviors.

Homelessness was extremely common in the sample, with 83% of participants reporting at least one homeless episode in their lifetimes per HUD's (2011) definition. This is an important finding, given that some earlier studies have conflated street homelessness and SROs or combined these conditions into a single "unstable housing" category (e.g. Aidala et al., 2005; Elifson et al., 2007; Neaigus, 2013) and few have documented the occurrence of homelessness among SRO residents. Also notable is that despite the prevalence of homelessness in the sample, participants exhibited considerable residential stability, with a mean of 35 and median of 17 months at their current SRO residence. This differs from other studies such as Shannon et al.'s (2006) study of SRO residents in Vancouver, Canada's Downtown Eastside neighborhood, two-thirds of whom reported living at their current residence for less than one year. One possible explanation is that the variety of social services available in the Uptown neighborhood may have

helped some participants to achieve residential stability. For example, 35% of participants received a housing subsidy via local service agencies, which participants anecdotally reported often required meeting regularly with a case manager, thus enabling the participant to access both social and financial support.

The sample also provides evidence of the high prevalence of physical and mental health disabilities among SRO residents, a phenomenon often noted among homeless individuals (e.g. HUD, 2007) but rarely documented specifically within the SRO context. Serious mental illness was especially common, reported by 68% of participants. Six percent of participants reported being HIV positive. This figure is comparable with other studies that have estimated HIV prevalence among homeless and unstably housed populations (e.g. Fogg & Mawn, 2010; Robertson et al., 2004) and notably higher than the general population HIV prevalence rate for Uptown, which at 2.1% is among the highest in the city of Chicago (Chicago Department of Public Health, 2011). Though caution should be used in comparing this study's HIV prevalence rate with other studies, given that this study did not apply a random sampling method nor test for HIV, it is also not apparent that the venue-based sampling approach used in this study would have favored selecting a disproportionate number of HIV positive participants. Finally, although it was not a focus of this study, participants also frequently reported other types of chronic health conditions, such as hypertension (41%), asthma (26%), diabetes (14%), and tuberculosis (10%).

In terms of HIV risk, it is notable that the majority of participants appeared to have no or very few HIV risk behaviors. A significant portion of the sample (42%) reported none of the drug or sex-related risk behaviors measured by the study, and 26% of the sample reported only one risk behavior. Therefore the majority of risk behavior documented in the study appears to be concentrated in the remaining third of the sample who reported two or more risk behaviors.

Given this pattern, it is important to consider in interpreting the results of this study and particularly with regard to drawing conclusions about SRO housing—still often perceived as inhabited primarily by transient and high-risk individuals—that the majority of SRO residents in this sample had years of residential stability, few HIV risk behaviors, and few other viable housing options, given their extremely limited incomes.

2. Discussion of the Relationship Between Prior Homelessness and HIV Risk for SRO Residents

This study hypothesized that prior street homelessness would be associated with HIV risk among SRO residents. In the bivariate analyses, a dichotomous indicator of lifetime street homelessness was not associated with most of the dependent variables. This lack of significance is perhaps a reflection of the fact that street homelessness was such a common experience among participants.

Some studies have found significant relationships between indicators of homelessness severity, such as the number of homeless episodes or the proportion of one's lifetime spent homeless, and HIV risk behaviors (Ennett et al., 1999; Stein et al., 2009; Stein & Nyamathi, 2004), though in other studies (e.g. Kennedy et al., 2013; Rice et al., 2012) these relationships have not been significant. In this study, indicators of the length of homelessness over the lifetime were not significantly associated with most of the dependent variables in the bivariate analyses. This may in part reflect measurement error; though the use of a calendar-based timeline-followback format appeared to help participants recall their housing patterns over the past 12 months, anecdotally it appeared challenging for many participants to estimate the amount of time they had been homeless over their lifetimes. Measurement error due to the long recall period

inherent in asking participants about homelessness over the lifetime may have limited the ability to uncover significant relationships with the dependent variables.

In this study, both a dichotomous and a continuous indicator reflecting homelessness in the past 12 months were associated with several of the dependent variables in the bivariate analyses, and the dichotomous indicator was selected for inclusion in the multivariate models. When controlling for the other predictors in the models, this indicator was significantly associated with four dependent variables: illicit drug use other than marijuana, lifetime injection drug use, having sex while drunk or high, and the composite measure of recent risk. Some of these relationships were quite strong; for example, participants who had been homeless in the past 12 months were 257% more likely than those who had not to report illicit drug use in the past 30 days and had a 680% increase in the incidence of having sex while drunk or high in the past 30 days.

These findings lend partial support to the hypothesis that prior street homelessness would be associated with increased HIV risk behavior for SRO residents. Given that the sample as a whole demonstrated considerable residential stability with an average of almost three years at their current address, it appears that there is a sub-sample of recently homeless participants who tended to engage in more risky behaviors, particularly drug-related risks including illicit drug use, injection drug use, and having sex while under the influence of drugs or alcohol. This is consistent with past research that has documented risk behavior patterns among currently homeless individuals in comparison with people who are stably housed (e.g. Elifson et al., 2007; Royse et al., 2000; Weir et al., 2007), but research has seldom explored the relationship between homelessness and risk behaviors among SRO residents.

Though it is beyond the scope of this study to draw conclusions about the causal factors underlying the relationship between SRO residents' prior experiences with homelessness and risk behaviors, one possibility is that SRO housing may provide a source of stability from which residents are able to access various services. For example, 51% of participants reported that they had a case manager whom they had seen in the past 30 days. Ultimately, this may enable some individuals to behave in less risky ways, such that participants who had lived in their SRO housing for longer periods of time were less likely to report several of the risk behaviors measured in the study than those who had been homeless in the past year.

It should also be noted that the study's findings on prior homelessness and HIV risk were likely impacted by the measures of homelessness that were used. This study primarily utilized categorical conceptualizations of homelessness based on the definition established by HUD. Other dimensions of homelessness and housing instability, such as whether or not participants perceived themselves to be homeless or how many times participants had moved over a given time period, may yield different relationships to HIV risk behaviors. It is important for future research to explore how various categorical, subjective, and quantitative indicators of homelessness and housing instability may be differentially linked to HIV risk for SRO residents.

3. Discussion of the Relationship Between Rent Burden and HIV Risk for SRO

Residents

This study hypothesized that higher rent burdens would be associated with increased levels of HIV risk behavior for SRO residents. The variable of rent burden had a large range, at one end of the spectrum including participants who had a rent burden of zero because they had a housing subsidy that covered all of their rent and at the other end encompassing participants whose monthly rent was several times greater than their monthly incomes. Because of this range

and the skewed nature of the distribution, it was determined that rent burden would be more meaningfully understood as a categorical variable. This allowed the analysis to distinguish between participants who had no rent burden, participants who had a moderate rent burden of 1% to 50%, and participants who had a high rent burden of greater than 50%. Although rent burdens above 30% are often considered “high,” 50% is increasingly being used in research as a cut-off point for defining high or severe rent burdens, particularly among low-income populations where rent burdens greater than 30% are unfortunately the norm (Joint Center for Housing Studies of Harvard University, 2013). Despite their frequent use in research studies and in guiding policies, it should be noted that such categorization schemes are an over-simplification of reality, as there is considerable within-category variation; for example, rent burden may be experienced quite differently between individuals at the lower and higher ends of the “moderate” category.

Two measures of rent burden were developed, one based only on participants’ legitimate income according to HUD’s (2009) definition and the other including legitimate as well as under-the-table and illicit sources such as selling goods like DVDs, selling drugs, panhandling, and cash-for-work jobs such as handing out flyers to advertise for local businesses. Though 44% of participants reported receiving some under-the-table income in the past month, this amount varied considerably, from several participants who reported only a few dollars to one participant who reported \$4,000 in income from selling drugs and weapons. Thus, the difference between the legitimate income only and comprehensive measures of rent burden was nil or minimal for most participants, but quite substantial for some of the sample.

When the multivariate models were developed separately using the measure of rent burden based on legitimate income only and the comprehensive measure, differences were noted for only two of the dependent variables. In comparison to the no rent burden group, being in the

moderate rent burden group was associated with increased likelihood of having multiple sexual partners only when the measure based on legitimate income was used, and being in the high rent burden category was associated with lower incidence of risk on the composite measure of recent risk only when the comprehensive measure was used. The fact that only these two differences were noted may underscore the finding that higher levels of HIV risk behavior were reported by participants in the no rent burden category, in comparison with the moderate or high rent burden categories. Membership in the no rent burden category did not change according to the legitimacy of income source (e.g. these participants did not pay any rent due to having a full rental subsidy, and thus were counted in the “no rent burden” category regardless of if the legitimate income or comprehensive measure of rent burden was used).

Given that the differences between the two measures of rent burden in the multivariate analyses appeared to be minor, the multivariate models employing the legitimate income measure were reported on in the analyses. This is consistent with other studies examining rent burden and health (e.g. Dickson-Gomez et al., 2009; Kirkpatrick & Tarasuk, 2011) and also makes it clearer to interpret the policy implications of the findings, described further below, since housing assistance programs funded through HUD and other agencies are based on legitimate income. Nonetheless, learning about participants’ under-the-table income provides a useful context for the study and helps to explain, for example, how some participants with very little legitimate income were able to pay their rent and make ends meet.

In the multivariate analyses, rent burden was significantly associated at $p < .05$ with three of the dependent variables: illicit drug use, having more than one sexual partner, and having sex without a condom. Surprisingly, these relationships were not in the direction predicted by the hypothesis; that is, it was not participants in the highest rent burden category but rather those in

the no rent burden category who were most likely to engage in these HIV risk behaviors.

Differences in HIV risk behavior between participants in the moderate and high rent burden categories appeared to be minimal.

One possible explanation of why high rent burden was not associated with HIV risk in this study is that rent burden was quite high for the sample as a whole; thus, a linear relationship between rent burden and HIV risk might be observed in larger population with a more normal distribution of rent burdens, but not in this study's sample of primarily high-rent burden individuals. Since most of the sample was very low-income, in actuality there may have been little difference between the "moderate" and "high" rent burden groups (e.g. if a person's monthly income is \$700, his resources are still quite limited whether he is paying 30% or 50% of his income as rent). The association between having no rent burden and certain HIV risk behaviors was not expected. Other research has suggested that access to housing subsidies and supportive housing may be associated with reduced HIV risk for some populations (Dickson-Gomez et al., 2011; Weir et al., 2007). However, the participants in the no rent burden category in this study were unique in that they were living in independent subsidized SRO housing with no legitimate income of their own. In a sense, these participants could be considered as having rent burdens of 100%, as their situation is akin to that of someone whose entire income goes toward rent.

Though the dynamics of this particular housing situation have rarely been studied, it seems possible that the need to generate income to cover basic household and personal expenses such as food, hygiene items, or transportation—even when one's rent is paid for—could have been an impetus for engaging in risk behaviors such as having multiple sexual partners (seeking financial support from sexual partners in a common pattern among unstably housed men and

women; see for example Davey-Rothwell, Latimore, Hulbert, & Latkin, 2011). Another possibility is that the stress of living independently with no income could have been a factor in risk behaviors such as the use of illicit drugs, or that these participants could have been allowing their living spaces to be used by other drug users as a safe location for drug use, in exchange for either money or a cut of the drugs. The latter phenomenon was noted in a study by Dickson-Gomez et al. (2009).

It is also possible that other factors related to rent burden but not measured by the study may have affected the findings. For example, a person's residential history and the amount of time he or she had managed living with a particular level of rent burden may have affected behaviors and risks. In sum, although this study documented an unexpected link between having no rent burden and some HIV risk behaviors, the dearth of research on rent burden and its association with health and HIV risk makes it difficult to contextualize this finding and speculate on its possible causes and meanings. Further research utilizing larger samples of participants with a range of rent burdens is needed to better understand the potentially complex dynamics between various sources of income, housing subsidies, rent, and HIV risk for people living in SROs and other types of housing.

4. Discussion of the Control Variables and Additional Findings

In addition to the significant relationships between prior homelessness, rent burden, and HIV risk, several of the control variables in this study were also associated with the dependent variables in the bivariate and multivariate analyses. In terms of demographic variables, there was a trend toward women being less likely to report lifetime injection drug use and more likely to report lifetime sex exchange. This is consistent with some past research (Robertson et al., 2004; Weiser et al., 2009). However, sex was not significantly associated with most of the dependent

variables. The relatively small number of women in the study ($n = 36$, including two male-to-female transgender participants included in this category for analysis) limited the ability to detect significant relationships between sex and the other variables.

With regard to race, African American participants were more likely to report certain HIV risk behaviors—such as having more than one sexual partner, having sex without a condom, and lifetime sex exchange—than white participants or participants of other races. Although disproportionately high prevalence of HIV has been observed among African Americans, research suggests that this racial disparity is not well explained by differences in HIV risk behavior (Oster et al., 2011). More research is needed to better understand racial disparities in HIV including potential differences in risk behaviors.

There appeared to be a negative linear relationship between age and some of the dependent variables, with the likelihood of behaviors such as having sex while drunk or high and the incidence of total recent risk behaviors decreasing with each year of age. This finding is consistent with past research indicating that older adults tend to demonstrate fewer HIV risk behaviors and are less sexually active, though they may still be at risk for HIV and other infections due to a lack of information, lower rates of testing, and aversion to condom use (Kohli et al., 2006). The fact that age was represented in the analyses as a continuous variable may have affected the findings, as it is possible that age may have been associated with other variables if represented differently (e.g. as a categorical variable or median split).

The total number of participants reporting HIV positive status in this study was small ($n = 9$). Since biological HIV testing was not used, it is possible that more participants were HIV positive but either did not know their status or chose not to report it. Rates of HIV testing were relatively high among participants, with 89% of participants not reporting HIV positive status

reporting at least one previous HIV test in their lifetimes and 62% reporting a test within the past two years. There did not appear to be many significant differences in risk between participants who had a recent HIV test and those who had not; however, participants' test histories could not be verified, and participants' reasons for choosing whether or not to get tested, which could be relevant to risk, were not assessed.

Participants who reported being HIV positive were significantly less likely to have had sex without a condom in the past 30 days. This is consistent with past research suggesting that people do often reduce risks such as unprotected sex when they know they are HIV positive (Marks et al., 2005). The small total number of HIV positive participants likely explains why HIV status was not significantly associated with most of the dependent variables.

Having a serious mental illness was included as a control variable because it has been associated with higher levels of drug and sex-related HIV risk behaviors in other research (Himelhoch et al., 2011; Senn & Carey, 2008). In this study, serious mental illness was associated in the multivariate analyses at $p < .05$ only with the dependent variable of lifetime sex exchange. One possible reason why this variable was not a good predictor is that mental illness appeared to be extremely common in the sample, with 68% of participants reporting mental illness diagnoses such as major depression, bipolar disorder, and schizophrenia. This study employed only a self-report measure of mental illness and did not attempt to independently assess diagnostic criteria. Although self-reported diagnoses have been used in other research on health and housing (e.g. Palepu et al., 2010; Zlotnick & Zerger, 2008), it is difficult to know the extent of potential errors in participants under or over-reporting mental health diagnoses and how this may have affected the findings.

Criminal justice history was measured through multiple indicators, including lifetime incarceration, incarceration in the past 12 months, and prior felony conviction. A dichotomous indicator of felony conviction was selected for the multivariate analyses, as this indicator was associated with several dependent variables in the bivariate analyses and is also of theoretical importance. In other studies, prior felony conviction has been associated with risk behaviors including drug use, drug trafficking, and sex work, often attributed to the difficulties that ex-felons face in securing legitimate employment, services, and housing as well as the trauma of long periods of incarceration (Freudenberg, 2001; Lichtenstein, 2009). In the multivariate analyses for this study, prior felony conviction (experienced by 48% of the sample) was associated with illicit drug use in the past 30 days, alcohol misuse, lifetime sex exchange, and increased number of risk behaviors on the composite measure of recent risk. This adds further support to the growing body of evidence that criminal justice system involvement is a critical part of the HIV risk context in U.S. cities and especially for African Americans, who are vastly over-represented in this system (Fullilove, 2011).

It is important to note that there may have been interactions among the predictor variables, the impact of which was not measured by the study. For example, the bivariate analysis indicated that African American participants were more likely to report a felony conviction. It is possible that race and felony conviction could interact to produce different effects on HIV risk, such that there could be a differential effect of having a felony for African Americans versus participants of other races, for instance. Here, the notion of syndemics—the idea that multiple social factors may interact to contribute to a variety of health conditions and diseases, which in turn may co-influence each other—is critical for capturing the dynamics of a wide range of social and biological determinants of health (Egan et al., 2011; Singer et al., 2006).

Though this study lacked the sample size and measurement precision to investigate such interactions, this is an important direction for future research.

In summary, varying combinations of the study's two independent variables—prior homelessness and rent burden—and the control variables were associated with the HIV risk behaviors measured by this study. Overall, the findings indicate that demographic factors like age and race, health and social factors like HIV status and criminal justice history, and housing-related variables like prior homelessness and rent burden are all important in understanding the HIV risk of SRO residents. This finding is consistent with the risk environment theoretical framework, which posits that individual as well as environmental (e.g. housing-related) variables jointly interact to influence the context of risk (Rhodes, 2002; Rhodes et al., 2005). It follows that rather than thinking of SRO residents as an “at risk” population, it may be more meaningful to consider how the individual traits of these residents interact with their environments in ways that discourage or facilitate risky behaviors.

C. Limitations

The study's findings must be interpreted in light of several limitations. These include limitations pertaining to study design; the study sample; and measurement, instrumentation, and data analysis.

1. Limitations Related to Study Design

A main limitation of the study is that its cross-sectional design poses a threat to internal validity. A causal relationship between prior homelessness or rent burden and HIV risk behaviors cannot be inferred, as other unmeasured variables could have affected both participants' housing statuses and HIV risk. Although the study establishes a level of covariance between the predictor variables and certain HIV risk behaviors, and the 30-day time period used to measure most of the

risk behaviors helps to verify appropriate temporality between the predictors and dependent variables, the study does not provide a basis for inferring causality. A stronger design such as a longitudinal study tracking changes in participants' housing conditions and HIV risk behaviors over time would be needed to reduce threats to internal validity.

The design of the study also inherently limited its scope. The focus of this study was to examine homelessness and SRO housing as micro risk environments, and to highlight rent burden as an economic facet of these environments that may influence risk. The risk environments of homelessness and SROs were compared by assessing histories of homelessness among current SRO residents. An alternative design would have been to compare the HIV risk behaviors of a sample of SRO residents with a sample of currently homeless individuals. Though it would have required more resources and a larger sample size, this approach would be a more direct way of studying homelessness and SROs as different risk environments and may have yielded other insights. Another limitation is that this study focused only on micro risk environments. As described in Chapter I, meso and macro environments can also exert important influences on risk. This study was not designed to assess how meso-level factors, such as neighborhood-level norms about drug use and availability, or macro-level factors like laws and policies related to substance use and affordable housing might affect SRO residents and their risks and choices. Further research would be needed to isolate these factors and assess their influences.

2. Limitations Related to the Sample

External validity is limited by the study's use of a non-probability sampling approach. The extent to which the sample is representative of the Uptown SRO population from which it was taken is uncertain. Further, since the study focused on one geographical area, the results may

not generalize to SRO residents in other Chicago neighborhoods or in other cities. Though there were methodological reasons for focusing on a single geographical area in selecting the sample (e.g. to control for potential neighborhood-level influences on the dependent variables), a downside is the reduced ability to generalize the results.

There are also some limitations in terms of the veracity of the sample and verifying participants' identities. Because participants did not have to produce identification showing their addresses to participate in the study, it is possible that some participants falsely posed as SRO residents, or tried to complete the study more than once. The decision not to ask for identification was made to protect participants' confidentiality, and the fact that recruitment was conducted onsite at SROs and over a short period of time should have reduced the likelihood of non-SRO residents participating or participants taking part in the study more than once. Additionally, participants whose data closely matched that of another participant in the dataset were removed from the analyses on the suspicion that they could have completed the survey more than once, as described in the Results section. Nonetheless, the final sample may have included non-SRO residents or duplicate participants.

Other limitations pertain to sample size. Due to resource limitations, the total sample size was relatively small for a quantitative survey-based study, though the prospective power analysis indicated that the sample size was adequate to detect small-to-medium effect sizes. Further, because housing status (e.g. being a current SRO resident) was the main sampling criterion, participants with a range of risk behaviors were included in the study. Thus, the final sample included many participants who reported no or very few HIV risk behaviors, and a relatively small number of participants apparently engaging in multiple risk behaviors. Much HIV research is conducted using samples composed entirely of people who have a history of engaging in risky

behaviors, such as injection drug users, sex workers, or sexually active MSM. Such studies have more statistical power to detect variations in risk behavior and can also assess risks in greater detail. For example, a study of MSM might explore if participants had recently had unprotected anal receptive sex, among the riskiest types of sexual contact in terms of potential for HIV transmission (Vittinghoff et al., 1999). It was not possible to assess risk behaviors in this level of detail with the sample available for this study.

Another limitation is that the relatively small sample size curtailed the ability to conduct detailed analyses of subpopulations of SRO residents, such as women or HIV positive residents. It would be necessary to purposefully oversample these subpopulations to get a larger sample to analyze in more detail. Finally, the study design and sample size did not allow for building-level analysis. It is possible that some risk behaviors could have varied according to building; for example, drug use could have been more widespread at one SRO but less common at another building with stricter management policies. However, to preserve confidentiality addresses were not recorded in the data collection process, and a large sample size is generally needed to make such group-level comparisons (Fraser, Richman, Galinsky, & Day, 2009).

3. Limitations Related to Measurement, Instrumentation, and Analysis

There are several limitations to consider regarding the study's approaches to measurement, instrumentation, and data analysis. First, although the survey instrument developed for this study was pilot-tested prior to implementation, the pilot phase was brief and involved a very small sample of four SRO residents. Additional pilot testing may have allowed for further insight into the variables and target population and refinement of the survey. Because the survey mainly used questions from previously developed instruments (such as the RBA) that have demonstrated adequate reliability and validity in other studies, extensive testing and

evaluation of the survey was not conducted. Though the previous testing of many of the survey items in past research provides some confidence, it is not possible to know the true reliability and validity of the survey items for this sample.

In terms of construct validity, mono-method bias is a concern because the study relied exclusively on self-report data, which is prone to underreporting. The use of non-self-report measures such as HIV testing could have improved construct validity for some of the variables measured by the study. Social desirability bias is also a concern, given the sensitive nature of survey topics such as drug use and sexual risk. Though the extent of social desirability bias is difficult to measure precisely, it is widely acknowledged that this bias leads to the underreporting of sex and drug-related risk behaviors in HIV research (Gibson, Hudes, & Donovan, 1999). Interviewer-administered surveys are particularly prone to this bias, and use of a computer-administered self-survey approach could have helped to reduce it (Bradburn et al., 2004). Further, some research suggests that male or female homeless individuals are more willing to report substance use behaviors to male interviewers (Johnson & Parsons, 1994); interviews for this study were conducted primarily by the female PI. Thus, the actual prevalence of risk behaviors among the sample in this study is likely higher than the results reflect, though it is not possible to know the exact impact of this bias. This study did not attempt to measure other factors that may affect social desirability bias, such as participants' level of comfort discussing sexual topics or participants' need for social approval (Gibson et al., 1999).

Recall bias is another potential source of error in the study, as the survey required participants to provide a great deal of retrospective data on their risk behaviors, housing situations, and other variables. Recall bias is generally reduced for shorter recall periods, such as the 30-day time period used for most of the study's dependent variables (Bradburn et al., 2004).

However, some questions required the participant to reflect on much longer periods of time, such as the questions about lifetime homeless episodes. Though longer recall periods are appropriate for highly salient events (Bradburn et al., 2004), anecdotally it appeared that many participants had difficulty recalling their experiences with homelessness over their lifetimes. This problem seemed more pronounced for participants who had been homeless often and thus for whom homelessness many have been less salient.

There are some key limitations regarding the validity of the measurement of the dependent variables. Because risk behaviors were relatively rare in the sample, as described above, it was necessary to use somewhat broad definitions of risk for the dependent variables. For example, one of the indicators of sexual risk was having sex without a condom in the past 30 days. In terms of actual risk of HIV transmission, having sex without a condom could be very safe, for example if both partners are monogamous and have tested negative for HIV and other sexually transmitted infections, or very risky, such as if one's partner is not monogamous. The measurement of the dependent variables in this study did not reflect these variations, which are important to understanding the true HIV risk implicit in each "risk behavior." In addition, the 30-day recall period used to measure these variables may not be indicative of participants' long-term behavior patterns.

Finally, there are some limitations to consider pertaining to the statistical analysis of the data. Due to the relative rarity of risk behaviors such as illicit drug use, logistic regression was used in the multivariate analysis for many of the dependent variables. Reducing a multifaceted phenomenon such as drug use, which involves features such as the quantity and frequency of use, to a dichotomous indicator for inclusion in a logistic regression model invariably means that much of the variability and complexity of such a variable is not able to be modeled. Another

limitation is that there is an inflated risk of a Type I error, due to the number of analyses that were conducted. Given the exploratory nature of this study, alpha levels were not adjusted to account for this possibility, and it should be acknowledged that this type of error may have occurred. In addition, a limitation is that there may have been meaningful interactions among the predictor variables that were not tested in the models.

D. Implications

Despite these limitations, the study has several important implications for research and theory, policy, social work education and practice, and social justice.

1. Implications for Research and Theory

This study addresses an important gap in the housing and HIV risk literature. As described in the literature review, many studies of housing and HIV risk have used imprecise definitions of housing conditions, and often neglected to include SRO-dwelling populations. This study is one of few to quantitatively examine the HIV risk behaviors of SRO residents, and to examine the links between HIV risk and two important dimensions of housing for this population: prior homelessness and rent burden. Since much of the research on SROs has focused on buildings that were operated by public or nonprofit housing authorities and functioned as supportive housing (e.g. Cunningham et al., 2005; Sohler et al., 2007), where the provision of onsite services may affect health behaviors and other outcomes, this study also makes a unique contribution in that its sample was selected solely from privately owned for-profit buildings.

This study adds to the literature on housing and HIV risk as well as to a broader body of interdisciplinary scholarship exploring the manifold and intricate ways in which housing and health are connected. For example, the Health and Housing in Transition study is a Canadian

longitudinal research initiative that tracks health outcomes among a cohort of homeless and unstably housed individuals, including SRO residents (Hwang et al., 2011). The present study can complement the findings of larger national and international research efforts such as the Health and Housing in Transition study by providing detailed descriptions and analyses of the risk behaviors and characteristics of one population of vulnerably housed adults in one city. As a survey-based inquiry, the present study can also complement insightful qualitative research on aspects of SRO and other hotel housing, such as Lazarus et al. (2011) and Lewinson (2010).

In addition, this study yields implications for theory-building. Although the risk environment framework (Rhodes, 2002; Rhodes et al., 2005) has been applied to study the production of risk in a variety of settings including shooting galleries, brothels, and prisons, it has been less commonly utilized in housing-related research. This study helps to demonstrate the utility of conceptualizing housing conditions and specifically SROs as residential risk environments, expanding the scope of applicability of this theoretical framework. The study also highlights rent burden as an important economic mechanism of residential risk environments that warrants further attention and research. Generally speaking, the significance of prior homelessness and rent burden as predictors of some HIV risk behaviors suggests that many theories of HIV prevention that focus primarily on individual traits without adequate attention to environmental variables, such as the AIDS risk reduction model (Catania et al., 1990), may be incomplete and limited in their ability to conceptualize and predict risk.

On a broader level, the focus and findings of the current study are consistent with a widespread shift in research and policy toward acknowledging the influence of the social determinants of health (Commission on the Social Determinants of Health of the World Health Organization, 2008). Within this movement is a growing recognition of the importance of

geographic influences and specifically housing conditions on health, a subject reflected in places ranging from the theme of the 142nd meeting of the American Public Health Association in 2014 (“Healthography: How where you live affects your health and well-being”) to the provisions of the U.S. National Prevention Strategy, a key component of the Affordable Care Act that includes the creation of “healthy and safe community environments” as a core health promotion strategy and makes repeated mention of the health-housing connection (National Prevention Council, 2011, p. 7). The present study is yet another example of some of the ways in which geography and housing are intimately linked with health, a topic that will likely continue to shape health policy, research, and interventions for years to come.

2. Implications for Policy

This study also has important implications for policy related to housing and health. First, the study’s findings may inform policy about SROs, which have figured controversially in many cities’ housing plans. Although it is widely acknowledged that SROs are potential bastions of affordable housing—an increasingly scarce resource in many cities—there have been few large-scale policy efforts to preserve SROs (Merrifield, 2002). Following a national trend, in recent years several SROs in and near the Uptown neighborhood of Chicago have closed, often purchased by developers who plan to renovate and convert the buildings into more upscale apartments or condominiums. For example, the developer FLATS Chicago has purchased at least six North Side SRO buildings in the past few years and has converted or is in process of converting most units in these buildings to luxury “micro studios,” some of which will rent for more than \$1,000 per month (Conrad, 2012; Kunichoff, 2013). One of the SROs originally included in the sampling frame for this study, the Chateau Hotel, was sold to a developer as this

study was being planned; the last of its residents were evicted in June 2013 so that the building could be gutted and renovated (Yousef, 2013).

There are numerous potential advantages and disadvantages of SROs as an affordable housing resource, and this study was not designed to comprehensively review these factors or provide definitive guidance on SRO housing policy. However, the findings of the study do suggest that there may be a role for SROs to play in the urban housing landscape. Given that the mean monthly legitimate income of participants in the sample was just \$722, few other housing options were available to most study participants. Considering their limited financial resources, it is perhaps not surprising that most of the participants had experienced homelessness at some point in their lives. For many participants, SRO housing appeared to provide a viable long-term alternative to homelessness, as evidenced by the lengthy periods of time that most participants tended to stay at their current SRO address ($M = 35$ months; notably 36 participants reported living at their current SRO for five or more years, and 10 participants reported 10 or more years). Though it is difficult to quantify the impact of SRO housing as an alternative to homelessness, the fact that participants who had been homeless in the past 12 months were more likely to engage in certain HIV risk behaviors such as illicit drug use or having sex while drunk or high suggests that SRO housing may provide a level of residential stability from which some individuals are able to reduce their risk behaviors.

Based on these findings and the ongoing loss of SRO housing stock in many cities, it stands to reason that policy efforts should be enacted to preserve SROs as a relatively affordable and stable housing option for low-income adults. Increased demand for rental housing following the foreclosure crisis and a subsequent shortage of affordable rental housing in general means that preserving housing options for those with the least financial resources is more important and

perhaps more challenging than ever (Joint Center for Housing Studies of Harvard University, 2013). Though the City of Chicago's proposed housing plan for 2014-2018 does not include provisions for SRO preservation, it states that "all residents should have access to quality affordable housing, including the homeless" (Chicago Department of Planning and Development, 2013, p. 5). Advocacy groups such as the Chicago Coalition for the Homeless (2013) have suggested that to make this goal a reality, the city's housing plan should provide for the protection of the city's SRO housing, for example through a city ordinance granting tenants a right of first refusal in SRO buildings that are for sale. Other researchers and policy advocates have suggested that providing assistance to SRO building owners to ensure that all housing codes are being fully followed and partnering with nonprofits to link SRO residents to services would be worthwhile investments to improve the quality and safety of SRO housing (Evans & Strathdee, 2006; Gurstein & Small, 2005). Further research on the housing histories, health needs, and risk behaviors of SRO residents could provide a basis for candid policy discussions on the pros and cons of SROs as a housing option and may bolster policy arguments for SRO preservation and expanded service provision.

One of the SROs included in this study's sampling frame, the Wilson Men's Hotel, is experimenting with a partnership approach to improve service access for its residents. In December 2013 it was reported that the Uptown alderman, James Cappleman, had partnered with the Chicago Department of Family and Support Services to provide funding for a full-time case manager from a local social services organization to be placed at the hotel (Uptown Update, 2013). The case manager will be a source of onsite support to residents and link them with resources such as social services and employment information. The financial needs as well as the

high rate of physical and mental health problems reported by the sample suggest that many participants in this study could benefit from such partnerships.

This study also has implications for policy on rental subsidies that are designed to keep housing affordable. Since the 1970s, voucher-based rental assistance programs—in which qualified low-income tenants select their own apartment and pay 30% of their income as rent, with the voucher paying the remainder—have been a cornerstone of the United States’ affordable housing policy (Bratt, 1997). About one-third of participants in this study received a voucher-based rental subsidy. Although SROs are considered affordable in comparison to many other types of housing, it is clear that many participants, most obviously those who had no legitimate source of income, would not have been able to afford the rental cost of an SRO unit without a subsidy. The findings of the study thus suggest that long-term rental assistance allowed some study participants to remain housed in SRO units rather than becoming homeless, which is one of the goals of such policies (Apicello, 2010).

Rental subsidies also clearly impacted the rent burdens of study participants. By capping rental costs at 30% of one’s income, rental subsidies limit rent burden to a level that is considered affordable (Hulchanski, 1995). Mean rent burden (based on the legitimate income only) for the sample was 52%, well above the 30% affordability benchmark. The true weight of rent burden on the study participants becomes even more apparent, though, in comparing rent burden for participants who had subsidies and those who did not: the mean was 27% for the former and 65% for the latter. Thus, even for residents of “affordable” SRO housing, rent burden was extraordinarily high for many of the participants who did not have subsidies.

Some researchers have suggested that expanding rental subsidies and other affordable housing strategies would be a sound public health investment, leading to improved health

outcomes as well as preventing homelessness (Shubert & Bernstine, 2007). For example, studies have indicated that providing rental assistance along with supportive services to HIV positive people tends to improve health outcomes and medication adherence, leading to better rates of viral suppression and ultimately reducing the likelihood of a positive person transmitting HIV to another person—potentially saving lives as well as medical and related expenses (Hawk & Davis, 2012; Holtgrave et al., 2007). Such policy recommendations are consistent with research showing that higher rent burdens are associated with increased risk behavior; it would follow that subsidies to decrease rent burden could also have the effect of decreasing risk (Dickson-Gomez et al., 2009, 2011).

However, the findings of this study suggest that income more broadly, and not just rent burden, is critical to understanding the risk context of unstably and/or vulnerably housed adults. As described above, the relationship between rent burden and risk was not linear, as participants who had had no legitimate income and had a subsidy covering 100% of their rent (and therefore had no rent burden) were the most likely to engage in certain risk behaviors. This pattern suggests that not having a reliable source of income may be associated with risk, even when one's rent is covered. Studies such as Riley et al. (2005) and Davey-Rothwell et al. (2012) have linked the receipt of reliable cash income with reduced risk behaviors among homeless and unstably housed adults. Therefore, it seems that programs that provide rental subsidies should also take actions to help participants increase their incomes, either through applying for benefits or finding pathways to employment—particularly for those participants who have no income at the time they begin receiving the subsidy. A related advocacy issue is to examine how prior involvement in the criminal justice system—a very common phenomenon among participants in

this study—affects people’s abilities to obtain benefits and/or employment and to advocate for policies that increase support and employment opportunities for ex-offenders.

3. Implications for Social Work Education and Practice

The study findings have implications for social work education and practice. Regarding education, this study and its findings may be of interest to students who want to work with homeless and unstably housed populations or who are interested in HIV prevention. Beyond students with these specific practice foci, the study is relevant to social work education more broadly as a clear example of the person-in-environment paradigm. Though the person-in-environment paradigm is widely referenced in social work education and considered a hallmark of the profession, the impact of the environmental side of the equation is often less clear to students and practitioners (Johnson, 1999). For example, Pease (2003) has argued that because social work education tends to emphasize individual pathology and individual strengths, most social workers tend to think about the person-in-environment model in terms of how social work can help individuals adjust to their environments, rather than considering how changes to environmental structures could affect clients’ wellbeing and ultimately lead to a more equal distribution of power and resources in society.

This study provides an example of how different aspects of the environment can influence individuals’ health and choices, as well as the potential of structural-level interventions to affect this context. The risk environment conceptual framework (Rhodes, 2002) is consistent with social work’s person-in-environment paradigm in many ways, and its application in this study provides an illustration of how factors at the macro, meso, and micro levels of the environment may influence SRO residents’ HIV risk. The study’s findings are a clear indication that neglecting environmental factors such as the housing environment and rent burden may

yield an incomplete understanding of HIV risk; others have suggested that it is precisely this preoccupation with the individual at the expense of the environment in research, policy, and intervention design that has allowed the HIV epidemic to proliferate among disadvantaged populations in the United States and around the world (Blankenship, Friedman, Dworkin, & Mantell, 2006). The relationship between homelessness, rent burden, and HIV risk in this study suggests that interventions to improve housing stability, affordability, and access could affect HIV risk, along with traditional individual risk reduction counseling approaches. In social work education (e.g. practice or human behavior in the social environment courses), this finding can be used as an example of “indirect work” to improve client outcomes by intervening in the environment (Johnson, 1999).

In terms of practice, this study points to opportunities for targeted intervention and prevention efforts to reduce HIV risk among this vulnerable population. The fact that participants who had been homeless in the past 12 months were more likely to engage in some types of risk behaviors suggests that it is critical to provide supportive services to individuals transitioning from homelessness to SRO housing. Though the HIV risk context of moving from homelessness to independent housing has seldom been explored, other research has noted the potential challenges of making this transition and the need for a range of flexible and intensive support services, such as home-based case management (Levitt et al., 2013). In terms of interventions for HIV prevention, although a multitude of evidence-based HIV risk reduction interventions have been developed for individuals and groups, very few have been specifically designed or evaluated with homeless populations or those transitioning from homelessness to housing (CDC, 2012). Cederbaum, Wenzel, Gilbert and Chereji (2013) suggest that HIV risk reduction programs for homeless and unstably housed individuals need to directly acknowledge the experience of

homelessness and how it affects people's risks and choices, as well as build upon the strengths and resilience that homeless individuals have developed to survive in their environments. Such an intervention approach is consistent with the social work practice principles of incorporating the environmental context into services and building upon client strengths.

The study findings also indicate that individuals who are housed and receive a rental subsidy but have no reliable income source may be more likely to engage in some risk behaviors. Thus, this group may also benefit from tailored HIV prevention and risk reduction interventions. Since research has linked having a reliable income to reduced risk (Davey-Rothwell et al., 2012; Riley et al., 2005), services to connect individuals with financial benefits and/or employment may also have the effect of reducing risk. Given that illicit drug use was one of the risk behaviors associated with having no income and no rent burden, it is also important that service providers help clients overcome financial barriers to accessing substance abuse treatment services. Even public treatment programs that do not charge a fee may be perceived as inaccessible by people with no income due to other barriers such as transportation, or such individuals may simply lack knowledge about what programs and services are available to them. To reduce risk behaviors, particularly those associated with substance use, it is important for social workers and other service providers to be cognizant of individuals' "recovery capital" and help people to generate the material and social resources needed to support positive behavior changes (White & Sanders, 2008, p. 370).

The study findings underscore the fact that a better understanding of the social context of HIV risk in impoverished urban areas—including the relationship between housing conditions, rent burden, financial resources, and HIV risk behaviors—is key to the development of more targeted prevention and health promotion programs. With social work's historic focus on

working alongside and empowering disadvantaged individuals and communities and assisting people in the context of their environments, the social work profession is well-positioned to play a leading role in such efforts. To maximize opportunities for effective intervention, social work education should draw upon research such as the present study to help students understand the multilevel influences on human behavior and formulate structural as well as individually oriented interventions to facilitate change across different levels of the environment.

4. Implications for Social Justice

Disparities in HIV/AIDS and other conditions—whether rooted in race, class, geography, or other factors—can be viewed as a social injustice. This study adds to an ever-growing body of research documenting the ways in which various health outcomes are linked to social disadvantage, in this case to conditions in housing, rent, and income (Braveman et al., 2011).

Disparities in the United States' domestic HIV/AIDS epidemic are particularly stark.

Epidemiological data indicates that HIV prevalence in low-income urban U.S. Census tracts is approximately 2.1%, similar to the prevalence rate in developing countries such as Burundi, Ethiopia, and Haiti (Denning & DiNenno, 2010). Based on this study's findings and other research on housing and HIV risk, it appears that the elevated HIV prevalence and risk behaviors of people who are homeless and unstably housed is among the key contributors to the growing concentration of HIV/AIDS in disadvantaged neighborhoods in U.S. cities.

Because health disparities are socially produced, it is critical to remember that they need not become intractable features of our society. The pursuit of health equity is a challenge requiring not only advocacy regarding proximal determinants of health, such as access to health care, but efforts to ensure that the social determinants of health including housing, living, and working conditions are just and equitable (Braveman et al., 2011). As a profession committed to

advancing social justice, the achievement of health equity is a worthy goal for social work and its allies. Social problems including homelessness and HIV/AIDS need not be inevitable. A combination of evidence-informed social policy, targeted interventions, and ongoing research efforts to better understand risk environments for HIV/AIDS and other health conditions may help society move toward a future in which safe, stable, and affordable housing and vibrant health are able to be enjoyed by all.

APPENDICES

APPENDIX A**SAMPLE LETTER OF SUPPORT FROM SRO MANAGEMENT – RECRUITMENT ONLY**

SRO NAME
ADDRESS

To Whom It May Concern:

We, the management of _____ at _____ give permission to Elizabeth Bowen (doctoral student at the University of Illinois at Chicago) to recruit participants for her study “Prior Homelessness and Rent Burden as Predictors of HIV Risk for Single Room Occupancy Building Residents” at our property. Ms. Bowen or other personnel involved with this study may verbally recruit participants for the study in public areas of our building, such as the lobby, in addition to leaving flyers or postcards with information about the study at our property.

No _____ staff or personnel will be involved in recruitment efforts for this study. Also, no research activities (such as consenting research subjects into the study or collecting data from subjects) will take place at this location.

Sincerely,

Date:

APPENDIX A (continued)**SAMPLE LETTER OF SUPPORT FROM SRO MANAGEMENT –
DATA COLLECTION ONSITE**

SRO NAME
ADDRESS

To Whom It May Concern:

We, the management of _____ at _____ give permission to Elizabeth Bowen (doctoral student at the University of Illinois at Chicago) to recruit participants for her study “Prior Homelessness and Rent Burden as Predictors of HIV Risk for Single Room Occupancy Building Residents” at our property. Ms. Bowen or other personnel involved with this study may verbally recruit participants for the study in public areas of our building, such as the lobby, in addition to leaving flyers or postcards with information about the study at our property. In addition, we give permission to Ms. Bowen or other research personnel to administer their eligibility screening and survey individually to residents who consent to participate in the conference room at _____, which is a private space that can be set aside for this purpose.

No _____ staff or personnel will be involved in any research activities related to this study, including recruitment efforts and/or data collection.

Sincerely,

Date:

APPENDIX B

ELIGIBILITY SCREENING

Date _____

Interviewer Initials _____

Prior Homelessness and Rent Burden as Predictors of HIV Risk for Single Room Occupancy Building Residents

Eligibility Screener – Phase 2

Thank you very much for your interest in this study. Before we get started, I need to ask you a couple of questions to see if you are eligible for the study.

1. Where did you sleep last night?

SRO building that is a recruitment site for the study1

Another location2→**END**

SRO recruitment sites: Aragon Arms (4917 N. Kenmore), Bachelor Apartments (1136 W. Wilson), Clarendon Association (4128 N. Clarendon), Darlington Hotel (4700 N. Racine), Foswyn Arms Apartments (5240 N. Winthrop), Glenn Apartments (4940 N. Winthrop), The Hazelton (851 W. Montrose), Lawrence House (1020 W. Lawrence), The Lorali Hotel (1039 W. Lawrence), Northmere the SRO Hotel (4943 N. Kenmore), Wilson Men's Hotel (1124 W. Wilson)

2. Do you have your recruitment card?

Yes1

→**SKIP** to Q5 if card code matches response to Q1

→**END** if card code does not match response to Q1

No2

3. How were you recruited for this study?

In person by a research team member1

I made a phone call in response to the flyer2→**SKIP** to Q5

APPENDIX B (continued)

ELIGIBILITY SCREENING

4. When and where did you talk to the research team member about the study?

*Respondent's recollection should match research records of where/when recruitment took place. If respondent does not list the same SRO given in response to Q1 as the recruitment location and approximate date (i.e. within 3 days of when research records indicate recruitment took place) → **END***

5. In what year were you born?

*Respondent's year of birth
 1996 or after: → **END***

If 1995 → Confirm if respondent has turned 18

6. Have you previously completed a survey interview for this study on the housing, health, and HIV risk behaviors of SRO residents?

Yes1 → **END**

No2

Not sure8 → **END**

“END” Script: I’m sorry but you are not eligible for this study. Thank you very much for taking the time to talk with me. Would you like some information on the services available here at COIP and other social service agencies in the neighborhood?

If eligible: Read and discuss Subject Information Sheet and proceed with questions to assess capacity to provide informed consent, on following page.

APPENDIX B (continued)

ELIGIBILITY SCREENING

After reviewing the Subject Information Sheet with the respondent and inviting the respondent to ask any questions they have about the study, proceed with the following questions to assess the respondent's capacity to provide informed consent.

Now that I've described the study to you, I need to ask you a couple of questions to make sure you understood what I said about the study and what your participation would involve before you decide if you want to participate.

1. Tell me at least one thing that you will be asked to do in the study.

Answer questions1
 Be interviewed2
 Talk to you about myself/my situation3
 Complete a survey:4

2. How long will your participation in the study last?

Just one time1
 One interview2
 About 45 minutes3
 Today only4

3. If you don't want to, do you have to be in this study?

No (participation is voluntary)1

4. What are some of the possible benefits of participating in this study?

There are no direct benefits1
 I'll get information on services that could help me2
 I'll be helping you understand and learn about things
 like HIV/AIDS and homelessness3

APPENDIX B (continued)

ELIGIBILITY SCREENING

5. What are some of the possible risks of participating in the study?

I might feel uncomfortable or upset about the questions I'm asked1

I might feel embarrassed2

There is a small risk of loss of my privacy or confidentiality.....3

Other reasonable response about potential distress: ...4

Assessment

If the respondent provides an acceptable response to all 5 questions, ask if they have any further questions about the study. After discussing any further questions, ask the respondent if they consent to participate in the study. If the respondent verbally consents, explain that documentation of informed consent is not required but the respondent's participation may be documented using the IRB form "Investigator Tool - Documentation of the Informed Consent Process, version #1.0, 02/21/2012" if the subject requests documentation of participation.

If the respondent does not provide an acceptable response to one or more questions, re-read the Subject Information Sheet, focusing on the aspects of the study that the respondent did not understand. Repeat the questions. If the respondent still does not provide an acceptable response to one or more questions, read "End" script:

"END" Script: I'm sorry but you are not eligible for this study. Thank you very much for taking the time to talk with me. Would you like some information on the services available here at COIP and other social service agencies in the neighborhood?

Complete for documentary purposes only:

Was the respondent assessed capable of providing informed consent?

Yes1

No2

APPENDIX C

SUBJECT INFORMATION SHEET – PHASE 1

University of Illinois at Chicago

Subject Information Sheet – Phase 1

“Prior Homelessness and Rent Burden as Predictors of HIV Risk for
Single Room Occupancy Building Residents”

You are being asked to participate in a research study. Researchers are required to provide an information sheet such as this one to tell you about the research, to explain that taking part is voluntary, to describe the risks and benefits of participation, and to help you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Principal Investigator Name and Title: Elizabeth Bowen, Doctoral Candidate

Department and Institution: Jane Addams College of Social Work at the University of Illinois at Chicago

Address: 1040 W. Harrison St., MC 309, Chicago, IL 60640

Phone and Email: 312-854-9244

Faculty Sponsor: Dr. Christopher Mitchell, Associate Professor

Why am I being asked to participate?

You are being asked to participate in a research study about people who live in Single Room Occupancy (SRO) buildings. The study is looking at different kinds of housing situations, such as being homeless or living in an SRO, and seeing if this may be related to health and behaviors that may put people at risk of transmitting or contracting HIV/AIDS or other health conditions. The study is being conducted by Elizabeth Bowen, a doctoral student at the University of Illinois at Chicago Jane Addams College of Social Work. This is a dissertation research study.

You have been asked to participate in this study because you are: (1) currently living at an SRO building in Chicago where recruitment for this study is taking place; (2) an adult age 18 or older; and (3) able to communicate verbally in English. A member of the Research Team will review this entire information sheet with you before you decide if you want to participate in the research study. In order to be in the study, you must demonstrate that you understand what your participation involves.

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future dealings with the University of Illinois at Chicago. If you decide to participate, you are free to withdraw at any time without affecting that relationship. Though we are conducting the research at the office of Community Outreach Intervention Projects (COIP), a program affiliated with the University of Illinois at Chicago School of Public Health, your decision to participate in the research or not participate in it will not affect your ability to get services or participate in programs here at COIP.

Approximately 180 subjects may be involved in this research at UIC, including 5 people in the first part of the study, which is the part you are being asked to participate in, and 175 in the second part (described in the next section below).

APPENDIX C (continued)**SUBJECT INFORMATION SHEET – PHASE 1****Why is the purpose of this research?**

This research is being done to better understand the health and risk behaviors of people living in SRO buildings. Past research shows that people who are homeless and living on the street have higher rates of health conditions including HIV/AIDS and problems with substance abuse. However, not much is known about the health of people who living in SROs. This study will look at the housing histories and financial resources of people who live in SRO buildings and see if this is related to different health issues and behaviors including behaviors that put people at risk for HIV/AIDS. The study will help the Research Team to better understand the role that housing may play in health problems such as HIV/AIDS. It is hoped that this information will lead to the design of better programs and services to help people struggling with homelessness or unstable housing situations, HIV, substance abuse, and other health issues. For this part of the study, the researchers are looking to test the survey instrument that will be used for the study. The researchers want to find out if there are any parts of the survey that are confusing or unclear. After this part of the study is completed, the survey will be revised and will be used to gather information from more people living in SRO buildings.

What procedures are involved?

The research will be performed here at the office of COIP at 4407 N. Broadway Ave., Chicago, IL. Your participation in the study will last only one time (today only). It is expected to take about 1 hour.

The study procedures are as follows: When you finish reading through this information sheet, an interviewer will ask you if you have any questions about the study. The interviewer will answer any questions you have and then will ask you a few questions about the study to make sure you understand what participation in the study involves. If you answer these questions correctly, you will be asked if you consent to participate in the study. If you do not answer some of the questions correctly, the interviewer will review the information with you again and ask you the questions again to make sure you understand.

If you are able to demonstrate that you understand what the study is about and what your participation involves by answering the interviewer's questions and if you state that you consent to participate in the study, the interviewer will then interview you using a survey tool developed for this study. The interview includes questions about the following topics:

- Your housing situation, including where you currently live, places you have lived in the past, experiences with homelessness, and how much you pay in rent
- Spending time in jail or prison
- Your health, including having enough food and getting services for health, mental health, or substance abuse problems
- Different kinds of substances you may have used
- Your recent sexual activities, including if you have any sexually transmitted infections
- Your HIV status
- Background information such as your race, education level, and income

APPENDIX C (continued)**SUBJECT INFORMATION SHEET – PHASE 1**

Completing the survey interview is expected to take about 45 minutes. You do not have to answer any questions if you don't want to. If the interviewer asks you a question that you don't want to answer, just say "I don't want to answer that" and the interviewer will move on to the next question.

After the interview is complete, the interviewer will review the different topics with you and ask you if there were any questions that were confusing or any words that you did not understand. The interviewer will record your comments on any questions that were confusing on the survey using a pen or pencil. This part of the study is expected to take about 15 minutes.

What are the potential risks or discomforts?

The main risk of participating in this study is that some of the questions in the interview may make you uncomfortable or upset. The interview includes questions about some sensitive topics, such as using different kinds of drugs and alcohol, having sex, spending time in jail or prison, and your HIV status. If you become upset during the interview, remember that at any time you may end the interview and leave the study, take a break, or decide not to answer a question. Another potential risk of this research is a loss of privacy. For example, it is possible that other people in the COIP waiting room area could guess that you are a subject in the research study.

Are there benefits to taking part in the research?

This study is not designed to benefit you directly. This study is designed to learn more about the health and risk behaviors of people living in SROs. The study results may be used to help other people in the future. For example, understanding if people who have been homeless engage in certain behaviors that can put them at risk for HIV/AIDS after they obtain SRO housing may help service providers develop specialized prevention services for this group. The study may also help researchers to see if subsidies that help people pay their rent might potentially affect people's health and risk behaviors. In addition, regardless of if you participate in the study, you will be provided with information on the services available at COIP and at other social service agencies in the Uptown area.

What other options are there?

This is a voluntary study. You have the option to not participate in this study.

What about privacy and confidentiality?

The people who will know that you are a research subject are members of the Research Team. Otherwise information about you will only be disclosed to others with your written permission, or if necessary to protect your rights or welfare or if required by law. Several steps will be taken by the Research Team to protect your privacy and confidentiality. When you are interviewed, the interviewer will not ask you for any information that could identify you, such as your name or birth date. The name of the SRO where you live will not be recorded anywhere on the survey. You also will not be asked to sign a consent form to indicate that you consent to participating in the study. Instead, you will verbally indicate to the interviewer that you agree to participate in the study by being interviewed.

APPENDIX C (continued)**SUBJECT INFORMATION SHEET – PHASE 1**

Completed anonymous surveys will be kept in a locked file cabinet here at the COIP office and will be transported once per week to a locked file cabinet in the office of the faculty sponsor for this study at the University of Illinois at Chicago. Your answers on the survey will be used only to help the Research Team to decide if changes should be made to the survey to make it more clear and easy to understand.

What are the costs for participating in this research?

There are no costs to you for participating in this research.

Will I be reimbursed for any of my expenses or paid for my participation in this research?

If you choose to participate in the study and be interviewed, you will be compensated \$25 cash for your time and efforts. You will receive \$25 from a member of the Research Team at the end of the interview.

Can I withdraw or be removed from the study?

This study is completely voluntary. You can choose whether to be in this study or not. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time. This will not affect your ability to receive services at COIP, or any other benefits or services you are seeking. You may also refuse to answer any questions you don't want to during the interview and still remain in the study. The Researchers also have the right to stop your participation in this study without your consent if they believe it is in your best interests.

Who should I contact if I have questions?

The lead researcher conducting this study is Elizabeth Bowen. You may contact the researcher by telephone at 312-854-9244 or by email at ebowen2@uic.edu. Please contact the researcher if you have any questions about this study or your part in it, or if you have any concerns or complaints about the research. You may also contact the professor overseeing this study, Dr. Christopher Mitchell, Associate Professor at the University of Illinois at Chicago Jane Addams College of Social Work, at 312-996-8509 or by email at cgm@uic.edu.

What are my rights as a research subject?

If you feel you have not been treated according to the descriptions in this information sheet, or if you have any questions about your rights as a research subject, including questions, concerns, complaints, or to offer input, you may call the Office for the Protection of Research Subjects (OPRS) at 312-996-1711 or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu.

Remember:

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. If you decide to participate, you are free to withdraw at any time without affecting that relationship. You are not required to sign a form to indicate that you consent to participate in the study. However, please let a Research Team member know if you would like documentation linking yourself with the research. You will be given a copy of this Subject Information Sheet for your information and to keep for your records.

APPENDIX C (continued)

SUBJECT INFORMATION SHEET – PHASE 2

University of Illinois at Chicago

Subject Information Sheet – Phase 2

“Prior Homelessness and Rent Burden as Predictors of HIV Risk for
Single Room Occupancy Building Residents”

You are being asked to participate in a research study. Researchers are required to provide an information sheet such as this one to tell you about the research, to explain that taking part is voluntary, to describe the risks and benefits of participation, and to help you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Principal Investigator Name and Title: Elizabeth Bowen, Doctoral Candidate

Department and Institution: Jane Addams College of Social Work at the University of Illinois at Chicago

Address: 1040 W. Harrison St., MC 309, Chicago, IL 60640

Phone and Email: 312-854-9244

Faculty Sponsor: Dr. Christopher Mitchell, Associate Professor

Why am I being asked to participate?

You are being asked to participate in a research study about people who live in Single Room Occupancy (SRO) buildings. The study is looking at different kinds of housing situations, such as being homeless or living in an SRO, and seeing if this may be related to health and behaviors that may put people at risk of transmitting or contracting HIV/AIDS or other health conditions. The study is being conducted by Elizabeth Bowen, a doctoral student at the University of Illinois at Chicago Jane Addams College of Social Work. This is a dissertation research study.

You have been asked to participate in this study because you are: (1) currently living at an SRO building in Chicago where recruitment for this study is taking place; (2) an adult age 18 or older; and (3) able to communicate verbally in English. A member of the Research Team will review this entire information sheet with you before you decide if you want to participate in the research study. In order to be in the study, you must demonstrate that you understand what your participation involves.

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future dealings with the University of Illinois at Chicago. If you decide to participate, you are free to withdraw at any time without affecting that relationship. Though we are conducting the research at the office of Community Outreach Intervention Projects (COIP), a program affiliated with the University of Illinois at Chicago School of Public Health, your decision to participate in the research or not participate in it will not affect your ability to get services or participate in programs here at COIP.

Approximately 180 subjects may be involved in this research at UIC, including 5 people who already participated in the first part of the study to test the survey instrument and about 175 people in this part of the study, where the researchers are using the survey to collect data from people living in SROs.

APPENDIX C (continued)**SUBJECT INFORMATION SHEET – PHASE 2****Why is the purpose of this research?**

This research is being done to better understand the health and risk behaviors of people living in SRO buildings. Past research shows that people who are homeless and living on the street have higher rates of health conditions including HIV/AIDS and problems with substance abuse. However, not much is known about the health of people who living in SROs. This study will look at the housing histories and financial resources of people who live in SRO buildings and see if this is related to different health issues and behaviors including behaviors that put people at risk for HIV/AIDS. The study will help the Research Team to better understand the role that housing may play in health problems such as HIV/AIDS. It is hoped that this information will lead to the design of better programs and services to help people struggling with homelessness or unstable housing situations, HIV, substance abuse, and other health issues.

What procedures are involved?

The research will be performed here at the office of COIP at 4407 N. Broadway Ave., Chicago, IL. Your participation in the study will last only one time (today only). It is expected to take about 45 minutes.

The study procedures are as follows: When you finish reading through this information sheet, an interviewer will ask you if you have any questions about the study. The interviewer will answer any questions you have and then will ask you a few questions about the study to make sure you understand what participation in the study involves. If you answer these questions correctly, you will be asked if you consent to participate in the study. If you do not answer some of the questions correctly, the interviewer will review the information with you again and ask you the questions again to make sure you understand.

If you are able to demonstrate that you understand what the study is about and what your participation involves by answering the interviewer's questions and if you state that you consent to participate in the study, the interviewer will then interview you using a survey tool developed for this study. The interview includes questions about the following topics:

- Your housing situation, including where you currently live, places you have lived in the past, experiences with homelessness, and how much you pay in rent
- Spending time in jail or prison
- Your health, including having enough food and getting services for health, mental health, or substance abuse problems
- Different kinds of substances you may have used
- Your recent sexual activities, including if you have any sexually transmitted infections
- Your HIV status
- Background information such as your race, education level, and income

Completing the survey interview is expected to take about 45 minutes. You do not have to answer any questions if you don't want to. If the interviewer asks you a question that you don't want to answer, just say "I don't want to answer that" and the interviewer will move on to the next question.

APPENDIX C (continued)**SUBJECT INFORMATION SHEET – PHASE 2****What are the potential risks or discomforts?**

The main risk of participating in this study is that some of the questions in the interview may make you uncomfortable or upset. The interview includes questions about some sensitive topics, such as using different kinds of drugs and alcohol, having sex, spending time in jail or prison, and your HIV status. If you become upset during the interview, remember that at any time you may end the interview and leave the study, take a break, or decide not to answer a question. Another potential risk of this research is a loss of privacy. For example, it is possible that other people in the COIP waiting room area could guess that you are a subject in the research study.

Are there benefits to taking part in the research?

This study is not designed to benefit you directly. This study is designed to learn more about the health and risk behaviors of people living in SROs. The study results may be used to help other people in the future. For example, understanding if people who have been homeless engage in certain behaviors that can put them at risk for HIV/AIDS after they obtain SRO housing may help service providers develop specialized prevention services for this group. The study may also help researchers to see if subsidies that help people pay their rent might potentially affect people's health and risk behaviors. In addition, regardless of if you participate in the study, you will be provided with information on the services available at COIP and at other social service agencies in the Uptown area.

What other options are there?

This is a voluntary study. You have the option to not participate in this study.

What about privacy and confidentiality?

The people who will know that you are a research subject are members of the Research Team. Otherwise information about you will only be disclosed to others with your written permission, or if necessary to protect your rights or welfare or if required by law. Several steps will be taken by the Research Team to protect your privacy and confidentiality. When you are interviewed, the interviewer will not ask you for any information that could identify you, such as your name or birth date. The name of the SRO where you live will not be recorded anywhere on the survey. You also will not be asked to sign a consent form to indicate that you consent to participating in the study. Instead, you will verbally indicate to the interviewer that you agree to participate in the study by being interviewed.

Completed anonymous surveys will be kept in a locked file cabinet here at the COIP office and will be transported once per week to a locked file cabinet in the office of the faculty sponsor for this study at the University of Illinois at Chicago. For the purpose of statistical analyses, the data will be entered from the surveys onto a laptop computer with password security access to further protect the collected data. Only the lead research (Elizabeth Bowen) will have access to the computer, though the data may be shared with other researchers such as the faculty sponsor for this study. When the results of the research are published or discussed in conferences, no information will be included that would reveal your identity.

APPENDIX C (continued)**SUBJECT INFORMATION SHEET – PHASE 2****What are the costs for participating in this research?**

There are no costs to you for participating in this research.

Will I be reimbursed for any of my expenses or paid for my participation in this research?

If you choose to participate in the study and be interviewed, you will be compensated \$20 cash for your time and efforts. You will receive \$20 from the interviewer at the end of the interview. If you were recruited for this study inside an SRO building located more than 4 city blocks from this office, you may have already received a Chicago Transit Authority transit card from a member of the Research Team worth \$2.50 (equivalent to one train or bus fare with a transfer that can be used within two hours) to assist you with transportation to this office. Unfortunately we are not able to provide transit cards to help you return home following the interview.

Can I withdraw or be removed from the study?

This study is completely voluntary. You can choose whether to be in this study or not. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time. This will not affect your ability to receive services at COIP, or any other benefits or services you are seeking. You may also refuse to answer any questions you don't want to during the interview and still remain in the study. The Researchers also have the right to stop your participation in this study without your consent if they believe it is in your best interests.

Who should I contact if I have questions?

The lead researcher conducting this study is Elizabeth Bowen. You may contact the researcher by telephone at 312-854-9244 or by email at ebowen2@uic.edu. Please contact the researcher if you have any questions about this study or your part in it, or if you have any concerns or complaints about the research. You may also contact the professor overseeing this study, Dr. Christopher Mitchell, Associate Professor at the University of Illinois at Chicago Jane Addams College of Social Work, at 312-996-8509 or by email at cgm@uic.edu.

What are my rights as a research subject?

If you feel you have not been treated according to the descriptions in this information sheet, or if you have any questions about your rights as a research subject, including questions, concerns, complaints, or to offer input, you may call the Office for the Protection of Research Subjects (OPRS) at 312-996-1711 or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu.

Remember:

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. If you decide to participate, you are free to withdraw at any time without affecting that relationship.

You are not required to sign a form to indicate that you consent to participate in the study. However, please let a Research Team member know if you would like documentation linking yourself with the research. You will be given a copy of this Subject Information Sheet for your information and to keep for your records.

APPENDIX D

MEASUREMENT PLAN

Variable	Question on Survey Instrument	Source of Question
Screening Questions		
Living situation	Where did you sleep last night? <i>Participant must state an SRO that is a recruitment site for the study. The SRO stated must match the code on the participant's recruitment card, if he/she has one. If participant was recruited in person but does not have a recruitment card, he/she must state where he/she was recruited and approximate date.</i>	Written by the PI
Age	In what year were you born? <i>Only 18 and older are eligible.</i>	Bradburn et al. (2004)
Previous participation	Have you previously completed a survey interview for <u>this study</u> on the housing, health, and HIV risk behaviors of SRO residents?	Written by the PI
Capacity to consent	Tell me at least one thing that you will be asked to do in the study. How long will your participation in the study last? If you don't want to, do you have to be in this study? What are some of the possible benefits of participating in the study? What are some of the possible risks of participating in the study?	Adapted from Zayas et al. (2005)
Independent Variables		
Prior homelessness	How long have you lived at your current address?	Written by the PI
	Do you consider this place to be your main address, that is, the place where you sleep most of the time?	Written by the PI
	<i>Prior homelessness indicators:</i> Now I am going to ask you some questions about being homeless. By homeless, I mean that you have no regular place to live, but instead had to stay in an overnight shelter, abandoned building, car, outdoors, or other such places.	Adapted from questionnaire used in Stein et al.'s (2009) study
	Now let's look at the past 12 months. For each month, starting with this month and going back over the past 12 months, I want you to think about where you were staying that month and tell me how many days you were homeless that month. I will also ask you if you stayed in an SRO that month and if so, for how many days. Do you consider yourself to be homeless right now?	Adapted from the Residential Follow-Back Calendar (New Hampshire-Dartmouth Psychiatric Research Center, 1995)

APPENDIX D (continued)

MEASUREMENT PLAN

	<p>Have you ever been homeless?</p> <p>How old were you when you became homeless the first time?</p> <p>How many different times have you been homeless in your whole life?</p> <p>Thinking about all these times, how long have you been homeless in your lifetime?</p>	
Rent burden	<p>Now I am going to ask you for some more information about where you've been living the past three months. Starting with this past week, I will ask you about where you stayed each week, if you had to pay rent, and how much you paid in rent. (Starting with current month and week, go over where the respondent stayed and amount of rent paid over the past 3 months.)</p> <p><i>Location prompts:</i> A room in a SRO hotel; a car, a park, abandoned building or the street; an emergency shelter; a transitional housing program; a treatment program or recovery house; jail or prison; a hospital; your own house or apartment; someone else's house or apartment; or some other type of housing</p> <p>Was the amount of rent that you paid the full amount that you owed?</p> <p>Does the amount of rent you paid include any meals served at the SRO building where you live?</p> <p>Do you live in a subsidized unit or receive any vouchers that help you pay the rent? If so, where does this voucher/subsidy come from?</p> <p>Are you on any waiting lists for public housing or subsidized housing?</p> <p>I am going to list some common sources of income. For each source I list, please tell me if you have received <u>any</u> income from that source in the <u>past 30 days</u>. If you have received income from that source, I will ask you to tell me how much.</p> <p><i>Response choices:</i> wages, salaries, or tips from employment; retirement income from Social Security or a pension; unemployment compensation; disability benefits such as Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI); Veterans Administration payments for military service; Temporary Assistance to Needy Families (TANF); Link card or food stamps; money from family, friends, or a spouse, including alimony or child support;</p>	<p>Adapted from the Residential Follow-Back Calendar (New Hampshire-Dartmouth Psychiatric Research Center, 1995)</p> <p>Written by the PI; the income definition is adapted from the definition HUD uses to establish eligibility for programs such as Section 8 (HUD, 2009)</p>

APPENDIX D (continued)

MEASUREMENT PLAN

	<p>Many people have had to rely on other types of activities in order to earn money. In the past 30 days, have you received any income or money from...</p> <p><i>Response choices:</i> pan-handling; selling things like candy, cigarettes, or flowers; watching people's kids; manual work like fixing cars, yard work, or home repair; shoplifting; burglary or robbery; selling drugs; exchanging sex for money</p> <p>Are there any other ways that you earned money in the past 30 days that we didn't talk about yet? <i>If yes:</i> What was it?</p> <p>How much money total did you earn from these activities in the past 30 days?</p>	Adapted from needs assessment of homeless persons in the Chicago area (SRL, 2000)
Dependent Variables		
Illicit drug and alcohol use	<p>How many days did you use _____ in the last 30 days? How many days did you inject ____ in the past 30 days? How many times a day did you inject ____? How many days did you use ____ without injecting? How many times a day did you use ____ without injecting?</p> <p><i>Drug categories:</i> alcohol; marijuana; cocaine or crack by itself; heroin by itself; heroin & cocaine mixed together ("speedball"); methamphetamine ("crystal meth"); amphetamine ("speed" or Adderall); ecstasy (MDMA); poppers, nitrates, or other inhalants; non-medical use of Xanax or Valium; non-medical use of painkillers hydrocodone (Vicodin), oxycodone (OxyContin), or Codeine; other drugs</p>	Adapted from the RBA (NIDA, 1991)
Alcohol misuse	<p>How often do you have six or more (women)/eight or more (men) drinks on one occasion?</p> <p>How often during the last 12 months have you been unable to remember what happened the night before because you had been drinking?</p> <p>How often during the last 12 months have you failed to do what was normally expected of you because of drinking?</p> <p><i>Response choices:</i> Never; less than monthly; monthly; weekly; daily or almost daily</p> <p>In the last 12 months has a relative or friend, or a doctor or other health professional, been concerned about your drinking or suggested you cut down?</p> <p><i>Response choices:</i> No; yes, on one occasion; yes, on more than one occasion</p> <p><i>A score of three or more is considered positive for alcohol misuse</i></p>	FAST screening for alcohol misuse (Hodgson et al., 2003)

APPENDIX D (continued)

MEASUREMENT PLAN

Injection drug use and needle/equipment sharing	<p>Have you ever used drugs intravenously (injecting)?</p> <p>In the last 30 days, how many times (that is, number of injections) did you inject using needles or syringes that you know had been used by somebody else?</p> <p>In the last 30 days, how many times (that is, number of injections) did you use a cooker, cotton, or rinse water that you know had been used somebody else?</p>	RBA (NIDA, 1991)
Number of sexual partners	<p>During the last 30 days, how many people did you have vaginal or anal sex with?</p> <p>How many of your partners were female? How many of your partners were male?</p>	RBA (NIDA, 1991)
Sex acts without a condom and sex acts while drunk or high	<p><i>Note: The survey includes skip patterns based on the respondent's sex and sex of their sexual partners (i.e. only female respondents will be asked if they had vaginal sex with male partners).</i></p> <p>In the past 30 days, how many times did you have <u>vaginal</u> sex with <u>female</u> partners? Of these __ times, how many times did you use a condom? Of these __ times, how many times were you drunk or high while having sex?</p> <p>In the past 30 days, how many times did you have <u>anal</u> sex with <u>female</u> partners? Of these __ times, how many times...(same as above)</p> <p>In the past 30 days, how many times did you have <u>vaginal</u> sex with <u>male</u> partners? Of these __ times, how many times...(same as above)</p> <p>In the past 30 days, how many times did you have <u>anal</u> sex with <u>male</u> partners? Of these __ times, how many times...(same as above)</p>	Adapted from the RBA (NIDA, 1991) and COIP SATHCAP Questionnaire
Sex exchange	<p>Did you ever...Have <u>vaginal</u> sex with someone in exchange for money, drugs, food, or a place to stay? Have <u>anal</u> sex with someone in exchange for money, drugs, food, or a place to stay? Have <u>oral</u> sex with someone in exchange for money, drugs, food, or a place to stay?</p> <p><i>If yes:</i> Did you do this in the past 30 days? How many times?</p>	Adapted from the RBA (NIDA, 1991)
Control Variables		
Age	See screening questions.	
Sex	<p>What is your sex?</p> <p><i>Response choices:</i> Male, Female, Transgender (Male to Female), Transgender (Female to Male), or another gender identity</p>	Written by the PI
Race	<p>Do you identify as Hispanic or Latino?</p> <p>What is your race? Please select all that apply.</p>	Bradburn et al. (2004)

APPENDIX D (continued)

MEASUREMENT PLAN

Response choices: American Indian or Alaska Native, Asian American, Black or African American, White or Caucasian, or another race (specify)

HIV status	<p>Has a doctor, nurse, or other health care provider ever told you that you have HIV or AIDS?</p> <p><i>If yes:</i> In what year were you first diagnosed with HIV or AIDS?</p> <p>Are you currently prescribed antiretroviral drug therapy (known as “HAART”) for HIV/AIDS?</p> <p>How closely do you take your HIV medication as prescribed?</p> <p><i>Response choices:</i> All of the time, most of the time, about half the time, some of the time, or never</p> <p>When was the last time you missed any of your HIV medication?</p> <p><i>Response choices:</i> Within the past week, 1 to 2 weeks ago, 2 to 4 weeks ago, 1 to 3 months ago, more than 3 months ago, or never</p> <p><i>If no:</i> Have you ever had an HIV or AIDS test?</p> <p>When was your last test HIV or AIDS?</p> <p><i>Response choices:</i> Within the past 6 months; more than 6 months ago but not more than 1 year ago; more than 1 year ago but not more than 2 years ago; more than 2 years ago but not more than 5 years ago; or more than 5 years ago</p>	<p>Adapted from needs assessment of homeless persons in the Chicago area (SRL, 2000), 2010 National Health Interview Survey (CDC, 2011), and Adult AIDS Clinical Trials Group Adherence to Anti-Retroviral Medications Questionnaire (Chesney et al., 2000)</p>
Serious mental illness	<p>Have you ever been told by a doctor, psychologist, social worker, or other health professional that you have a serious mental illness or mental health condition?</p> <p><i>If yes:</i> What was the condition?</p> <p><i>Response choices:</i> Major depression, bipolar disorder, schizophrenia or schizoaffective disorder, or another condition</p>	<p>Adapted from needs assessment of homeless persons in the Chicago area (SRL, 2000)</p>
Criminal justice history	<p>Have you ever spent one or more nights in jail or prison?</p> <p>Have you spent one or more nights in jail or prison in the past 12 months?</p> <p><i>If yes:</i> Let’s look at the past 12 months. For each month, starting with this month and going back over the past 12 months, I want you to tell me how many days you were in jail or prison that month.</p> <p>Have you ever been convicted of a felony?</p>	<p>Adapted from 2010 National Survey on Drug Use and Health (SAMHSA, 2009)</p>

APPENDIX E

SURVEY INSTRUMENT

Interviewer Initials _____

Date _____

Prior Homelessness and Rent Burden as Predictors of HIV Risk for Single Room Occupancy Building Residents

Survey Interview

This survey includes questions about several topics such as your health, health care, HIV status, drug and alcohol use, and experience with the criminal justice system. All of your answers will be kept confidential, and we will not record any information that could identify you, such as your name, birthday, or address. Before we get started, I want to remind you that this survey is for research purposes only. We will not use your answers to see if you are eligible for any types of benefits or services. However, I can provide you with some information on different services that are available in this neighborhood when we finish. Please also remember that you may quit the interview at any time for any reason, or decline to answer any questions that you do not want to answer. Do you have any questions before we begin?

Housing

I'm going to start the survey by asking you a few more questions about your housing situation.

1. How long have you lived at your current address at (*provide address or name of SRO that respondent mentioned in the screening*)?

Respondent may answer in days, weeks, months or years:

_____ Days _____ Weeks _____ Months _____ Years

2. Do you consider this place to be your main address, that is, the place where you sleep most of the time?

Yes1

No2

Not sure8

3. Now I am going to ask you for some more information about where you've been living the past three months. Starting with this past week, I will ask you about where you stayed each week, if you had to pay rent, and how much you paid in rent.
Start with the current month and week (i.e. if the date is Feb. 11, start at February, Week 2). Working backwards from the present, ask where the respondent stayed each week, using a calendar and the location list as prompts. If respondent reported being at current address for longer than 3 months in Q1, confirm monthly rent amount for past 3 months and confirm if he/she stayed at any other locations during this time (i.e. hospital or treatment program).

APPENDIX E (continued)

SURVEY INSTRUMENT

(continued)

		Location (see list)	Did you pay rent? Circle: Y N		Rent amount*
Current Month: _____	Week 4		1	2	\$ /mo or \$ /wk
	Week 3		1	2	\$ /week
	Week 2		1	2	\$ /week
	Week 1		1	2	\$ /week
One Month Before: _____	Week 4		1	2	\$ /mo or \$ /wk
	Week 3		1	2	\$ /week
	Week 2		1	2	\$ /week
	Week 1		1	2	\$ /week
Two Months Before: _____	Week 4		1	2	\$ /mo or \$ /wk
	Week 3		1	2	\$ /week
	Week 2		1	2	\$ /week
	Week 1		1	2	\$ /week

* This should be the amount the respondent personally paid, not including any vouchers or subsidies paid by an agency directly to the building or landlord.

Locations

- 1 A room in a single room occupancy (SRO) hotel
- 2 A car, a park, abandoned building, or the street
- 3 An emergency shelter, where you can stay overnight but have to leave during the daytime
- 4 A transitional housing program, where you can stay for a couple of months
- 5 A treatment program or recovery house
- 6 Jail or prison
- 7 A hospital
- 8 Someone else's house or apartment
- 9 Your own house or apartment
- 10 Some other place. What was it? _____
- 88 Not sure

APPENDIX E (continued)

SURVEY INSTRUMENT

4. At the SRO where you are staying now, is the amount of rent you paid most recently the full amount of rent that you owed?

Yes1

No2

If no: What was the difference between what you paid and what you owed for the rent? \$_____

Not sure8

5. Some SRO buildings serve meals onsite. Does the amount of rent you paid include any meals served at the SRO building where you live?

Yes1

No2

Not sure8

6. Do you live in a subsidized unit or receive any vouchers that help you pay the rent?

Yes1

If yes: Where does your voucher or subsidy come from?
(e.g. Chicago Housing Authority, Thresholds, Heartland)

No2 → **SKIP to Q8**

Not sure8 → **SKIP to Q8**

7. Do you know how much per month is your voucher or subsidy worth?

Yes\$/mo.

Not sure8

8. Are you on any waiting lists for public housing or subsidized housing?

Yes1

No2

Not sure8

APPENDIX E (continued)

SURVEY INSTRUMENT

Experiences with Homelessness and the Criminal Justice System

Now I am going to ask you some questions about being homeless. By homeless, I mean that you have no regular place to live, but instead had to stay in a shelter, abandoned building, car, outdoors, or other such places. I am also going to ask you a few questions about spending time in jail or prison.

9. Let's look at the past 12 months. For each month, starting with this month and going back over the past 12 months, I want you to think about where you were staying that month and tell me how many days you were homeless that month and how many days you spent in jail or prison that month. If you weren't homeless or in jail or prison that month, you can say "zero." I will also ask you if you stayed in an SRO that month and if so, for how many days. *Show respondent the month on the calendar, starting with the current month. Ask the respondent if he/she was homeless that month (repeat definition if necessary), and if so, how many days; and if he/she spent any time in jail or prison that month and if so, how many days; and if he/she stayed in an SRO that month and if so, for how many days (use the columns to indicate if the respondent stayed in the same SRO or multiple SROs). If he/she acknowledged time spent in jail/prison or homeless within the past 3 months in Q3, explain that now you need to know how many days were spent homeless or in jail each month.*

	# Days Homeless	# Days Incarcerated	# Days SRO #1	# Days SRO #2	# Days SRO #3
Current Month:					
Prior Month #1					
Prior Month #2					
Prior Month #3					
Prior Month #4					
Prior Month #5					
Prior Month #6					
Prior Month # 7					
Prior Month #8					
Prior Month #9					
Prior Month #10					
Prior Month #11					

APPENDIX E (continued)

SURVEY INSTRUMENT

10. Do you consider yourself to be homeless right now?

Yes1 → **SKIP to Q13**

No2

Not sure8

11. On a 5-point scale where 1 means not at all likely and 5 means very likely, how likely would you say it is that you will become homeless within the next 12 months?

	Not at All <u>Likely</u>				Very <u>Likely</u>	<u>Not Sure</u>
<i>Circle respondent's choice:</i>	1	2	3	4	5	8

12. Have you ever been homeless?

Yes1

No2 → **SKIP to Q 16**

Not sure8

13. How old were you when you became homeless the first time?

_____ *Age when first homeless*

14. How many different times have you been homeless in your whole life?

_____ *Number of different times*

15. Thinking about all of these times, what is the total amount of time that you have been homeless in your whole lifetime?

Respondent may answer in days, weeks, months or years:

_____ Days _____ Weeks _____ Months _____ Years

16. Have you ever been convicted of a felony?

Yes1

No2

Not sure8

APPENDIX E (continued)

SURVEY INSTRUMENT

17. Have you ever spent one or more nights in jail or prison?

Yes1

No2

Not sure8

Food Security

18. Now I'm going to ask you a few questions about the food that you eat and having enough food.

In the past 30 days, did you...

If respondent answers "yes," ask "How often did this happen?" and present the three response choices ("once or twice a month," "three to 10 times a month" or "more than 10 times").

How often did this happen?
Would you say...

	Yes	Rarely: 1 or 2x	Sometimes: 3 to 10x	Often: 10+	Not Sure
a. Worry that you would not have enough food.....	1	1	2	3	8
b. Not eat the kinds of foods you preferred because of a lack of money/resources.....	1	1	2	3	8
c. Have to eat a limited variety of foods due to a lack of money/resources.....	1	1	2	3	8
d. Have to eat some foods you really did not want to eat because of a lack of resources to obtain other types of food	1	1	2	3	8
e. Have to eat a smaller meal than you felt you needed because there was not enough food.....	1	1	2	3	8
f. Have to eat fewer meals in a day because there was not enough food.....	1	1	2	3	8

APPENDIX E (continued)

SURVEY INSTRUMENT

g. Was there ever no food to eat of any kind in your household (room at the SRO) because of lack of money/resources to get food?.....	1	1	2	3	8
h. Go to sleep at night hungry because there was not enough food.....	1	1	2	3	8
i. Go a whole day and night without eating because there was not enough food.....	1	1	2	3	8

19. Where do you eat most of your meals? Would you say it's . . .

- In your room.....1
- In a shared kitchen or dining area at your SRO.....2
- At fast food places or other restaurants3
- At friends or family members' houses4
- At soup kitchens, churches, or other places where you can get a free meal, or.....5
- Some other place?.....6
-

COIP Service Access and Case Management

Next I'm going to ask you a couple of questions about services, including services offered here at Community Outreach Intervention Projects (COIP) like case management. Some people have a case manager who helps them with things like finding housing, seeing a doctor, or getting referrals for other services.

20. Have you ever received any type of service—such as case management, counseling, or HIV testing—here at COIP's Uptown office or any of COIP's other locations?

- Yes1
- No2→**SKIP to Q24**
- Not sure8→**SKIP to Q24**

APPENDIX E (continued)

SURVEY INSTRUMENT

21. Have you received any services at COIP in the past 30 days?

Yes1

No2

Not sure8

22. Do you have a case manager at COIP?

Yes1

No2 → **SKIP to Q24**

Not sure8 → **SKIP to Q24**

23. Have you seen your COIP case manager for an appointment in the past 30 days?

Yes1

No2

Not sure8

24. Do you have a case manager at an agency other than COIP?

Yes1

No2 → **SKIP to Q26**

Not sure8 → **SKIP to Q26**

25. Have you seen that case manager for an appointment in the past 30 days?

Yes1

No2

Not sure8

APPENDIX E (continued)

SURVEY INSTRUMENT

Health, Mental Health, and Service Access

Next I'm going to ask you some questions your health, including mental health, and your experiences using different kinds of services.

26. In general, how would you describe your health at this time? Would you say it is . . .

- Excellent,1
- Very good,2
- Good,3
- Fair, or4
- Poor?5

27. Do you have any of the following serious health conditions or diseases?

- Asthma1
 - Chronic obstructive pulmonary disease (COPD)2
 - Tuberculosis.....3
 - Diabetes.....4
 - Hypertension (high blood pressure)5
 - Stroke.....6
 - Heart attack or heart disease7
 - Any type of cancer.....8
 - Kidney disease or kidney failure.....9
 - Hepatitis C10
 - Other liver disease (such as cirrhosis)11
 - Arthritis.....12
 - Other serious health condition:13
-

APPENDIX E (continued)

SURVEY INSTRUMENT

28. Is there a place you usually go for medical care, when you are sick or need advice about your health?

- Yes1
 No2 → *SKIP to Q31*
 Not sure8 → *SKIP to Q31*

29. What kind of place is it? Is it a . . .

Mobile clinic located in a van or bus,1

*Name of mobile clinic (e.g. Circle Family HealthCare
 Network Mobile Health Unit or Night Ministry)*

Clinic or health center that's not part of a hospital,2

*Name of clinic (e.g. Heartland Health Outreach, Uptown
 Neighborhood Health Center)*

Hospital outpatient department or clinic,3

Hospital emergency room,4

Doctor's office that's not part of a clinic or
 hospital, or5

Some other type of place?6

List other place

Not sure8

30. When did you last visit this place?

In the past 30 days1

More than 30 days ago but less than 6 months ago2

More than 6 months ago but less than 1 year ago3

More than 1 year ago4

Not sure8

APPENDIX E (continued)

SURVEY INSTRUMENT

31. During the past 12 months, was there a time when you wanted to get medical care, but could not get it at that time, for any reason?

Yes1

No2

Not sure8

32. Do you currently have any type of health insurance?

Yes1

No2 → **SKIP to Q34**

Not sure8

33. What type of insurance do you have? Is it...

Medicaid,1

Medicare,2

Military or veterans' healthcare coverage,3

Private insurance, including HMOs, or4

Something else?5

Other insurance type

Not sure8

34. Have you ever been told by a doctor, psychologist, social worker, or other health professional that you have a serious mental illness or mental health condition?

Yes1

No2 → **SKIP to Q36**

Not sure8

APPENDIX E (continued)

SURVEY INSTRUMENT

35. What was the condition? *Circle all that apply.*

Major depression,1
 Bipolar disorder,2
 Schizophrenia or schizoaffective disorder, or8
 Another condition?16

Other mental health condition

36. Now I am going to ask you about some different places where people get treatment for mental health issues. For each type of place, please tell me if you ever got treatment there for any problem you were having with your emotions, nerves, or mental health, if you got treatment there in the 12 months, and if you got treatment there in the past 30 days. Please think only about treatment or counseling for mental health issues, not for alcohol or drug use.

Have you ever received treatment for your mental health at _____? (*If no, circle "0" and move on to next category*). How about in the past 12 months? How about in the past 30 days?

	<u>Ever received</u>	<u>Past 12 months</u>	<u>Past 30 days</u>	<u>Did not use</u>	<u>Not Sure</u>
a. A hospital or residential program where you stayed overnight.....	1	2	3	0	8
b. An outpatient or day treatment program at a hospital.....	1	2	3	0	8
c. An outpatient mental health center or clinic.....	1	2	3	0	8
d. An office that was <u>not</u> part of a clinic where you saw a therapist, psychologist, psychiatrist, social worker, or counselor.....	1	2	3	0	8
e. A medical clinic or doctor's office.....	1	2	3	0	8
f. Some other place: _____	1	2	3	0	8

APPENDIX E (continued)

SURVEY INSTRUMENT

37. During the past 12 months, was there a time when you wanted to get counseling or treatment for a mental health issue, but could not get it at that time, for any reason?

Yes1

No2

Not sure8

Substance Use and Treatment

Thank you for answering those questions. Next, I am going to ask you a few questions about alcohol and drug use and treatment for these issues.

38. At any time in your life, have you ever felt that you had a problem with alcohol use?

Yes1

No2

Not sure8

39. At any time in your life, have you ever felt that you had a problem with drug use (other than alcohol)?

Yes1

No2

Not sure8

40. *Ask men:* How often do you have 8 or more drinks on one occasion?

Ask women: How often do you have 6 or more drinks on one occasion?

Never0

Less than monthly1

Monthly2

Weekly3

Daily or almost daily4

APPENDIX E (continued)**SURVEY INSTRUMENT**

41. How often during the last 12 months have you been unable to remember what happened the night before because you had been drinking?

Never0
Less than monthly1
Monthly2
Weekly3
Daily or almost daily4

42. How often during the last 12 months have you failed to do what was normally expected of you because of drinking?

Never0
Less than monthly1
Monthly2
Weekly3
Daily or almost daily4

43. In the last 12 months has a relative or friend, or a doctor or other health professional, been concerned about your drinking or suggested you cut down?

No0
Yes, on one occasion2
Yes, on more than one occasion4

APPENDIX E (continued)

SURVEY INSTRUMENT

44. Now I am going to ask you about some different places where people get treatment for problems with drug and alcohol use. For each type of place, please tell me if you ever got treatment there for a drug or alcohol problem, if you got treatment there in the 12 months, and if you got treatment there in the past 30 days.

Have you ever received treatment at _____? (If no, circle "0" and move on to next category). How about in the past 12 months? How about in the past 30 days?

	<u>Ever received</u>	<u>Past 12 mo.</u>	<u>Past 30 days</u>	<u>Did not use</u>	<u>Not Sure</u>
a. Residential or inpatient treatment in a hospital or treatment center.....	1	2	3	0	8
b. A recovery house or halfway house.....	1	2	3	0	8
c. Outpatient treatment program at a hospital, clinic, or treatment center	1	2	3	0	8
d. Methadone maintenance program.....	1	2	3	0	8
e. Counseling from a therapist, counselor, or doctor that was <u>not</u> part of an outpatient program or methadone maintenance.....	1	2	3	0	8
f. Self-help group like Alcoholics Anonymous (AA) or Narcotics Anonymous (NA).....	1	2	3	0	8
g. Some other place: _____	1	2	3	0	8
<i>Specify response</i>					

45. During the past 12 months, was there a time when you wanted to get counseling or treatment for alcohol or drug use, but could not get it at that time, for any reason?

Yes1
 No2
 Not sure8

APPENDIX E (continued)
SURVEY INSTRUMENT

HIV Risk Behaviors

Now I'm going to ask you some more questions about alcohol and drug use. I'll ask what types of substances you've used and how often you use them. *Show 30 day range on calendar to prompt the participant's recall.*

	a. Have you ever used? <i>(If no use, unknown, or refused, skip to next drug)</i>	b. How many days did you use ____ in the last 30 days? <i>(If 0, skip to next drug)</i>	c. How many days did you inject ____ in the last 30 days? <i>(If 0, skip to part e)</i>	d. How many times a day did you inject ____? <i>(Average # of injections/day)</i>	e. How many days did you use ____ without injecting (smoking, snorting, swallowing) in the last 30 days? <i>(If 0, skip to next drug)</i>	f. How many drinks did you have a day or how many times a day did you use ____ without injecting?
46. Alcohol						
47. Marijuana						
48. Cocaine or crack by itself						
49. Heroin by itself						
50. Heroin and cocaine together (speedball)						
51. Methamphetamine/ "Crystal meth"						
52. Amphetamine/"speed" or Adderall						
53. Ecstasy (MDMA)						
54. Poppers, nitrates, or other inhalants						
55. Non-medical use of Xanax or Valium						
56. Non-medical use of painkillers Hydrocodone (Vicodin), Oxycodone (OxyContin), or Codeine						
57. Other drugs:						

APPENDIX E (continued)

SURVEY INSTRUMENT

58. Have you ever used drugs intravenously (injecting?)

Yes1

No2

Not sure8

59. *Ask only if the respondent acknowledged injecting any drugs in Q48-57:* In the last 30 days, how many times (that is, number of injections) did you inject using needles or syringes that you know had been used by somebody else?

Number of times

60. *Ask only if the respondent acknowledged injecting any drugs in Q48-57:* In the last 30 days, how many times (that is, number of injections) did you use a cooker, cotton, or rinse water that you know had been used somebody else?

Number of times

61. Now I'm going to ask you a few questions about sex. During the past 30 days, how many people did you have vaginal or anal sex with?

Total number of partners
If 0 → SKIP to Q68

62. How many of your partners were female?

Number of female partners

63. How many of your partners were male?

Number of male partners

64a. *If any female partners reported:* In the past 30 days, how many times did you have vaginal sex with female partners?

Number of times
If 0 → SKIP to Q65

APPENDIX E (continued)

SURVEY INSTRUMENT

64b. Of these ____ times, how many times did you use a condom? _____

Number of times used condom during vaginal sex with female partners

64c. Of these ____ times, how many times were you drunk or high while having sex? _____

Number of times drunk/high during vaginal sex with female partners

65a. *If any female partners reported:* In the past 30 days, how many times did you have anal sex with female partners? _____

Number of times
If 0 →SKIP to Q66 (female respondents) or Q67 (male respondents)

65b. Of these ____ times, how many times did you use a condom? _____

Number of times used condom during anal sex with female partners

65c. Of these ____ times, how many times were you drunk or high while having sex? _____

Number of times drunk/high during anal sex with female partners

66a. *Ask female respondents only:* In the past 30 days, how many times did you have vaginal sex with male partners? _____

Number of times
If 0 or if respondent is male →SKIP to Q67

66b. Of these ____ times, how many times did you or your partner use a condom? _____

Number of times used condom during vaginal sex with male partners

66c. Of these ____ times, how many times were you drunk or high while having sex? _____

Number of times drunk/high during vaginal sex with male partners

APPENDIX E (continued)

SURVEY INSTRUMENT

67a. *If male partners reported:* In the past 30 days, how many times did you have anal sex with male partners?

Number of times
If 0 → SKIP to Q68

67b. Of these _____ times, how many times did you or your partner use a condom?

Number of times used condom during anal sex with male partners

67c. Of these _____ times, how many times were you drunk or high while having sex?

Number of times drunk/high during anal sex with male partners

68. Did you ever...

If respondent acknowledges "ever," ask about in the past 30 days and if so, how many times.

	<u>Ever?</u>	<u>Past 30 Days?</u>	<u>How many times</u>		<u>Not Sure</u>
			<u>in past 30 days?</u>	<u>No</u>	
a. Have <u>vaginal</u> sex with someone in exchange for money, drugs, food, or a place to stay?	1	2	_____	0	8
b. Have <u>anal</u> sex with someone in exchange for money, drugs, food, or a place to stay?	1	2	_____	0	8
c. Have <u>oral</u> sex with someone in exchange for money, drugs, food, or a place to stay?	1	2	_____	0	8
d. Give someone money, drugs, food, or a place to stay in exchange for having <u>vaginal</u> sex with you?.....	1	2	_____	0	8
e. Give someone money, drugs, food, or a place to stay in exchange for having <u>anal</u> sex with you?.....	1	2	_____	0	8
f. Give someone money, drugs, food, or a place to stay in exchange for having <u>oral</u> sex with you?.....	1	2	_____	0	8

APPENDIX E (continued)

SURVEY INSTRUMENT

Sexually Transmitted Infections and HIV Status

The next few questions that I am going to ask are about sexually transmitted infections, including HIV and AIDS. I want to remind you that we will keep your answers confidential.

69. In the past 12 months, have you been told by a doctor, nurse, or other health professional that you had any of the following sexually transmitted infections?

- Gonorrhea1
 Chlamydia2
 Herpes3
 Genital warts4
 Syphilis.....5
 Hepatitis B6
 Other:7
-
- Not sure8

70. Has a doctor, nurse, or other health care provider ever told you that you have HIV or AIDS?

- Yes1
 No2→**SKIP to Q75**
 Not sure8→**SKIP to Q75**

71. In what year were you first diagnosed with HIV/AIDS?

Year of diagnosis

72. Are you currently prescribed antiretroviral drug therapy (known as “HAART”) for HIV/AIDS?

- Yes1
 No2→**SKIP to Q77**
 Not sure8→**SKIP to Q77**

APPENDIX E (continued)

SURVEY INSTRUMENT

73. How closely do you take your HIV medication as prescribed?

- All of the time,1
 Most of the time,.....2
 About half the time,3
 Some of the time, or.....4
 Never?5
 Not sure8

74. When was the last time you missed any of your HIV medication?

- Within the past week,1→**SKIP to Q77**
 One to two weeks ago,.....2→**SKIP to Q77**
 Two to four weeks ago,3→**SKIP to Q77**
 One to three months ago,4→**SKIP to Q77**
 More than three months ago, or5→**SKIP to Q77**
 Never?6→**SKIP to Q77**
 Not sure8→**SKIP to Q77**

75. Have you ever had a test for HIV/AIDS?

- Yes1
 No2→**SKIP to Q77**
 Not sure8→**SKIP to Q77**

76. When was your last test for HIV/AIDS? Was it . . .

- Within the last 6 months,1
 More than 6 months ago to 1 year ago,.....2
 More than 1 year ago to 2 years ago, or3
 More than 2 years ago?.....4
 Not sure8

APPENDIX E (continued)

SURVEY INSTRUMENT

Demographics

We have reached the last part of the survey. I am going to ask you a few more questions about yourself and your background.

77. What is your gender? Do you identify as...

Male,1→*SKIP to Q79*

Female,2→*SKIP to Q79*

Transgender male-to-female,3

Transgender female-to-male, or4

Another gender identity?5

78. What sex were you assigned on your original birth certificate?

Male.....1

Female2

79. Do you think of yourself as:

Straight,1

Gay or lesbian,2

Bisexual, or3

Something else?4

Specify response

80. Do you identify as Hispanic or Latino?

Yes1

No2

APPENDIX E (continued)

SURVEY INSTRUMENT

81. What is your race? Please tell me all that apply. Do you identify as ...

African American or Black,1
 Asian American or Pacific Islander,2
 Native American or Native Alaskan,8
 White or Caucasian, or16
 Another race?32

Specify other race

82. What is the highest level of school that you completed?

Grade school,1
 Some high school,2
 High school diploma or GED,3
 Some college,4
 College degree, or5
 Graduate degree?6

83. Are you currently taking classes toward an associate's, bachelor's, or graduate degree?

Yes1
 No2
Not sure8

84. Are you a veteran who has served on active duty in the U.S. Armed Forces?

Yes1
 No2
Not sure8

APPENDIX E (continued)

SURVEY INSTRUMENT

85. In what year were you born?

Respondent's year of birth

86. Next I have a few questions about your income. Please remember that I am asking about your income only for the purpose of our research study. This information will not be reported to any other agencies and will not be used to determine if you are eligible for benefits or programs.

I am going to list some common sources of income. For each source I list, please tell me if you have received any income from that source in the past 30 days. If you have received income from that source, I will ask you to tell me how much.

	<u>Yes</u>	<u>Amount</u>	<u>No</u>	<u>Not Sure</u>
a. Wages, salary, or tips from a job	1	\$_____	2	8
What is your job?				

b. Social Security Income (SSI) or Social Security Disability Income (SSDI) that you qualify for because of a disability	1	\$_____	2	8
c. Social Security or other retirement benefits that you, your spouse, or your parents earned through work.....	1	\$_____	2	8
d. Veterans Administration payments for military service.....	1	\$_____	2	8
e. Unemployment compensation.....	1	\$_____	2	8
f. Welfare benefits from Temporary Assistance to Needy Families (TANF)...	1	\$_____	2	8
g. Link card or food stamp benefits	1	\$_____	2	8
h. Money from family, friends, or a spouse, including alimony or child support	1	\$_____	2	8

APPENDIX E (continued)

SURVEY INSTRUMENT

87. Many people have had to rely on other types of activities in order to earn money. In the past 30 days, please tell me if you have received any income or money from any of the following activities. I want to remind you that we will not share this information

	<u>Yes</u>	<u>No</u>	<i>Not Sure</i>
a. Pan-handling or asking strangers for money	1	2	8
b. Selling things like cigarettes, candy, or flowers	1	2	8
c. Watching people's kids.....	1	2	8
d. Manual work like washing cars, fixing cars, yard work, or home repairs.....	1	2	8
e. Shoplifting.....	1	2	8
f. Burglary or robbery.....	1	2	8
g. Selling drugs	1	2	8
h. Exchanging sex for money	1	2	8
i. Are there any other ways that you earned money in the past 30 days that we didn't talk about yet?.....	1	2	8
<i>If yes: What was it?</i>			

88. How much money total did you earn from these activities in the past 30 days?

\$ _____

APPENDIX E (continued)

SURVEY INSTRUMENT

89. How did you find out about this research study? Was it . . .

From a member of the research team,1

From a flyer or postcard you saw in the building where
you live,2

From another resident in your building, or.....3

Some other way?4

Describe other way that respondent heard about study

Not sure8

That was the last question on our survey. Thank you very much for taking the time to complete this survey with me. This information will be very useful in our study on housing, health, and HIV risk.

Do you have any questions for me about this survey or the research study?

Thank respondent and provide respondent with information sheet describing services available at COIP and at other social service agencies in the neighborhood. Provide respondent with compensation (\$20 for Phase 2 respondents).

Thanks again and have a great day!

APPENDIX F

RECRUITMENT FLYER



We are conducting a research study to learn more about the health, housing histories, and HIV risk behaviors of people who live in Single Room Occupancy (SRO) buildings. If you are eligible, you will be asked to participate in a **single, anonymous survey** given by an interviewer that takes about 45 minutes. All interviews will take place at UIC Community Outreach Intervention Projects (COIP) office at 4407 N. Broadway.

Adult residents of certain SRO buildings in Chicago are eligible for the study. If you are eligible and complete the survey, you will be compensated \$20 for your time.

To find out more and see if you are eligible, please call Elizabeth Bowen at:
(312) 854-9244

APPENDIX G

TELEPHONE RESPONSE SCRIPT

University of Illinois at Chicago

Telephone Response Script – Phase 2 Only (Principal Investigator)

“Prior Homelessness and Rent Burden as Predictors of HIV Risk for
Single Room Occupancy Building Residents”

Note: Telephone recruitment will be used in Phase 2 only to respond to potential subjects who call to inquire about the study in response to seeing a flyer or hearing about the study from a friend or neighbor.

PI: Good morning/afternoon, thank you for calling.

If caller expresses interest in study, proceed with script:

PI: Thank you for your interest in participating in the study. Just to confirm that you know what the study is about, I will tell you a little bit about it now. My name is Elizabeth Bowen and I am a PhD student in the Jane Addams College of Social Work at the University of Illinois at Chicago. This study is being conducted for my dissertation research about people living in single room occupancy (SRO) buildings, to find out more about their health and housing histories and specifically about behaviors that may put people at risk for HIV. Participation in this study involves completing a survey interview one time. It takes about 45 minutes to complete. Your interview responses will be anonymous. You will be compensated \$20 for your time spent completing the interview. Are you still interested in participating in this study?

If caller confirms interest, proceed with script:

PI: Great. I need to ask you a couple of questions to see if you are eligible for the study:

- Where did you sleep last night?

If caller names an SRO building that is a recruitment site for the study, continue with questions. If caller names another location, inform him/her that he/she is not eligible.

- Do you live by yourself in a single room at this building?

Caller must answer yes to be eligible for the study.

- In what year were you born?

Caller must state 1995 or earlier to be eligible for the study. If caller states 1995, confirm if caller is already 18.

- Have you previously completed an interview for this study, “Prior Homeless and Rent Burden as Predictors of HIV Risk for Single Room Occupancy Building Residents”?

If caller answers yes, inform him/her that he/she is not eligible.

If caller appears to be eligible, proceed with script:

PI: It appears you are eligible for the study. The interviews for this study will take place at the office of Community Outreach Intervention Projects (COIP), a program affiliated with the University of Illinois at Chicago School of Public Health at 4407 N. Broadway. When you come in, you will be asked the same questions that I just asked you to confirm that you are still eligible for the study. When would you like to come in? *To preserve anonymity, record potential subject’s mother’s first name on the scheduling calendar, noting “TR” for telephone recruit to indicate that the subject was not recruited in person and will not have a recruitment card.*

APPENDIX H

FACE-TO-FACE RECRUITMENT SCRIPTS

University of Illinois at Chicago

Face-to-Face Recruitment Script Phase 2 (Principal Investigator)

“Prior Homelessness and Rent Burden as Predictors of HIV Risk for
Single Room Occupancy Building Residents”

Good morning/afternoon. My name is Elizabeth Bowen and I am a PhD student in the Jane Addams College of Social Work at the University of Illinois at Chicago. I am conducting a dissertation research study about people living in single room occupancy (SRO) buildings to find out more about the health and housing histories of people living in buildings like this and specifically about behaviors that may put people at risk for HIV. Do you happen to live by yourself in a single room in this building?

→If NO: OK, thank you for listening and have a good day.

→If YES: *Proceed with script below.*

Participation in this study involves completing a survey interview one time. It takes about 45 minutes to complete. Your interview responses will be anonymous. If you are eligible and chose to complete the survey interview, you will be compensated \$20 for your time. Are you interested in participating in this study?

→If NO: Thank you for listening and have a good day.

→If YES: *Proceed with script below.*

The interviews for this study will take place at the office of Community Outreach Intervention Projects (COIP), a program affiliated with the University of Illinois at Chicago School of Public Health at 4407 N. Broadway. I am going to give you a recruitment card now for this study. Please bring this card with you when you come in to the COIP office to do the interview. Would you like to schedule a time now to come to COIP and complete the interview?

→If NO: OK, please call this number on the card whenever you're ready to make an appointment. Remember to bring the card with you to the interview.

→If YES: Great. When would you like to come in? *To preserve anonymity, ask the subject for his/her mother's first name (rather than the subject's name) to write on the scheduling calendar. Write appointment date and time on the back of the subject's recruitment card and remind him/her to bring the card to the study and to call the number on the card if he/she needs to cancel or change the appointment time.*

→If potential subject is recruited onsite at an SRO located more than 4 blocks from the COIP office (Glenn Apartments at 4940 N. Winthrop, Foswyn Arms Apartments at 5240 N. Winthrop, or Lawrence House at 1020 W. Lawrence): *Provide subject with CTA transit card.*

APPENDIX H (continued)

FACE-TO-FACE RECRUITMENT SCRIPTS

University of Illinois at Chicago

Face-to-Face Recruitment Script Phase 2 - Research Assistant

“Prior Homelessness and Rent Burden as Predictors of HIV Risk for
Single Room Occupancy Building Residents”

Good morning/afternoon. My name is Sebastino Aviles and I am a master’s student in social work and public health at the University of Illinois at Chicago (UIC). I am working with UIC PhD student Elizabeth Bowen to help conduct a dissertation research study about people living in single room occupancy (SRO) buildings to find out more about the health and housing histories of people living in buildings like this and specifically about behaviors that may put people at risk for HIV. Do you happen to live by yourself in a single room in this building?

→If NO: OK, thank you for listening and have a good day.

→If YES: *Proceed with script below.*

Participation in this study involves completing a survey interview one time. It takes about 45 minutes to complete. Your interview responses will be anonymous. If you are eligible and chose to complete the survey interview, you will be compensated \$20 for your time. Are you interested in participating in this study?

→If NO: Thank you for listening and have a good day.

→If YES: *Proceed with script below.*

The interviews for this study will take place at the office of Community Outreach Intervention Projects (COIP), a program affiliated with the University of Illinois at Chicago School of Public Health at 4407 N. Broadway. I am going to give you a recruitment card now for this study. Please bring this card with you when you come in to the COIP office to do the interview. Would you like to schedule a time now to come to COIP and complete the interview?

→If NO: OK, please call this number on the card whenever you’re ready to make an appointment. Remember to bring the card with you to the interview.

→If YES: Great. When would you like to come in? *To preserve anonymity, ask the subject for his/her mother’s first name (rather than the subject’s name) to write on the scheduling calendar. Write appointment date and time on the back of the subject’s recruitment card and remind him/her to bring the card to the study and to call the number on the card if he/she needs to cancel or change the appointment time.*

→If potential subject is recruited onsite at an SRO located more than 4 blocks from the COIP office (Glenn Apartments at 4940 N. Winthrop, Foswyn Arms Apartments at 5240 N. Winthrop, or Lawrence House at 1020 W. Lawrence): *Provide subject with CTA transit card.*

APPENDIX I

RECRUITMENT CARD TEMPLATE

**University of Illinois at Chicago (UIC)
Study on Housing, Health and HIV Risk for SRO
Residents**

UIC is doing a research study to learn more about the health, housing histories, and HIV risk behaviors of people living in SRO buildings. This is your recruitment card for the study. Please bring this card when you come for your appointment to complete the survey interview. Interviews will take place at the UIC Community Outreach Intervention Projects (COIP) office at 4407 N. Broadway.

If you have any questions or need to reschedule your appointment, call Elizabeth Bowen at

(312) 854-9244

A

**University of Illinois at Chicago (UIC)
Study on Housing, Health and HIV Risk for SRO
Residents**

UIC is doing a research study to learn more about the health, housing histories, and HIV risk behaviors of people living in SRO buildings. This is your recruitment card for the study. Please bring this card when you come for your appointment to complete the survey interview. Interviews will take place at the UIC Community Outreach Intervention Projects (COIP) office at 4407 N. Broadway.

If you have any questions or need to reschedule your appointment, call Elizabeth Bowen at

(312) 854-9244

A

**University of Illinois at Chicago (UIC)
Study on Housing, Health and HIV Risk for SRO
Residents**

UIC is doing a research study to learn more about the health, housing histories, and HIV risk behaviors of people living in SRO buildings. This is your recruitment card for the study. Please bring this card when you come for your appointment to complete the survey interview. Interviews will take place at the UIC Community Outreach Intervention Projects (COIP) office at 4407 N. Broadway.

If you have any questions or need to reschedule your appointment, call Elizabeth Bowen at

(312) 854-9244

A

**University of Illinois at Chicago (UIC)
Study on Housing, Health and HIV Risk for SRO
Residents**

UIC is doing a research study to learn more about the health, housing histories, and HIV risk behaviors of people living in SRO buildings. This is your recruitment card for the study. Please bring this card when you come for your appointment to complete the survey interview. Interviews will take place at the UIC Community Outreach Intervention Projects (COIP) office at 4407 N. Broadway.

If you have any questions or need to reschedule your appointment, call Elizabeth Bowen at

(312) 854-9244

A

**University of Illinois at Chicago (UIC)
Study on Housing, Health and HIV Risk for SRO
Residents**

UIC is doing a research study to learn more about the health, housing histories, and HIV risk behaviors of people living in SRO buildings. This is your recruitment card for the study. Please bring this card when you come for your appointment to complete the survey interview. Interviews will take place at the UIC Community Outreach Intervention Projects (COIP) office at 4407 N. Broadway.

If you have any questions or need to reschedule your appointment, call Elizabeth Bowen at

(312) 854-9244

A

**University of Illinois at Chicago (UIC)
Study on Housing, Health and HIV Risk for SRO
Residents**

UIC is doing a research study to learn more about the health, housing histories, and HIV risk behaviors of people living in SRO buildings. This is your recruitment card for the study. Please bring this card when you come for your appointment to complete the survey interview. Interviews will take place at the UIC Community Outreach Intervention Projects (COIP) office at 4407 N. Broadway.

If you have any questions or need to reschedule your appointment, call Elizabeth Bowen at

(312) 854-9244

A

APPENDIX J

UPTOWN COMMUNITY RESOURCES INFORMATION SHEET

Uptown Community Resources Information Sheet

Community Outreach Intervention Projects (COIP)

Address: 4407 N. Broadway

Phone: 773-561-3177

COIP is a program affiliated with the University of Illinois at Chicago School of Public Health. COIP conducts research and provides services to improve the health of at-risk individuals and communities. Services available at COIP include:

- Free rapid HIV testing and counseling
- Syringe exchange
- Case management for persons living with HIV/AIDS
- Prevention case management to reduce risks for HIV and other diseases

Dina & Eli Field EZRA Multi-Service Center and Uptown Café

Address: 909 W. Wilson Ave.

Phone: 773-275-0866

The EZRA Multi-Service Center provides a variety of services for low-income individuals and families, including:

- Hot meals served in a restaurant-style setting at the Uptown Café. Meals are served Monday, Tuesday, and Thursday evenings (6 p.m.) and Sunday brunch (11 a.m.)
- Food and clothing distribution
- Emergency assistance
- Job placement
- Social and spiritual development opportunities

Inspiration Corporation

Address: 4554 N. Broadway Ave. Suite 207

Phone: 773-878-0981

Inspiration Corporation helps people who are affected by homelessness and poverty to improve their lives and increase self-sufficiency through services including:

- Inspiration Kitchens, a food service training program that prepares participants for careers in the hospitality industry. Open orientations for the program are held every Wednesday at 1 p.m. at 4554 N. Broadway.
- The Employment Project provides employment preparation training, career services, transportation and basic needs assistance, employer outreach, referrals to training and education, and job placement and retention services.
- Housing services including subsidized, scattered site permanent supportive housing, eviction prevention grants, rental subsidies, and housing retention services
- Supportive services including case management, free community voice mail services, and health and wellness services

APPENDIX J (continued)

UPTOWN COMMUNITY RESOURCES INFORMATION SHEET

Mercy Housing Lakefront

Mercy Housing Lakefront owns and operates several properties that provide subsidized, supportive housing for people who are formerly homeless, low-income, and/or living with disabilities. Each building has its own leasing office to contact for information on vacancies, eligibility, and how to apply. Properties in the Uptown area include:

- Malden Arms Apartments, 4727 N. Malden, 773-334-2164
- Miriam Apartments, 4707 N. Malden, 773-506-3427
- Carlton Apartments, 4626 N. Magnolia, 773-506-3421
- Major Jenkins Apartments, 5012 N. Winthrop, 773-506-3486
- Delmar Apartments, 5042 N. Winthrop, 773-273-6672
- Harold Washington Apartments, 4946 N. Sheridan, 872-213-1121

Heartland Health Center-Wilson

Address: 845 W. Wilson Ave.

Phone: 773-506-4283

Heartland Health Center is a federally qualified health center with several locations, including one in Uptown at 845 W. Wilson Ave. Services available here include primary care, women's health services, and nutrition services. These services are available to people who do not have health insurance as well as those with Medicaid, Medicare, or private insurance.

Chicago Uptown Ministry

Address: 4720 N. Sheridan Rd.

Phone: 773-271-3760

Chicago Uptown Ministry, a program affiliated with Lutheran Child and Family Services in Illinois, provides services to homeless and low-income people including:

- Drop-in center providing coffee, snacks, telephone use, and other amenities
- Food pantry
- 12 Step groups and other support groups
- Referrals for substance abuse treatment

Thresholds

Address: Multiple locations

Phone (Central Intake Line): 773-572-5400

Thresholds provides a variety of comprehensive, individualized mental health services including psychiatric rehabilitation and recovery programs, outreach programs, housing, educational advancement, social opportunities and employment services. Call the central intake line to find out more and see if you may qualify for services.

Sarah's Circle

Address: 4750 N. Sheridan Rd., Suite 2200

Phone: 773-728-1991 ext. 301

Sarah's Circle provides housing assistance, case management, and other services for women who have experienced homelessness.

APPENDIX K

IRB REQUEST FOR MODIFICATIONS

UNIVERSITY OF ILLINOIS AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Request for Modifications and/or Information **Expedited Review** **Initial Review**

March 19, 2013

Elizabeth Bowen
Jane Addams School of Social Work
Jane Addams College of Social Work
1040 W Harrison, M/C 309
Chicago, IL 60607
Phone: (312) 426-4697 / Fax: (312) 996-2770

RE: **Research Protocol # 2013-0257**
"Prior Homelessness and Rent Burden as Predictors of HIV Risk for Single Room Occupancy Building Residents"

Dear Ms. Bowen:

Your Initial Review application, received on March 11, 2013, was reviewed by members of the Institutional Review Board (IRB) # 2 under expedited review procedures [45 CFR 46.110(b)(2)] on March 15, 2013. It was determined that modifications and/or additional information about the research are required. The IRB requests the following:

Please remember to submit a copy of all finalized data collection instruments prior to using them in the field. If finalized instruments are submitted after the initial approval of this research has been granted, the instruments must be accompanied by an Amendment form when submitted to the UIC IRB.

Please remember to submit a revised Appendix P listing all research personnel before they become involved in research activities. If additional personnel are added after the initial approval of this research has been granted, Appendix P must be accompanied by an Amendment form when submitted to the UIC IRB.

Please remember to submit letters of support from any additional non-UIC sites prior to accessing/analyzing identifiable data at those sites and/or recruiting/enrolling subjects at those sites. If additional sites are added after the initial approval of this research has been granted, letters of support must be accompanied by an Amendment form when submitted to the UIC IRB.

APPENDIX K (continued)

IRB REQUEST FOR MODIFICATIONS

2013-0257

Page 2 of 2

3/19/2013

1. Issues regarding research protocol and /or research protocol application:

- 1.1 Please submit a copy of the funding award letter.
- 1.2 *Initial Review application*, Page 13 and following: Please verify that subjects who participated in Phase 1 will be screened out of Phase 2 by simply answering the screening question, and that their prior participation will not be checked in any other way.

2. Issues regarding the informed consent process and/or document:

Please submit a copy of the flyer(s) that may be posted and are mentioned on Page 11 of the Initial Review application. Kindly note that all recruitment documents must include a footer with a unique document name, version number, and date.

When submitting your response provide **1 original and 2 collated copies** (3 total) of the following:

1. A cover letter that references this letter (date) and that responds to each specific item by listing the IRB's requirements from that letter. Use the same numbering system as in the IRB's letter and list your responses after each item.
2. A copy of this letter.
3. For modifications that involve the research protocol and/or research protocol application form:
 - a. Provide the revised research protocol and/or research protocol application with the modifications and information incorporated.
 - b. **Please highlight** or shade the additions and ~~strike through~~ the deletions on **each of the three (3) copies**.
 - c. Include the next sequential **version number and date on each page**.

The IRB has determined that your response to these required modifications may be reviewed under expedited review procedures without being scheduled for review at a convened IRB meeting. Based on your response, the IRB has the right to ask further questions, seek additional information, require further modifications, or refer your response to the convened IRB.

Please note that you **may not** initiate the research, including the recruitment of subjects, until you receive a **written notice of IRB approval** that will include the date-stamped informed consent documents to use when seeking consent from subjects.

If you do not respond to the IRB's requests within 90 days of this letter, your research protocol submission will be automatically withdrawn from the review process and the IRB will not take any further action.

If you have any questions or need further help, please contact the OPRS office at (312) 996-1711 or me at (312) 996-2014. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Sandra K. Costello

Sandra Costello
Assistant Director, IRB #2
Office for the Protection of Research Subjects

cc: Creasie Finney Hairston, Jane Addams School of Social Work, M/C 309
Christopher Mitchell (faculty advisor), Jane Addams School of Social Work, M/C 309

APPENDIX L

IRB APPROVAL NOTICE

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice
Initial Review (Response To Modifications)

April 1, 2013

Elizabeth Bowen
Jane Addams School of Social Work
Jane Addams College of Social Work
1040 W Harrison, M/C 309
Chicago, IL 60607
Phone: (312) 426-4697 / Fax: (312) 996-2770

RE: **Protocol # 2013-0257**
"Prior Homelessness and Rent Burden as Predictors of HIV Risk for Single Room Occupancy Building Residents"

Dear Ms. Bowen:

Your Initial Review (Response To Modifications) was reviewed and approved by the Expedited review process on April 1, 2013. You may now begin your research

Please note the following information about your approved research protocol:

The Board would like to express its appreciation for a well-organized application.

Please remember to submit a copy of all finalized data collection instruments prior to using them in the field. If finalized instruments are submitted after the initial approval of this research has been granted, the instruments must be accompanied by an Amendment form when submitted to the UIC IRB.

Please remember to submit a revised Appendix P listing all research personnel before they become involved in research activities. If additional personnel are added after the initial approval of this research has been granted, Appendix P must be accompanied by an Amendment form when submitted to the UIC IRB.

Please remember to submit letters of support from any additional non-UIC sites prior to accessing/analyzing identifiable data at those sites and/or recruiting/enrolling subjects at those sites. If additional sites are added after the initial approval of this research has been granted, letters of support must be accompanied by an Amendment form when submitted to the UIC IRB.

APPENDIX L (continued)

IRB APPROVAL NOTICE

2013-0257

Page 2 of 3

4/1/2013

Protocol Approval Period: April 1, 2013 - April 1, 2014
Approved Subject Enrollment #: 180
Additional Determinations for Research Involving Minors: These determinations have not been made for this study since it has not been approved for enrollment of minors.
Performance Sites: UIC, Wilson Men's Hotel - Chicago, Glenn Apartments - Chicago, Foswyn Arms Apartments - Chicago, Darlington Hotel - Chicago, Bachelor Apartments - Chicago
Sponsor: Chancellor's Graduate Research Fellowship
PAF#: - Not applicable
Grant/Contract No: Not applicable
Grant/Contract Title: Not applicable
Research Protocol:

- a) Prior Homelessness and Rent Burden as Predictors of HIV Risk for Single Room Occupancy Building Residents; Version 1; 03/08/2013

Recruitment Materials:

- a) Recruitment Flyer; Version 1; 03/08/2013
b) Face-to-Face Recruitment Script Phase 1; Version 1; 03/08/2013
c) Telephone Response to Flyer Script Phase 2; Version 1; 03/08/2013
d) Face-to-Face Recruitment Script Phase 2; Version 1; 03/08/2013
e) Recruitment Card Templates Phases 1 & 2; Version 1; 03/08/2013
f) Eligibility Screener Phases 1 & 2; Version 1; 03/08/2013

Informed Consents:

- a) Subject Information Sheet Phase 1; Version 1; 03/08/2013
b) Subject Information Sheet Phase 2; Version 1; 03/08/2013
c) A waiver of documentation of informed consent has been granted for all research activities under 45 CFR 46.117(c)(1) (minimal risk; primary risk is a breach of privacy and the subject's signature would be the only element disclosing subject's participation in the research)

Your research meets the criteria for expedited review as defined in 45 CFR 46.110(b)(1) under the following specific category:

(7) Research on individual or group characteristics or behavior (including but not limited to research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
03/11/2013	Initial Review	Expedited	03/15/2013	Modifications Required
03/27/2013	Response To Modifications	Expedited	04/01/2013	Approved

Please remember to:

APPENDIX L (continued)

IRB APPROVAL NOTICE

2013-0257

Page 3 of 3

4/1/2013

→ Use your **research protocol number** (2013-0257) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the enclosure,
"UIC Investigator Responsibilities, Protection of Human Research Subjects"
<http://tiger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf>

Please note that the UIC IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact OPRS at (312) 996-1711 or me at (312) 996-2014. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Sandra K Costello

Sandra Costello
 Assistant Director, IRB # 2
 Office for the Protection of Research Subjects

Enclosures:

1. **UIC Investigator Responsibilities, Protection of Human Research Subjects**
2. **Informed Consent Documents:**
 - a) Subject Information Sheet Phase 1; Version 1; 03/08/2013
 - b) Subject Information Sheet Phase 2; Version 1; 03/08/2013
3. **Recruiting Materials:**
 - a) Recruitment Flyer; Version 1; 03/08/2013
 - b) Face-to-Face Recruitment Script Phase 1; Version 1; 03/08/2013
 - c) Telephone Response to Flyer Script Phase 2; Version 1; 03/08/2013
 - d) Face-to-Face Recruitment Script Phase 2; Version 1; 03/08/2013
 - e) Recruitment Card Templates Phases 1 & 2; Version 1; 03/08/2013
 - f) Eligibility Screener Phases 1 & 2; Version 1; 03/08/2013

cc: Creasia Finney Hairston, Jane Addams School of Social Work, M/C 309
 Christopher Mitchell (faculty advisor), Jane Addams School of Social Work, M/C 309

APPENDIX M

IRB APPROVAL NOTICE FOR AMMENDMENT #1

UNIVERSITY OF ILLINOIS AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice Amendment to Research Protocol and/or Consent Document – Expedited Review UIC Amendment # 1

April 30, 2013

Elizabeth Bowen
Jane Addams School of Social Work
Jane Addams College of Social Work
1040 W Harrison, M/C 309
Chicago, IL 60607
Phone: (312) 426-4697 / Fax: (312) 996-2770

RE: **Protocol # 2013-0257**
**“Prior Homelessness and Rent Burden as Predictors of HIV Risk for Single Room
Occupancy Building Residents”**

Dear Ms. Bowen:

Members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research and/or consent form under expedited procedures for minor changes to previously approved research allowed by Federal regulations [45 CFR 46.110(b)(2)]. The amendment to your research was determined to be acceptable and may now be implemented.

Please note the following information about your approved amendment:

Amendment Approval Date: April 29, 2013

Amendment:

Summary: UIC Amendment #1 dated and received April 22, 2013 is an investigator-initiated amendment regarding the following:

- (1) Revise the eligibility screener to eliminate erroneous language (Eligibility Screener Phase 2, v2, 4/22/2013)
- (2) Submit the finalized version of the survey instrument, which include additions, modifications, and deletion of questions based off of the pilot phase. The survey will continue to take no more than 45 minutes to complete, as was originally indicated in the protocol (Survey Interview Phase 2, v2, 4/22/2013);
- (3) Addition of key research personnel Sebastino Aviles (Appendix P included);
- (4) Submit a new recruitment script to be used by Mr. Aviles, for face-to-face recruitment as described in the initial review application and research protocol (Face-to-Face Recruitment Script Phase 2-Research Assistant, v1, 4/22/2013).

APPENDIX M (continued)

IRB APPROVAL NOTICE FOR AMMENDMENT #1

2013-0257

Page 2 of 3

April 30, 2013

Approved Subject Enrollment #: 180
Performance Sites: UIC, Wilson Men's Hotel - Chicago, Glenn Apartments - Chicago, Foswyn Arms Apartments - Chicago, Darlington Hotel - Chicago, Bachelor Apartments - Chicago
Sponsor: Chancellor's Graduate Research Fellowship
PAF#: Not applicable
Grant/Contract No: Not applicable
Grant/Contract Title: Not applicable
Recruiting Materials:
 a) Eligibility Screener Phase 2; Version 2 04/22/2013
 b) Face-to-Face Recruitment Script Phase 2-Research Assistant Version 1, 04/22/2013

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
04/22/2013	Amendment	Expedited	04/29/2013	Approved

Please be sure to:

→ Use your research protocol number (2013-0257) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the enclosure,

"UIC Investigator Responsibilities, Protection of Human Research Subjects"

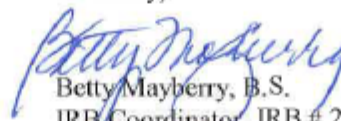
(<http://tiger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf>)

Please note that the UIC IRB #2 has the right to seek additional information, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS at (312) 996-1711 or me at (312) 355-2764. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,



Betty Mayberry, B.S.
 IRB Coordinator, IRB # 2

Office for the Protection of Research Subjects

APPENDIX M (continued)**IRB APPROVAL NOTICE FOR AMMENDMENT #1**

2013-0257

Page 3 of 3

April 30, 2013

Enclosures:

1. Recruiting Materials:

- a) Eligibility Screener Phase 2; Version 2 04/22/2013
- b) Face-to-Face Recruitment Script Phase 2-Research Assistant Version 1, 04/22/2013

cc: Christopher Mitchell, Faculty Sponsor, Jane Addams College of Social Work, M/C 309
Creasie Finney Hairston, Jane Addams School of Social Work, M/C 147

APPENDIX N

IRB APPROVAL NOTICE FOR AMMENDMENT #2

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice
Amendment to Research Protocol and/or Consent Document – Expedited Review
UIC Amendment # 2

June 28, 2013

Elizabeth Bowen
Jane Addams School of Social Work
Jane Addams College of Social Work
1040 W Harrison, M/C 309
Chicago, IL 60607
Phone: (312) 426-4697 / Fax: (312) 996-2770

RE: **Protocol # 2013-0257**
**“Prior Homelessness and Rent Burden as Predictors of HIV Risk for Single Room
Occupancy Building Residents”**

Dear Ms. Bowen:

Members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research under expedited procedures for minor changes to previously approved research allowed by Federal regulations [45 CFR 46.110(b)(2)]. The amendment to your research was determined to be acceptable and may now be implemented.

Please note the following information about your approved amendment:

Amendment Approval Date: June 27, 2013

Amendment:

Summary: UIC Amendment #2 dated June 24, 2013, received June 26, 2013, is an investigator-initiated amendment to revise recruitment documents- Face-to-Face Recruitment Script Phase 2, (Principal Investigator) version 2, 6/24/13; Face-to-Face Recruitment Script Phase 2 (Research Assistant), version 2, 6/24/13; and Telephone Response Script Phase 2 Only, (Principal Investigator) version 2, 6/24/13. The revision is to clarify that the target population for the study is adults living alone in single-occupancy rooms. Also, the Telephone Response Script –Phase 2 can be used for general inquiries, such as potential subjects who inquire about the study after hearing about it from a friend or neighbor, as well as those who call in response to seeing one of the study flyers.

Approved Subject Enrollment #: 180

Performance Sites: UIC, Wilson Men's Hotel - Chicago, Glenn Apartments - Chicago, Foswyn Arms Apartments - Chicago, Darlington Hotel - Chicago, Bachelor Apartments - Chicago

APPENDIX N (continued)

IRB APPROVAL NOTICE FOR AMMENDMENT #2

2013-0257

Page 2 of 2

June 28, 2013

Sponsor: Chancellor's Graduate Research Fellowship
PAF#: Not applicable
Grant/Contract No: Not applicable
Grant/Contract Title: Not applicable
Recruiting Materials:

- a) Telephone Response Script Phase 2 Only, (Principal Investigator) Version 2, 06/24/2013
- b) Face-to-Face Recruitment Script Phase 2-Research Assistant Version 2, 06/24/2013
- c) Face-to-Face Recruitment Script Phase 2(Principal Investigator) Version 2, 06/24/2013

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
06/26/2013	Amendment	Expedited	06/27/2013	Approved

Please be sure to:

→ Use your research protocol number (2013-0257) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the enclosure,

"UIC Investigator Responsibilities, Protection of Human Research Subjects"

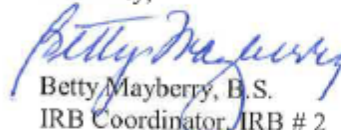
(<http://tiger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf>)

Please note that the UIC IRB #2 has the right to seek additional information, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS at (312) 996-1711 or me at (312) 355-2764. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,



Betty Mayberry, B.S.
IRB Coordinator, IRB # 2

Office for the Protection of Research Subjects

Enclosures:

1. Recruiting Materials:

- a) Telephone Response Script Phase 2 Only, (Principal Investigator) Version 2, 06/24/2013
- b) Face-to-Face Recruitment Script Phase 2-Research Assistant Version 2, 06/24/2013
- c) Face-to-Face Recruitment Script Phase 2(Principal Investigator) Version 2, 06/24/2013

cc: Christopher Mitchell, Faculty Sponsor, Jane Addams School of Social Work, M/C 309
Creasia Hairston, Jane Addams School of Social Work, M/C 309

APPENDIX O

IRB APPROVAL NOTICE FOR AMMENDMENT #3

UNIVERSITY OF ILLINOIS AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice

Amendment to Research Protocol and/or Consent Document – Expedited Review UIC Amendment # 3

July 30, 2013

Elizabeth Bowen
Jane Addams School of Social Work
Jane Addams College of Social Work
1040 W Harrison, M/C 309
Chicago, IL 60607
Phone: (312) 426-4697 / Fax: (312) 996-2770

RE: **Protocol # 2013-0257**

**“Prior Homelessness and Rent Burden as Predictors of HIV Risk for Single Room
Occupancy Building Residents”**

Dear Ms. Bowen:

Members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research and/or consent form under expedited procedures for minor changes to previously approved research allowed by Federal regulations [45 CFR 46.110(b)(2)]. The amendment to your research was determined to be acceptable and may now be implemented.

Please note the following information about your approved amendment:

Amendment Approval Date: July 25, 2013

Amendment:

Summary: UIC Amendment #3 dated July 18, 2013, received July 22, 2013, is an investigator-initiated amendment to add Lorali, a single room occupancy (SRO) hotel, as a performance site. An Appendix K and a letter of support were included in the submission. Also, because the study's face-to-face recruitment scripts and subject information sheet refer to COIP (Community Outreach Intervention Projects) as the site of data collection, new versions of these documents to be used only at the Lorali are included. They are –Face-to-Face Recruitment Script Phase 2 (Principal Investigator)-Lorali, version 1, 7/18/13, Face-to-Face Recruitment Script Phase 2 (Research Assistant)-Lorali, version 1, 7/18/13, and Subject Information Sheet-Phase 2-Lorali, version 1, 7/18/13.

Approved Subject Enrollment #: 180

Performance Sites: UIC, Wilson Men's Hotel - Chicago, Glenn Apartments - Chicago, Foswyn Arms Apartments - Chicago, Darlington Hotel - Chicago, Bachelor Apartments - Chicago, The Lorali

APPENDIX O (continued)

IRB APPROVAL NOTICE FOR AMMENDMENT #3

2013-0257

Page 2 of 3

July 30, 2013

Sponsor: Chancellor's Graduate Research Fellowship
PAF#: Not applicable
Grant/Contract No: Not applicable
Grant/Contract Title: Not applicable
Recruiting Materials:

- a) Face-to-Face Recruitment Script Phase 2 (Principal Investigator)-Lorali Version 1, 07/18/2013
- b) Face-to-Face Recruitment Script Phase 2 (Research Assistant)- Lorali Version 1, 07/18/2013

Informed Consent:

- a) Subject Information Sheet-Phase 2-Lorali Version 1, 07/18/2013

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
07/22/2013	Amendment	Expedited	07/25/2013	Approved

Please be sure to:

→ Use only the IRB-approved and stamped consent document enclosed with this letter when enrolling subjects.

→ Use your research protocol number (2013-0257) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the enclosure,
"UIC Investigator Responsibilities, Protection of Human Research Subjects"
 (<http://tiger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf>)

Please note that the UIC IRB #2 has the right to ask further questions, seek additional information, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS at (312) 996-1711 or me at (312) 355-2764. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,



Betty Mayberry, B.S.
 IRB Coordinator, IRB # 2
 Office for the Protection of Research Subjects

APPENDIX O (continued)**IRB APPROVAL NOTICE FOR AMMENDMENT #3**

2013-0257

Page 3 of 3

July 30, 2013

Enclosures:

- 1. Informed Consent Document:**
 - a) Subject Information Sheet-Phase 2-Loralí Version 1, 07/18/2013
- 2. Recruiting Materials:**
 - a) Face-to-Face Recruitment Script Phase 2 (Principal Investigator)- Loralí Version 1, 07/18/2013
 - b) Face-to-Face Recruitment Script Phase 2 (Research Assistant)- Loralí Version 1, 07/18/2013

cc: Christopher Mitchell, Faculty Sponsor, Jane Addams School of Social Work, M/C 309
Creasie Hairston, Jane Addams School of Social Work, M/C 309

APPENDIX P

RECRUITMENT SCRIPTS AND SUBJECT INFORMATION SHEET MODIFIED FOR USE AT LORALI

University of Illinois at Chicago

Face-to-Face Recruitment Script Phase 2 (Principal Investigator) - Lorali

“Prior Homelessness and Rent Burden as Predictors of HIV Risk for
Single Room Occupancy Building Residents”

Good morning/afternoon. My name is Elizabeth Bowen and I am a PhD student in the Jane Addams College of Social Work at the University of Illinois at Chicago. I am conducting a dissertation research study about people living in single room occupancy (SRO) buildings to find out more about the health and housing histories of people living in buildings like this and specifically about behaviors that may put people at risk for HIV. Do you happen to live by yourself in a single room in this building?

→If NO: OK, thank you for listening and have a good day.

→If YES: *Proceed with script below.*

Participation in this study involves completing a survey interview one time. It takes about 45 minutes to complete. Your interview responses will be anonymous. If you are eligible and chose to complete the survey interview, you will be compensated \$20 for your time. Are you interested in participating in this study?

→If NO: Thank you for listening and have a good day.

→If YES: *Proceed with script below.*

We will be doing interviews for this study here in the conference room at this building. I am going to give you a recruitment card now for this study. Please bring this card with you when you come to do the interview. Would you like to schedule a time now to complete the interview?

→If NO: OK, please call this number on the card whenever you're ready to make an appointment. Remember to bring the card with you to the interview.

→If YES: Great. When would you like to do the interview? *To preserve anonymity, ask the subject for his/her mother's first name (rather than the subject's name) to write on the scheduling calendar. Write appointment date and time on the back of the subject's recruitment card and remind him/her to bring the card to the study and to call the number on the card if he/she needs to cancel or change the appointment time.*

APPENDIX P (continued)

RECRUITMENT SCRIPTS AND SUBJECT INFORMATION SHEET MODIFIED FOR USE AT LORALI

University of Illinois at Chicago

Face-to-Face Recruitment Script Phase 2 (Research Assistant) – Loralie

“Prior Homelessness and Rent Burden as Predictors of HIV Risk for
Single Room Occupancy Building Residents”

Good morning/afternoon. My name is Sebastino Aviles and I am a master’s student in social work and public health at the University of Illinois at Chicago (UIC). I am working with UIC PhD student Elizabeth Bowen to help conduct a dissertation research study about people living in single room occupancy (SRO) buildings to find out more about the health and housing histories of people living in buildings like this and specifically about behaviors that may put people at risk for HIV. Do you happen to live by yourself in a single room in this building?

→If NO: OK, thank you for listening and have a good day.

→If YES: *Proceed with script below.*

Participation in this study involves completing a survey interview one time. It takes about 45 minutes to complete. Your interview responses will be anonymous. If you are eligible and chose to complete the survey interview, you will be compensated \$20 for your time. Are you interested in participating in this study?

→If NO: Thank you for listening and have a good day.

→If YES: *Proceed with script below.*

We will be doing interviews for this study here in the conference room at this building. I am going to give you a recruitment card now for this study. Please bring this card with you when you come in to the COIP office to do the interview. Would you like to schedule a time now to come to COIP and complete the interview?

→If NO: OK, please call this number on the card whenever you’re ready to make an appointment. Remember to bring the card with you to the interview.

→If YES: Great. When would you like to do the interview? *To preserve anonymity, ask the subject for his/her mother’s first name (rather than the subject’s name) to write on the scheduling calendar. Write appointment date and time on the back of the subject’s recruitment card and remind him/her to bring the card to the study and to call the number on the card if he/she needs to cancel or change the appointment time.*

APPENDIX P (continued)

RECRUITMENT SCRIPTS AND SUBJECT INFORMATION SHEET MODIFIED FOR USE AT LORALI

University of Illinois at Chicago

Subject Information Sheet – Phase 2 – Lorali

“Prior Homelessness and Rent Burden as Predictors of HIV Risk for
Single Room Occupancy Building Residents”

You are being asked to participate in a research study. Researchers are required to provide an information sheet such as this one to tell you about the research, to explain that taking part is voluntary, to describe the risks and benefits of participation, and to help you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Principal Investigator Name and Title: Elizabeth Bowen, Doctoral Candidate

Department and Institution: Jane Addams College of Social Work at the University of Illinois at Chicago

Address: 1040 W. Harrison St., MC 309, Chicago, IL 60607

Phone and Email: 312-854-9244

Faculty Sponsor: Dr. Christopher Mitchell, Associate Professor

Why am I being asked to participate?

You are being asked to participate in a research study about people who live in Single Room Occupancy (SRO) buildings. The study is looking at different kinds of housing situations, such as being homeless or living in an SRO, and seeing if this may be related to health and behaviors that may put people at risk of transmitting or contracting HIV/AIDS or other health conditions. The study is being conducted by Elizabeth Bowen, a doctoral student at the University of Illinois at Chicago Jane Addams College of Social Work. This is a dissertation research study.

You have been asked to participate in this study because you are: (1) currently living at an SRO building in Chicago where recruitment for this study is taking place; (2) an adult age 18 or older; and (3) able to communicate verbally in English. A member of the Research Team will review this entire information sheet with you before you decide if you want to participate in the research study. In order to be in the study, you must demonstrate that you understand what your participation involves.

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future dealings with the University of Illinois at Chicago (UIC). If you decide to participate, you are free to withdraw at any time without affecting that relationship. Your participation will also not affect your housing at the Lorali in any way.

Approximately 180 subjects may be involved in this research at UIC, including 5 people who already participated in the first part of the study to test the survey instrument and about 175 people in this part of the study, where the researchers are using the survey to collect data from people living in SROs.

APPENDIX P (continued)**RECRUITMENT SCRIPTS AND SUBJECT INFORMATION SHEET MODIFIED
FOR USE AT LORALI****Why is the purpose of this research?**

This research is being done to better understand the health and risk behaviors of people living in SRO buildings. Past research shows that people who are homeless and living on the street have higher rates of health conditions including HIV/AIDS and problems with substance abuse. However, not much is

known about the health of people who living in SROs. This study will look at the housing histories and financial resources of people who live in SRO buildings and see if this is related to different health issues and behaviors including behaviors that put people at risk for HIV/AIDS. The study will help the Research Team to better understand the role that housing may play in health problems such as HIV/AIDS. It is hoped that this information will lead to the design of better programs and services to help people struggling with homelessness or unstable housing situations, HIV, substance abuse, and other health issues.

What procedures are involved?

The research will be performed in a private conference room at the Lorali, 1039 W. Lawrence Ave., Chicago. No Lorali staff or personnel are involved with this research. Your participation in the study will last only one time (today only). It is expected to take about 45 minutes.

The study procedures are as follows: When you finish reading through this information sheet, an interviewer will ask you if you have any questions about the study. The interviewer will answer any questions you have and then will ask you a few questions about the study to make sure you understand what participation in the study involves. If you answer these questions correctly, you will be asked if you consent to participate in the study. If you do not answer some of the questions correctly, the interviewer will review the information with you again and ask you the questions again to make sure you understand.

If you are able to demonstrate that you understand what the study is about and what your participation involves by answering the interviewer's questions and if you state that you consent to participate in the study, the interviewer will then interview you using a survey tool developed for this study. The interview includes questions about the following topics:

- Your housing situation, including where you currently live, places you have lived in the past, experiences with homelessness, and how much you pay in rent
- Spending time in jail or prison
- Your health, including having enough food and getting services for health, mental health, or substance abuse problems
- Different kinds of substances you may have used
- Your recent sexual activities, including if you have any sexually transmitted infections
- Your HIV status
- Background information such as your race, education level, and income

APPENDIX P (continued)

RECRUITMENT SCRIPTS AND SUBJECT INFORMATION SHEET MODIFIED FOR USE AT LORALI

Completing the survey interview is expected to take about 45 minutes. You do not have to answer any questions if you don't want to. If the interviewer asks you a question that you don't want to answer, just say "I don't want to answer that" and the interviewer will move on to the next question.

What are the potential risks or discomforts?

The main risk of participating in this study is that some of the questions in the interview may make you uncomfortable or upset. The interview includes questions about some sensitive topics, such as using different kinds of drugs and alcohol, having sex, spending time in jail or prison, and your HIV status. If you become upset during the interview, remember that at any time you may end the interview and leave the study, take a break, or decide not to answer a question. Another potential risk of this research is a loss of privacy. For example, it is possible that other people in your building could guess that you are a subject in the research study.

Are there benefits to taking part in the research?

This study is not designed to benefit you directly. This study is designed to learn more about the health and risk behaviors of people living in SROs. The study results may be used to help other people in the future. For example, understanding if people who have been homeless engage in certain behaviors that can put them at risk for HIV/AIDS after they obtain SRO housing may help service providers develop specialized prevention services for this group. The study may also help researchers to see if subsidies that help people pay their rent might potentially affect people's health and risk behaviors. In addition, regardless of if you participate in the study, you will be provided with information on the services available at Community Outreach Intervention Projects (COIP), an HIV prevention program affiliated with the UIC School of Public Health that has an office in Uptown, and at other social service agencies in the Uptown area.

What other options are there?

This is a voluntary study. You have the option to not participate in this study.

What about privacy and confidentiality?

The people who will know that you are a research subject are members of the Research Team. Otherwise information about you will only be disclosed to others with your written permission, or if necessary to protect your rights or welfare or if required by law. Several steps will be taken by the Research Team to protect your privacy and confidentiality. When you are interviewed, the interviewer will not ask you for any information that could identify you, such as your name or birth date. The name of the SRO where you live will not be recorded anywhere on the survey. You also will not be asked to sign a consent form to indicate that you consent to participating in the study. Instead, you will verbally indicate to the interviewer that you agree to participate in the study by being interviewed.

Completed anonymous surveys will be transported by the researcher to a locked file cabinet in the office of the faculty sponsor for this study at the University of Illinois at Chicago. For the purpose of statistical analyses, the data will be entered from the surveys onto a laptop computer with password security access to further protect the collected data. Only the lead research (Elizabeth Bowen) will

APPENDIX P (continued)

RECRUITMENT SCRIPTS AND SUBJECT INFORMATION SHEET MODIFIED FOR USE AT LORALI

have access to the computer, though the data may be shared with other researchers such as the faculty sponsor for this study. When the results of the research are published or discussed in conferences, no information will be included that would reveal your identity.

What are the costs for participating in this research?

There are no costs to you for participating in this research.

Will I be reimbursed for any of my expenses or paid for my participation in this research?

If you choose to participate in the study and be interviewed, you will be compensated \$20 cash for your time and efforts. You will receive \$20 from the interviewer at the end of the interview.

Can I withdraw or be removed from the study?

This study is completely voluntary. You can choose whether to be in this study or not. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time. This will not affect your ability to receive services at COIP, or any other benefits or services you are seeking. You may also refuse to answer any questions you don't want to during the interview and still remain in the study. The Researchers also have the right to stop your participation in this study without your consent if they believe it is in your best interests.

Who should I contact if I have questions?

The lead researcher conducting this study is Elizabeth Bowen. You may contact the researcher by telephone at 312-854-9244 or by email at ebowen2@uic.edu. Please contact the researcher if you have any questions about this study or your part in it, or if you have any concerns or complaints about the research. You may also contact the professor overseeing this study, Dr. Christopher Mitchell, Associate Professor at the University of Illinois at Chicago Jane Addams College of Social Work, at 312-996-8509 or by email at cgm@uic.edu.

What are my rights as a research subject?

If you feel you have not been treated according to the descriptions in this information sheet, or if you have any questions about your rights as a research subject, including questions, concerns, complaints, or to offer input, you may call the Office for the Protection of Research Subjects (OPRS) at 312-996-1711 or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu.

Remember:

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. If you decide to participate, you are free to withdraw at any time without affecting that relationship.

You are not required to sign a form to indicate that you consent to participate in the study. However, please let a Research Team member know if you would like documentation linking yourself with the research. You will be given a copy of this Subject Information Sheet for your information and to keep for your records.

CITED LITERATURE

- Aidala, A., Cross, J., Stall, R., Harre, D., & Sumartojo, E. (2005). Housing status and HIV risk behaviors: Implications for prevention and policy. *AIDS and Behavior*, 9(3), 251-265.
- Aidala, A. A., Lee, G., Garbers, S., & Chiasson, M. A. (2006). Sexual behaviors and sexual risk in a prospective cohort of HIV-positive men and women in New York City, 1994-2002: Implications for prevention. *AIDS Education & Prevention*, 18(1), 12-32.
- Aidala, A. A., & Sumartojo, E. (2007). Why housing? *AIDS and Behavior*, 11(Supplement 2), S1-S6.
- Allison, P. (2012a). *Do we really need zero-inflated models?* Retrieved from <http://www.statisticalhorizons.com/zero-inflated-models>
- Allison, P. (2012b). *Logistic regression for rare events*. Retrieved from <http://www.statisticalhorizons.com/logistic-regression-for-rare-events>
- Andía, J., Deren, S., Kang, S., Robles, R., Colón, H., Oliver-Velez, D., . . . Friedman, S. (2001). Residential status and HIV risk behaviors among Puerto Rican drug injectors in New York and Puerto Rico. *American Journal of Drug and Alcohol Abuse*, 27(4), 719-735.
- Apicello, J. (2010). A paradigm shift in housing and homeless services: Applying the population and high-risk framework to preventing homelessness. *The Open Health Services and Policy Journal*, 3, 41-52.
- Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for use in primary care* (2nd ed.). Retrieved from the World Health Organization website: <http://apps.who.int/iris/handle/10665/67205>
- Beijer, U., Wolf, A., & Fazel, S. (2012). Prevalence of tuberculosis, hepatitis C virus, and HIV in homeless people: A systematic review and meta-analysis. *The Lancet Infectious Diseases*, 12(11), 859-870.
- Berger, L. M., Heintze, T., Naidich, W. B., & Meyers, M. K. (2008). Subsidized housing and household hardship among low-income single-mother households. *Journal of Marriage and Family*, 70, 934-949.
- Berkman, L. F., & Kawachi, I. (2000). A historical framework for social epidemiology. In L. F. Berkman & I. Kawachi (Eds.), *Social epidemiology* (pp. 3-12). New York, NY: Oxford University Press.
- Blankenship, K., Friedman, S., Dworkin, S., & Mantell, J. (2006). Structural interventions: Concepts, challenges and opportunities for research. *Journal of Urban Health*, 83(1), 59-72.

- Boily, M-C., Baggaley, R. F., Wang, L., Masse, B., White, R. G., Hayes, R. J., & Alary, M. (2009). Heterosexual risk of HIV-1 infection per sexual act: Systematic review and meta-analysis of observational studies. *The Lancet*, 9(2), 118-129.
- Bradburn, N., Sudman, S., & Wansink, B. (2004). *Asking questions* (revised ed.). San Francisco, CA: Josey-Bass.
- Bratt, R. G. (1997, July/August). A withering commitment. *Shelterforce Online*. Retrieved from <http://www.nhi.org/online/issues/94/bratt.html>
- Braveman, P., Egerter, S., & Williams, D. R. (2011). The social determinants of health: Coming of age. *Annual Review of Public Health*, 32, 381-398.
- Braveman, P. A., Kumanyika, S., Fielding, J., LaVeist, T., Borrell, L. N., Manderscheid, R., & Troutman, A. (2011). Health disparities and health equity: The issue is justice. *American Journal of Public Health*, 101(S1), S149-S155.
- Brooner, R. K., Greenfield, L., Schmidt, C. W., & Bigelow, G. E. (1993). Antisocial personality disorder and HIV infection among intravenous drug abusers. *American Journal of Psychiatry*, 150, 53-58.
- Brown, Q. L., Cavanaugh, C. E., Penniman, T. V., & Latimer, W. W. (2012). The impact of homelessness on recent sex trade among pregnant women in drug treatment. *Journal of Substance Use*, 17(3), 287-293.
- Bryant, K. J. (2006). Expanding research on the role of alcohol consumption and related risks in the prevention and treatment of HIV/AIDS. *Substance Use & Misuse*, 41, 1465-1507.
- Butzen, J. (1996). Lakefront SRO Corporation: Reviving single room occupancy housing. In G. C. Hemmens, C. J. Hoch, & J. Carp (Eds.), *Under one roof: Innovations in shared housing* (pp. 75-85). Albany, NY: State University of New York Press.
- Cameron, A. C., & Windmeijer, F. A. G. (1996). R-squared measures for count data regression models with applications to health-care utilization. *Journal of Business & Economic Statistics*, 14(2), 209-220.
- Campo, J., Perea, M., del Romero, J., Cano, J., Hernando, V., & Bascones, A. (2006). Oral transmission of HIV, reality or fiction? An update. *Oral Diseases*, 12(3), 219-228.
- Catania, J., Kegeles, S., & Coates, T. (1990). Towards an understanding of risk behavior - an AIDS risk reduction model (ARRM). *Health Education Quarterly*, 17(1), 53-72.
- Cederbaum, J. A., Wenzel, S. L., Gilbert, M. L., & Chereji, E. (2013). The HIV risk reduction needs of homeless women in Los Angeles. *Women's Health Issues*, 23(3), e167-e172.

- Centers for Disease Control and Prevention. (2005, October). *HIV prevention in the third decade*. Retrieved from <http://www.cdc.gov/hiv/resources/reports/hiv3rddecade/>
- Centers for Disease Control and Prevention. (2008, February). *HIV/AIDS among persons aged 50 and over*. Retrieved from <http://www.cdc.gov/hiv/topics/over50/resources/factsheets/pdf/over50.pdf>
- Centers for Disease Control and Prevention. (2011, April 16). *2010 National Health Interview Survey questionnaire*. Retrieved from ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Survey_Questionnaires/NHIS/2010/English/qadult.pdf
- Centers for Disease Control and Prevention. (2012). *High Impact HIV/AIDS Prevention Project (HIP) is CDC's approach to reducing HIV infections in the United States*. Retrieved from <http://www.effectiveinterventions.org/en/HighImpactPrevention/Interventions.aspx>
- Chesney, M. A., Chambers, D. B., Ickovics, J. R., Gifford, A. L., Neidig, J., Zwickl, B., & Wu, A. W. (2000). Self-reported adherence to antiretroviral medications among participants in HIV clinical trials: The AACTG Adherence Instruments. *AIDS Care*, 12(3), 255-266.
- Chicago Coalition for the Homeless. (2013, July 25). *Sweet Home Chicago allies speak up on city's new 5-year housing plan*. Retrieved from <http://www.chicagohomeless.org/sweet-home-chicago-allies-speak-up-on-citys-new-5-year-housing-plan/>
- Chicago Department of Planning and Development. (2013). *Bouncing back: Chicago five-year housing plan 2014-2018* [draft]. Retrieved from http://www.cityofchicago.org/content/dam/city/depts/dcd/general/housing/Chicago_Housing_Plan_Draft_For_Public_Review_Web.pdf
- Chicago Department of Public Health. (2011). *STI/HIV surveillance report: Fall 2011*. Retrieved from http://www.cityofchicago.org/content/dam/city/depts/cdph/infectious_disease/STI_HIV_AIDS/2011HIVSTISurveillanceReport.pdf
- City of Chicago. (2004, June 1). *Hotel accommodations tax ruling*. Retrieved from http://www.cityofchicago.org/dam/city/depts/rev/supp_info/TaxRulingsandRegulations/HotelTaxRuling2.pdf
- Coady, M., Latka, M., Thiede, H., Golub, E., Ouellet, L., Hudson, S., . . . Garfein, R. (2007). Housing status and associated differences in HIV risk behaviors among young injection drug users (IDUs). *AIDS and Behavior*, 11(6), 854-863.
- Commission on the Social Determinants of Health of the World Health Organization. (2008). *Closing the gap in a generation: Health equality through action on the social determinants of health*. Retrieved from http://whqlibdoc.who.int/publications/2008/9789241563703_eng.pdf

- Compton, W., Normand, J., & Lambert, E. (2009). Sexual Acquisition and Transmission of HIV Cooperative Agreement Program (SATHCAP), July 2009: Introduction. *Journal of Urban Health*, 86(1), S1-S4.
- Conrad, M. (2012, September 6). New small-space apartments in Uptown. *Time Out Chicago*. Retrieved from <http://timeoutchicago.com/shopping-style/home-design/15641656/new-small-space-apartments-in-uptown>
- Cornell T. A., Kuyper, L. M., Shoveller, J., Hogg, R. S., Li, K., Spittal, P. M., . . . Wood, E. (2006). Unstable housing, associated risk behaviour, and increased risk for HIV infection among injection drug users. *Health & Place*, 12(1), 79-85.
- Cunningham, C., Sohler, N., Berg, K., Shapiro, S., & Heller, D. (2006). Type of substance use and access to HIV-related health care. *AIDS Patient Care and STDs*, 20(6), 399-407.
- Cunningham, C. O., Sohler, N. L., McCoy, K., Heller, D., & Selwyn, P. A. (2005). Health care access and utilization patterns in unstably housed HIV-infected individuals in New York City. *AIDS Patient Care and STDs*, 19(10), 690-695.
- Darke, S. (1998). Self-report among injecting drug users: A review. *Drug and Alcohol Dependence*, 51(3), 253-263.
- Davey-Rothwell, M. A., Latimore, A., Hulbert, A., & Latkin, C. (2011). Sexual networks and housing stability. *Journal of Urban Health*, 88(4), 759-766.
- Davey-Rothwell, M., Linas, B., S., & Latkin, C., A. (2012). Sources of personal income and HIV risk among sexually active women. *AIDS Education & Prevention*, 24(5), 422-430.
- Denning, P., & DiNenno, E. (2010). *Communities in crisis: Is there a generalized HIV epidemic in impoverished urban areas of the United States?* Retrieved from Centers for Disease Control and Prevention website: http://www.cdc.gov/hiv/pdf/statistics_poverty_poster.pdf
- Des Jarlais, D., Braine, N., & Friedmann, P. (2007). Unstable housing as a factor for increased injection risk behavior at US syringe exchange programs. *AIDS and Behavior*, 11(Supplement 2), S78-S84.
- Dévieux, J. G., Malow, R., Lerner, B. G., Dyer, J. G., Baptista, L., Lucenko, B., & Kalichman, S. C. (2007). Triple jeopardy for HIV: Substance using severely mentally ill adults. *Journal of Prevention & Intervention in the Community*, 33(1), 5-18.
- Dickson-Gomez, J., Hilario, H., Convey, M., Corbett, A. M., Weeks, M., & Martinez, M. (2009). The relationship between housing status and HIV risk among active drug users: A qualitative analysis. *Substance Use & Misuse*, 44(2), 139-162.

- Dickson-Gomez, J., McAuliffe, T., Convey, M., Weeks, M., & Owczarzak, J. (2011). Access to housing subsidies, housing status, drug use and HIV risk among low-income U.S. urban residents. *Substance Abuse Treatment Prevention and Policy*, 6(31), 1-12.
- Dietz, T. (2007). Predictors of reported current and lifetime substance abuse problems among a national sample of U.S. homeless. *Substance Use & Misuse*, 42(11), 1745-1766.
- Do, D. P., Finch, B. K., Basurto-Davila, R., Bird, C., Escarce, J., & Lurie, N. (2008). Does place explain racial health disparities? Quantifying the contribution of residential context to the Black/White health gap in the United States. *Social Science & Medicine*, 67(8), 1258-1268.
- Duff, P., Deering, K., Gibson, K., Tyndall, M., & Shannon, K. (2011). Homelessness among a cohort of women in street-based sex work: the need for safer environment interventions. *BMC Public Health*, 11(643), 1-7.
- Egan, J. E., Frye, V., Kurtz, S. P., Latkin, C., Chen, M., Tobin, K. . . . Koblin, B. A. (2011). Migration, neighborhoods, and networks: Approaches to understanding how urban environmental conditions affect syndemic adverse health outcomes among gay, bisexual, and other men who have sex with men. *AIDS and Behavior*, 15(Supplement 1), S35-S50.
- Elifson, K. W., Sterk, C. E., & Theall, K. P. (2007). Safe living: The impact of unstable housing conditions on HIV risk reduction among female drug users. *AIDS and Behavior*, 11(Supplement 2), S45-S55.
- Ennett, S., Federman, E., Bailey, S., Ringwalt, C., & Hubbard, M. (1999). HIV-risk behaviors associated with homelessness characteristics in youth. *Journal of Adolescent Health*, 25(5), 344-353.
- Evans, L., & Strathdee, S. A. (2006). A roof is not enough: Unstable housing, vulnerability to HIV infection and the plight of the SRO. *International Journal of Drug Policy*, 17(2), 115-117.
- Eyrich-Garg, K. M., O'Leary, C. C., & Cottler, L. B. (2008). Subjective versus objective definitions of homelessness: Are there differences in risk factors among heavy-drinking women? *Gender Issues*, 25, 173-192.
- Ferguson, C. J. (2009). An effect size primer: A guide for clinicians and researchers. *Professional Psychology: Research and Practice*, 40(5), 532-538.
- Fischer, L., & Schwieterman, J. P. (2008, July 1). *A Kaleidoscope of culture: Measuring the diversity of Chicago's neighborhoods*. Retrieved from DePaul University School of Public Service Policy Study website: <http://condor.depaul.edu/~chaddick/Chaddick%20Policy%20Study%20-%20Neighborhood%20Diversity%20II%20new2.pdf>
- Fishbein, M. (1990). AIDS and behavior change: An analysis based on the theory of reasoned action. *Interamerican Journal of Psychology*, 24, 37-56.

- Fogg, C. J., & Mawn, B. (2010). HIV screening: Beliefs and intentions of the homeless. *Journal of the Association of Nurses in AIDS Care*, 21, 395-407.
- Forsyth, K., & Kviz, F. J. (2006). Survey research design. In G. Kielhofner (Ed.), *Research in occupational therapy: Methods of inquiry for enhancing practice* (pp. 91-109). Philadelphia, PA: F. A. Davis Company.
- Fraser, M. W., Richman, J. M., Galinsky, M. J., & Day, S. H. (2009). *Intervention research: Developing social programs*. New York, NY: Oxford University Press.
- Freudenberg, N. (2001). Jails, prisons, and the health of urban populations: A review of the impact of the correctional system on community health. *Journal of Urban Health*, 78(2), 214-235.
- Friedman, M. S., Marshal, M. P., Stall, R., Kidder, D. P., Henny, K. D., Courtenay-Quirk, C., . . . Holtgrave, D. R. (2009). Associations between substance use, sexual risk taking and HIV treatment adherence among homeless people living with HIV. *AIDS Care*, 21(6), 692-700.
- Fullilove, M. T. (2003). Neighborhoods and infectious diseases. In I. Kawachi & L. F. Berkman (Eds.), *Neighborhoods and health* (pp. 211-222). New York, NY: Oxford University Press.
- Fullilove, R. E. (2011). Mass incarceration in the United States and HIV/AIDS: Cause and effect? *Ohio State Journal of Criminal Law*, 9(1), 353-361.
- Galea, S., Ahern, J., & Vlahov, D. (2003). Contextual determinants of drug use risk behavior: A theoretic framework. *Journal of Urban Health*, 80(3), 50-58.
- Galea, S., & Vlahov, D. (2002). Social determinants and the health of drug users: Socioeconomic status, homelessness, and incarceration. *Public Health Reports*, 117, S135-S145.
- German, D., Davey, M., & Latkin, C. (2007). Residential transience and HIV risk behaviors among injection drug users. *AIDS and Behavior*, 11(Supplement 2), S21-S30.
- Gibson, D. R., Hudes, E. S., & Donovan, D. (1999). Estimating and correcting for response bias in self-reported HIV risk behavior. *The Journal of Sex Research*, 36(1), 96-101.
- Greenfield, L., Bigelow, G. E., & Brooner, R. K. (1995). Validity of intravenous drug abusers' self-reported changes in HIV high-risk drug use behaviors. *Drug and Alcohol Dependence*, 39(2), 91-98.
- Grieb, S. M. D., Davey-Rothwell, M., & Latkin, C. A. (2013). Housing stability, residential transience, and HIV testing among low-income urban African Americans. *AIDS Education & Prevention*, 25(5), 430-444.
- Groth, P. (1994). *Living downtown: The history of residential hotels in the United States*. Berkeley, CA: University of California Press.

- Gurstein, P., & Small, D. (2005). From housing to home: Reflexive management for those deemed hard to house. *Housing Studies*, 20(5), 717-735.
- Halkitis, P. N., Kapadia, F., Siconolfi, D. E., Moeller, R. W., Figueroa, R. P., Barton, S. C., & Blachman-Forshay, J. (2013). Individual, psychosocial, and social correlates of unprotected anal intercourse in a new generation of young men who have sex with men in New York City. *American Journal of Public Health*, 103(5), 889-895.
- Hannon, L., & Cuddy, M. C. (2006). Neighborhood ecology and drug dependence mortality: An analysis of New York City census tracts. *The American Journal of Drug and Alcohol Abuse*, 32, 453-463.
- Hawk, M., & Davis, D. (2012). The effects of a harm reduction housing program on the viral loads of homeless individuals living with HIV/AIDS. *AIDS Care*, 24(5), 577-582.
- Himelhoch, S., Goldberg, R., Calmes, C., Medoff, D., Slade, , Eric, Dixon, L., . . . Rosenberg, S. (2011). Screening for and prevalence of HIV and hepatitis C among an outpatient urban sample of people with serious mental illness and co-occurring substance abuse. *Journal of Community Psychology*, 39(2), 231-239.
- Hoch, C., & Slayton, R. A. (1989). *New homeless and old: Community and the Skid Row hotel*. Philadelphia, PA: Temple University Press.
- Hodgson, R. J., John, B., Abbasi, T., Hodgson, R. C., Waller, S., Thom, B., & Newcombe, R. G. (2003). Fast screening for alcohol misuse. *Addictive Behaviors*, 28, 1453-1463.
- Holtgrave, D. R., Briddell, K., Little, E., Bendixen, A. V., Hooper, M., Kidder, D. P., . . . Aidala, A. (2007). Cost and threshold analysis of housing as an HIV prevention intervention. *AIDS and Behavior*, 11(Supplement 2), S162-S166.
- Hudson, A. L., Nyamathi, A., Bhattacharya, D., Marlow, E., Shoptaw, S., Marfisee, M., & Leake, B. (2011). Impact of prison status on HIV-related risk behaviors. *AIDS and Behavior*, 15, 340-346.
- Hulchanski, J. D. (1995). The concept of housing affordability: Six contemporary uses of the housing expenditure-to-income ratio. *Housing Studies*, 10(4), 471-491.
- Hwang, S. W., Aubry, T., Palepu, A., Farrell, S., Nisenbaum, R., Hubley, A. M., . . . Chambers, C. (2011). The health and housing in transition study: A longitudinal study of the health of homeless and vulnerably housed adults in three Canadian cities. *International Journal of Public Health*, 56,(6), 609-623.
- Jenness, S. M., Kobrak, P., Wendel, T., Neaigus, A., Murrill, C. S., & Hagan, H. (2011). Patterns of exchange sex and HIV infection in high-risk heterosexual men and women. *Journal of Urban Health*, 88(2), 329-341.

- Johnson, M. E., Fisher, D. G., Montoya, I., Booth, R., Rhodes, F., Andersen, M., . . . Williams, M. (2000). Reliability and validity of not-in-treatment drug users' follow-up self-reports. *AIDS and Behavior*, 4(4), 373-380.
- Johnson, T. P., & Barrett, M. E. (1995). Substance use and treatment needs among homeless persons in Cook County, Illinois. *The International Journal of the Addictions*, 30(5), 557-585.
- Johnson, T. P., & Parsons, J. A. (1994). Interviewer effects on self-reported substance use among homeless persons. *Addictive Behaviors*, 19(1), 83-93.
- Johnson, Y. M. (1999). Indirect work: Social work's uncelebrated strength. *Social Work*, 44(4), 323-334.
- Joint Center for Housing Studies of Harvard University. (2013). *America's rental housing: Evolving markets and needs*. Retrieved from <http://www.jchs.harvard.edu/americas-rental-housing>
- Kawachi, I., & Berkman, L. F. (2003). Introduction. In I. Kawachi & L. F. Berkman (Eds.), *Neighborhoods and health* (pp. 1-19). New York, NY: Oxford University Press.
- Kennedy, D. P., Wenzel, S. L., Brown, R., Tucker, J. S., & Golinelli, D. (2013). Unprotected sex among heterosexually active homeless men: Results from a multi-level dyadic analysis. *AIDS and Behavior*, 17(5), 1655-1667.
- Kipke, M. D., Weiss, G., & Wong, C. F. (2007). Residential status as a risk factor for drug use and HIV risk among young men who have sex with men. *AIDS and Behavior*, 11(Supplement 2), S56-S69.
- Kirkpatrick, S. I., & Tarasuk, V. (2011). Housing circumstances are associated with household food access among low-income urban families. *Journal of Urban Health*, 88(2), 284-296.
- Klinenberg, E. (2012). *Going solo: The extraordinary rise and surprising appeal of living alone*. New York, NY: Penguin Books.
- Kohli, R., Klein, R., Schoenbaum, E., Anastos, K., Minkoff, H., & Sacks, H. (2006). Aging and HIV infection. *Journal of Urban Health*, 83(1), 31-42.
- Krieger, N. (1994). Epidemiology and the web of causation: Has anyone seen the spider? *Social Science & Medicine*, 39(7), 887-903.
- Kunichoff, Y. (2013, December 27). A shifting SRO scene: When the housing of last resort disappears. *The Chicago Reporter*. Retrieved from <http://www.chicagoreporter.com/shifting-sro-scene-when-housing-last-resort-disappears>

- Latkin, C. A., & Knowlton, A. R. (2005). Micro-social structural approaches to HIV prevention: A social ecological perspective. *AIDS Care*, 17, 102-113.
- Lazarus, L., Chettiar, J., Deering, K., Nabess, R., & Shannon, K. (2011). Risky health environments: Women sex workers' struggles to find safe, secure and non-exploitative housing in Canada's poorest postal code. *Social Science & Medicine*, 73(11), 1600-1607.
- Levitt, A. J., Mitchell, K., Pareti, L., DeGenova, J., Heller, A., Hannigan, A., & Gholston, J. (2013). Randomized trial of intensive housing placement and community transition services for episodic and recidivist homeless families. *American Journal of Public Health*, 103(S2), S349-S354.
- Lewinson, T. (2010). Residents' coping strategies in an extended-stay hotel home. *Journal of Ethnographic & Qualitative Research*, 4, 180-196.
- Lichtenstein, B. (2009). Drugs, incarceration, and HIV/AIDS among African American men: A critical literature review and call to action. *American Journal of Men's Health*, 3(3), 252-264.
- Link, B. G., & Phelan, J. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior*, 35, 80-94.
- Macintyre, S., & Ellaway, A. (2003). Neighborhoods and health: An overview. In I. Kawachi & L. F. Berkman (Eds.), *Neighborhoods and health* (pp. 20-42). New York, NY: Oxford University Press.
- Mackesy-Amiti, M. E., Boodram, B., Williams, C., Ouellet, L. J., & Broz, D. (2013). Sexual risk behavior associated with transition to injection among young non-injecting heroin users. *AIDS and Behavior*, 17(7), 2459-2466.
- Mackesy-Amiti, M. E., Ouellet, L. J., Golub, E. T., Hudson, S., Hagan, H., & Garfein, R. S. (2011). Predictors and correlates of reduced frequency or cessation of injection drug use during a randomized HIV prevention intervention trial. *Addiction*, 106(3), 601-608.
- Marks, G., Crepaz, N., Senterfitt, W., & Janssen, R. S. (2005). Meta-analysis of high-risk sexual behaviors in persons aware and unaware they are infected with HIV in the United States. *Journal of Acquired Immune Deficiency Syndromes*, 39(4), 446-453.
- Marshall, B. D. L., Kerr, T., Shoveller, J. A., Patterson, T. L., Buxton, J. A., & Wood, E. (2009). Homelessness and unstable housing associated with an increased risk of HIV and STI transmission among street-involved youth. *Health & Place*, 15(3), 783-790.
- Mattaini, M. A. (2008). Ecosystems theory. In B. A. Thyer (Ed.), *Comprehensive handbook on social work and social welfare* (Vol. 2, pp. 355-377). Hoboken, NJ: Wiley.

- Max, A. (1998). *The last resort: Scenes from a transient hotel*. San Francisco, CA: Chronicle Books.
- McLellan, A. T., Kushner, H., Metzger, D., Peters, R., Smith, I., Grissom, G., . . . Argeriou, M. (1993). The fifth edition of the Addiction Severity Index. *Journal of Substance Abuse Treatment*, 9, 199–213.
- Mehrabadi, A., Craib, K. J. P., Patterson, K., Adam, W., Moniruzzaman, A., Ward-Burkitt, B., . . . Spittal, P. M. (2008). The Cedar Project: A comparison of HIV-related vulnerabilities amongst young aboriginal women surviving drug use and sex work in two Canadian cities. *International Journal of Drug Policy*, 19(2), 159-168.
- Merrifield, A. (2002). *Dialectical urbanism: Social struggles in the capitalist city*. New York, NY: Monthly Review Press.
- Metraux, S., Metzger, D. S., & Culhane, D. P. (2004). Homelessness and HIV risk behaviors among injection drug users. *Journal of Urban Health*, 81(4), 618-629.
- Moore, L. D., & Elkavich, A. (2008). Who's using and who's doing time: Incarceration, the war on drugs, and public health. *American Journal of Public Health*, 98(5), 782-786.
- National Coalition for Homeless. (2009, September). *Federal housing assistance programs*. Retrieved from <http://www.nationalhomeless.org/factsheets/federal.html>
- National Institute on Drug Abuse. (1991). *Risk Behavior Assessment*. Rockville, MD: Author.
- National Prevention Council. (2011). *National Prevention Strategy*. Retrieved from the U.S. Department of Health and Human Services Office of the Surgeon General web site: <http://www.surgeongeneral.gov/initiatives/prevention/strategy/report.pdf>
- Neaigus, A., Reilly, K. H., Jenness, S. M., Hagan, H., Wendel, T., & Gelpi-Acosta, C. (2013). Dual HIV risk: Receptive syringe sharing and unprotected sex among HIV-negative injection drug users in New York City. *AIDS and Behavior*, 17(7), 2501-2509.
- Neblett, R. C., Davey-Rothwell, M., Chander, G., & Latkin, C. A. (2011). Social network characteristics and HIV sexual risk behavior among urban African American women. *Journal of Urban Health*, 88(1), 54-65.
- Needle, R., Fisher, D. G., Weatherby, N., Chitwood, D., Brown, B., Cesari, H. . . . Braunstein, M. (1995). Reliability of self-reported HIV risk behaviors of drug users. *Psychology of Addictive Behaviors*, 9(4), 242-250.
- New Hampshire-Dartmouth Psychiatric Research Center. (1995). *Residential Follow-Back Calendar*. Lebanon, NH: Author.

- New York City Rent Guidelines Board. (2010, June 24). *Explanatory statement – Hotel Order #40*. Retrieved from <http://www.housingnyc.com/downloads/guidelines/orders/HotelES40.pdf>
- North, C. S., Eyrych, K. M., Pollio, D. E., Foster, D., Cottler, L., & Spitznagel, E. (2004). The homeless supplement to the Diagnostic Interview Schedule: Test-retest analyses. *International Journal of Methods in Psychiatric Research*, 13(3), 184-191.
- Ober, A. J., Iguchi, M. Y., Weiss, R. E., Gorbach, P. M., Heimer, R., Ouellet, L. J. . . . Zule, W. A. (2011). The relative role of perceived partner risks in promoting condom use in a three-city sample of high-risk, low-income women. *AIDS and Behavior*, 15(7), 1347-1358.
- Ompad, D. C., Nandi, V., Cerda, M., Crawford, N., Galea, S., & Vlahov, D. (2012). Beyond income: Material resources among drug users in economically-disadvantaged New York City neighborhoods. *Drug and Alcohol Dependence*, 120, 127-134.
- Orme, J. G., & Combs-Orme, T. (2009). *Multiple regression with discrete dependent variables*. New York, NY: Oxford University Press.
- Oster, A. M., Wiegand, R. E., Sionean, C., Miles, I. J., Thomas, P. E., Melendez-Morales, L., . . . Millett, G. A. (2011). Understanding disparities in HIV infection between black and white MSM in the United States. *AIDS*, 25(8), 1103-1112.
- Palepu, A., Marshall, B. D. L., Lai, C., Wood, E., & Kerr, T. (2010). Addiction treatment and stable housing among a cohort of injection drug users. *PloS One*, 5(7), e11697.
- Pease, B. (2003). Rethinking the relationship between the self and society. In J. Allan, B. Pease, & L. Briskman (Eds.), *Critical social work: An introduction to theories and practices* (pp. 187-201). Crows Nest, Australia: Allen & Unwin.
- Presser, S., Couper, M. P., Lessler, J. T., Martin, E., Martin, J., Rothgeb, J. M., & Singer, E. (2004). Methods for testing and evaluating survey questions. *Public Opinion Quarterly*, 68(1), 109-130.
- Rachlis, B. S., Wood, E., Zhang, R., Montaner, J. S. G., & Kerr, T. (2009). High rates of homelessness among a cohort of street-involved youth. *Health & Place*, 15(1), 10-17.
- Reyes, J. C., Robles, R. R., Colón, H. M., Matos, T. D., Finlinson, H. A., Marrero, C. A., & Shepard, E. W. (2005). Homelessness and HIV risk behaviors among drug injectors in Puerto Rico. *Journal of Urban Health*, 82(3), 446-455.
- Rhodes, T. (2002). The ‘risk environment’: A framework for understanding and reducing drug-related harm. *International Journal of Drug Policy*, 13(2), 85-94.

- Rhodes T., Singer M., Bourgois, P., Friedman, S. R., & Strathdee, S. A. (2005). The social structural production of HIV risk among injecting drug users. *Social Science & Medicine*, 61(5), 1026-1044.
- Rice, E., Barman-Adhikari, A., Milburn, N. G., & Monro, W., MSW. (2012). Position-specific HIV risk in a large network of homeless youths. *American Journal of Public Health*, 102(1), 141-147.
- Rich, J. D., Dickinson, B. P., Macalino, G., Flanigan, T. P., Towe, C. W., Spaulding, A., & Vlahov, D. (1999). Prevalence and incidence of HIV among incarcerated and reincarcerated women in Rhode Island. *Journal of Acquired Immune Deficiency Syndromes*, 22(2), 161-166.
- Riley E. D., Moss, A. R., Clark, R. A., Monk, S. L., & Bangsberg, D. R. (2005). Cash benefits are associated with lower risk behavior among the homeless and marginally housed in San Francisco. *Journal of Urban Health*, 82(1), 142-150.
- Riley, E. D., Weiser, S. D., Sorensen, J. L., Dilworth, S., Cohen, J., & Neilands, T. B. (2007). Housing patterns and correlates of homelessness differ by gender among individuals using San Francisco free food programs. *Journal of Urban Health*, 84(3), 415-422.
- Robertson, M. J., Clark, R. A., Charlebois, E. D., Tulskey, J., Long, H., Bangsberg, D. R., & Moss, A. R. (2004). HIV seroprevalence among homeless and marginally housed adults in San Francisco. *American Journal of Public Health*, 94(7), 1207-1217.
- Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1994). The health belief model and HIV risk behavior change. In J. Peterson & R. DiClemente (Eds.), *Preventing AIDS: Theories and methods of behavioral interventions* (pp. 5-24). New York, NY: Plenum Press.
- Roy, E., Robert, M., Vaillancourt, E., Boivin, J., Vandermeersch, J., & Martin, I. (2011). Residential trajectory and HIV high-risk behaviors among Montreal street youth--A reciprocal relationship. *Journal of Urban Health*, 88(4), 767-778.
- Royse, D., Leukefeld, C., Logan, T. K., Dennis, M., Wechsberg, W., Hoffman, J., . . . Inciardi, J. (2000). Homelessness and gender in out-of-treatment drug users. *American Journal of Drug and Alcohol Abuse*, 26(2), 283-296.
- Rudolph, A. E., Linton, S., Dyer, T. P., & Latkin, C. (2013). Individual, network, and neighborhood correlates of exchange sex among female non-injection drug users in Baltimore, MD (2005-2007). *AIDS and Behavior*, 17(2), 598-611.
- Salazar, L., Crosby, R., Holtgrave, D., Head, S., Hadsock, B., Todd, J., & Shouse, R. (2007). Homelessness and HIV-associated risk behavior among African American men who inject drugs and reside in the urban south of the United States. *AIDS and Behavior*, 11(Supplement 2), S70-S77.

- Senn, T. E., & Carey, M. P. (2009). HIV testing among individuals with severe mental illness: Review, suggestions for research, and clinical implications. *Psychological Medicine*, 39(3), 355-363.
- Shah, N. G., Galai, N., Celentano, D. D., Vlahov, D., & Strathdee, S. A. (2006). Longitudinal predictors of injection cessation and subsequent relapse among a cohort of injection drug users in Baltimore, MD, 1988-2000. *Drug and Alcohol Dependence*, 83(2), 147-156.
- Shannon, K., Ishida, T., Lai, C., & Tyndall, M. W. (2006). The impact of unregulated single room occupancy hotels on the health status of illicit drug users in Vancouver. *International Journal of Drug Policy*, 17(2), 107-114.
- Shubert, V., & Bernstine, N. (2007). Moving from fact to policy: Housing is HIV prevention and health care. *AIDS and Behavior*, 11(Supplement 2), S172-S181.
- Shuper, P. A., Neuman, M., Kanteres, F., Joharchi, N., Rehm, J., & Baliunas, D. (2010). Causal considerations on alcohol and HIV/AIDS — A systematic review. *Alcohol & Alcoholism*, 45(2), 159-166.
- Singer, M. C., Erickson, P. I., Badiane, L., Diaz, R., Ortiz, D., Abraham, T., & Nicolaysen, A. M. (2006). Syndemics, sex and the city: Understanding sexually transmitted diseases in social and cultural context. *Social Science & Medicine*, 63(8), 2010-2021.
- Single Room Housing Assistance Corporation. (n.d.). *Experience with homelessness*. Retrieved from http://srhac.org/experience_with_homelessness.htm
- Smereck, G. A. D., & Hockman, E. M. (1998). Prevalence of HIV infection and HIV risk behaviors associated with living place: On-the-street homeless drug users as a special target population for public health intervention. *American Journal of Drug and Alcohol Abuse*, 24(2), 299-319.
- Sohler, N., Li, X., & Cunningham, C. (2007). Perceived discrimination among severely disadvantaged people with HIV infection. *Public Health Reports*, 122(3), 347-355.
- Solorio, M. R., Rosenthal, D., Milburn, N. G., Weiss, R. E., Batterham, P. J., Gandara, M., & Rotheram-Borus, M. J. (2008). Predictors of sexual risk behaviors among newly homeless youth: A longitudinal study. *Journal of Adolescent Health*, 42(4), 401-409.
- Somlai, A. M., Kelly, J. A., Wagstaff, D. A., & Whitson, D. P. (1998). Patterns, predictors, and situational contexts of HIV risk behaviors among homeless men and women. *Social Work*, 43(1), 7-20.
- StataCorp. (2009). *Stata statistical software: Release 11*. College Station, TX: StataCorp LP.
- Stein, J., & Nyamathi, A. (2004). Correlates of hepatitis C virus infection in homeless men: A latent variable approach. *Drug and Alcohol Dependence*, 75(1), 89-95.

- Stein, J., Nyamathi, A., & Zane, J. (2009). Situational, psychosocial, and physical health-related correlates of HIV/AIDS risk behaviors in homeless men. *American Journal of Men's Health*, 3(1), 25-35.
- Substance Abuse and Mental Health Services Administration. (2009, November). *2010 National Survey on Drug Use and Health: CAI specifications for programming English version*. Retrieved from <http://www.oas.samhsa.gov/nsduh/2k10MRB/2k10Q.pdf>
- Surratt, H. L., Kurtz, S. P., Chen, M., & Mooss, A. (2012). HIV risk among female sex workers in Miami: The impact of violent victimization and untreated mental illness. *AIDS Care*, 24(5), 553-561.
- Survey Research Laboratory at the University of Illinois at Chicago. (2000). *Client survey for study #866: Needs assessment of the homeless in metropolitan Chicago*. Chicago, IL: Author.
- Takahashi, L. M. (1998). *Homelessness, AIDS, and stigmatization: The NIMBY syndrome in the United States at the end of the twentieth century*. New York, NY: Oxford University Press.
- Tjur, T. (2009). Coefficients of determination in logistic regression models—a new proposal: The coefficient of discrimination. *The American Statistician*, 63(4), 366-372.
- Trickett, E. J. (2005). Community interventions and HIV/AIDS: Affecting the community context. In E. J. Trickett & W. Pequegnat (Eds.), *Community interventions and AIDS* (pp. 3-27). New York, NY: Oxford University Press.
- Tsemberis, S., McHugo, G., Williams, V., Hanrahan, P., & Stefancic, A. (2007). Measuring homelessness and residential stability: The Residential Time-Line Follow-Back Inventory. *Journal of Community Psychology*, 35(1), 29-42.
- Ungar, M. (2002). A deeper, more social ecological social work practice. *Social Service Review*, 76(3), 480-497.
- University of California at Los Angeles Institute for Digital Research and Education. (2013). *Lesson 3: Logistic regression diagnostics*. Retrieved from <http://www.ats.ucla.edu/stat/stata/webbooks/logistic/chapter3/statalog3.htm>
- University of California at Los Angeles Institute for Digital Research and Education. (2013). *Stata data analysis examples: Zero-inflated negative binomial regression*. Retrieved from <http://www.ats.ucla.edu/stat/stata/dae/zinb.htm>
- Uptown Update. (2013, December 11). *Wilson Men's Club residents getting case manager, common area, kitchen*. Retrieved from <http://www.uptownupdate.com/2013/12/wilson-mens-club-residents-getting-case.html>

- U.S. Department of Housing and Urban Development. (n.d.). *Single room occupancy program*. Retrieved from http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/homeless/programs/sro
- U.S. Department of Housing and Urban Development. (2007). Defining chronic homelessness: A technical guide for HUD programs. Retrieved from <http://www.hudhre.info/documents/DefiningChronicHomeless.pdf>
- U.S. Department of Housing and Urban Development. (2009, July 30). *Part 5 definition*. Retrieved from <http://www.hud.gov/offices/cpd/affordablehousing/training/web/calculator/definitions/part5.cfm>
- U.S. Department of Housing and Urban Development. (2011, December 5). Homeless emergency assistance and rapid transition to housing: Defining “homelessness”, 24 CFR pt. 91, 582, 583, 76(233) Fed. Reg., 75994-76019.
- U.S. Department of Housing and Urban Development. (2013, November 6). *The final FY 2014 Chicago-Joliet-Naperville, IL HUD metro FMR area FMRs for all bedroom sizes*. Retrieved from http://www.huduser.org/portal/datasets/fmr/fmrs/FY2014_code/2014summary.odn
- Valdez, A., & Cepeda, A. (2008). The relationship of ecological containment and heroin practices. In Y. F. Thomas, D. Richardson, & I. Cheung (Eds.), *Geography and drug addiction* (pp. 159-173). Dordrecht, Netherlands: Springer.
- Vittinghoff, E., Douglas, J., Judson, F., McKirnan, D., MacQueen, K., & Buchbinder, S. P. (1999). Per-contact risk of human immunodeficiency virus transmission between male sexual partners. *American Journal of Epidemiology*, 150(3), 306-311.
- Vogenthaler, N. S., Kushel, M. B., Hadley, C., Frongillo, E. A., Riley, E. D., Bangsberg, D. R., & Weiser, S. D. (2013). Food insecurity and risky sexual behaviors among homeless and marginally housed HIV-infected individuals in San Francisco. *AIDS and Behavior*, 17(5), 1688-1693.
- Yousef, O. (2013, June 21). *Inside room 317: Counting down the last days of the Chateau Hotel* [radio program]. Retrieved from <http://www.wbez.org/news/inside-room-317-counting-down-last-days-chateau-hotel-107793>
- Wagner, K. D., Simon-Freeman, R., & Bluthenthal, R. N. (2013). The association between law enforcement encounters and syringe sharing among IDUs on Skid Row: A mixed methods analysis. *AIDS and Behavior*, 17(8), 2637-2643.
- Wallace R. (1988). A synergism of plagues: “Planned shrinkage,” contagious housing destruction, and AIDS in the Bronx. *Environmental Research*, 47(1), 1-33.

- Wang, M., Collins, C., Kohler, C., DiClemente, R., & Wingood, G. (2000). Drug use and HIV risk-related sex behaviors: A street outreach study of black adults. *Southern Medical Journal*, 93(2), 186-190.
- Wang, E. A., Zhu, G. A., Evans, L., Carroll-Scott, A., Desai, R., & Fiellin, L. E. (2013). A pilot study examining food insecurity and HIV risk behaviors among individuals recently released from prison. *AIDS Education and Prevention*, 25(2), 112-123.
- Watson, C. (1992, November 5). Men in cages. *Chicago Reader*. Retrieved from <http://www.chicagoreader.com/chicago/men-in-cages/Content?oid=880810>
- Weatherby, N. L., Needle, R., Cesari, H., Booth, R., McCoy, C. B., Waters, J. K. . . . Chitwood, D. D. (1994). Validity of self-reported drug use among injection drug users and crack cocaine users recruited through street outreach. *Evaluation and Program Planning*, 17(4), 347-355.
- Wechsberg, W.M., Lam, W. K., Zule, W., Hall, G., Middlesteadt, R., & Edwards, J. (2003). Violence, homelessness, and HIV risk among crack-using African-American women. *Substance Use & Misuse*, 38(3-6), 669-700.
- Weinhardt, L. S., Forsyth, A. D., Carey, M. P., Jaworski, B. C., & Durant, L. E. (1998). Reliability and validity of self-report measures of HIV-related sexual behavior: Progress since 1990 and recommendations for research and practice. *Archives of Sexual Behavior*, 27(2), 155-180.
- Weir, B. W., Bard, R. S., O'Brien, K., Casciato, C. J., & Stark, M. J. (2007). Uncovering patterns of HIV risk through multiple housing measures. *AIDS and Behavior*, 11(Supplement 2), S31-S44.
- Weiser, S. D., Neilands, T. B., Comfort, M. L., Dilworth, S. E., Cohen, J., Tulskey, J. P., & Riley, E. D. (2009). Gender-specific correlates of incarceration among marginally housed individuals in San Francisco. *American Journal of Public Health*, 99(8), 1459-1463.
- Wenzel, S. L., Tucker, J. S., Elliott, M. N., & Hambarsoomians, K. (2007). Sexual risk among impoverished women: Understanding the role of housing status. *AIDS and Behavior*, 11(Supplement 2), S9-S20.
- White, W. L., & Sanders, M. (2008). Recovery management and people of color: Redesigning addiction treatment for historically disempowered communities. *Alcoholism Treatment Quarterly*, 26(3), 365-395.
- Williams, C. T., & Latkin, C. A. (2007). Neighborhood socioeconomic status, personal network attributes, and use of heroin and cocaine. *American Journal of Preventive Medicine*, 32(6S), S203-S210.

- Wolitski, R. J., Kidder, D. P., Pals, S. L., Royal, S., Aidala, A., Stall R, . . . Courtenay-Quirk, C. (2010). Randomized trial of the effects of housing assistance on the health and risk behaviors of homeless and unstably housed people living with HIV. *AIDS and Behavior*, *14*(3), 493-503.
- Zayas, L. H., Cabassa, L. J., & Perez, M. C. (2005). Capacity-to-consent in psychiatric research: Development and preliminary testing of a screening tool. *Research on Social Work Practice*, *15*(6), 545-556.
- Zelenev, A., Marcus, R., Kopelev, A., Cruzado-Quinones, J., Spaulding, A., Desabrais, M., . . . Altice, F. L. (2013). Patterns of homelessness and implications for HIV health after release from jail. *AIDS and Behavior*, *17*(Supplement 2), S181-S194.
- Zlotnick, C., & Zerger, S. (2009). Survey findings on characteristics and health status of clients treated by the federally funded (US) health care for the homeless programs. *Health & Social Care in the Community*, *17*(1), 18-26.

VITA

ELIZABETH A. BOWEN

EDUCATION

- | | |
|------|---|
| 2014 | Ph.D., Jane Addams College of Social Work, University of Illinois at Chicago |
| 2004 | A.M., Clinical Social Work, School of Social Service Administration, University of Chicago |
| 2002 | B. Phil, Psychology and B.A., Nonfiction Writing, summa cum laude, University of Pittsburgh |

AREAS OF SPECIALIZATION

Homelessness, HIV/AIDS, and substance abuse as intersecting epidemics; place-based health disparities; social determinants of health and risk behaviors; housing and community development policy

PUBLICATIONS

Peer-Reviewed Journal Articles

- Bowen, E. A.** (2013). AIDS at 30: Implications for social work education. *Journal of Social Work Education, 49*, 265-276.
- Bowen, E. A., Mattaini, M. A., & De Groote, S.** (2013). Open access for social work research and practice. *Journal of the Society for Social Work and Research, 4*(1), 31-46.
- Bowen, E. A.** (2012). Addressing the inequality epidemic: Applying a structural approach to social work practice with people affected by HIV/AIDS in the United States. *Critical Social Work, 13*(1), 2-17.
- Bowen, E. A.** (2012). Clean needles and bad blood: Needle exchange as morality policy. *Journal of Sociology & Social Welfare, 39*(2), 121-141.

Book Chapters

- McCoy, H., & **Bowen, E.** (in press). Disproportionality and disparities in the juvenile justice system and the courts. In A. Dettlaff & R. Fong (Eds.), *Eliminating racial disproportionality and disparities: Multi systems culturally competent approaches*. New York, NY: Columbia University Press.
- McCoy, H., Mersky, J. P., Leverso, J., & **Bowen, E. A.** (2014). Risk assessment with juvenile offenders. In A. R. Roberts, W. T. Church, & D. W. Springer (Eds.), *Juvenile justice sourcebook: Past, present, and future*. New York, NY: Oxford University Press.

CONFERENCE PRESENTATIONS (PEER-REVIEWED)

McCoy, H., & **Bowen, E. A.** (2014, January). Using the MAYSI-2 to broaden what we know about traumatic experiences and juvenile offenders. Paper presented at the Society for Social Work and Research Annual Conference, San Antonio, TX.

Quinn, C. R., **Bowen, E. A.**, & McCoy, H. (2014, January). Living on the wrong side of the law: The role of involvement in criminal activity in predicting adolescent substance use. Poster presented at the Society for Social Work and Research Annual Conference, San Antonio, TX.

Bowen, E. A. (2013, May). An epidemic of inequality: Applying a structural approach to social work practice to address social determinants of HIV/AIDS and reduce health disparities. Workshop presented at the National Conference on Social Work and HIV/AIDS, Chicago, IL.

Bowen, E. A., Mattaini, M., Dunn, K., Gutierrez, L., & Mason S. (2013, January). Open access in the social work scholarly literature: Exploring its extent and importance for socially just and evidence-based practice. Roundtable presentation conducted at the Society for Social Work and Research Annual Conference, San Diego, CA.

McCoy, H., & **Bowen, E. A.** (2013, January). Can neighborhood safety and positive parental relationships outweigh negative school experiences for adolescents in urban environments who have future aspirations? Paper presented at the Society for Social Work and Research Annual Conference, San Diego, CA.

Bowen, E. A. (2012, July). A multilevel ecological model of HIV risk context for low-income, unstably housed drug users in urban areas of the United States. Poster presented at the XIX International AIDS Conference, Washington, DC.

McCarty-Caplan, D., & **Bowen, E. A.** (2011, October). HIV/AIDS and sexual minority education: Using an EPAS framework to confront disparities. Paper presented at the Annual Program Meeting of the Council on Social Work Education, Atlanta, GA.

Bowen, E. A. (2011, September). The relationship between housing and HIV risk for drug users: A critical review of the literature. Poster presented at the North American Housing and HIV/AIDS Research Summit, New Orleans, LA.

Bowen, E. A., & Lee, G. (2008, November). Toward a national policy in harm reduction housing: Exploring ethical dilemmas and best practices. Paper presented at the National Harm Reduction Conference, Miami, FL.

FELLOWSHIPS AND RESEARCH AWARDS

2014 Doctoral Fellows Award, Society for Social Work and Research

2013, 2014 Chancellor's Graduate Research Fellowship, University of Illinois at Chicago

- 2010, 2013 University Fellowship, University of Illinois at Chicago
- 2009 Fulbright Fellowship to Malaysia, English Teaching Assistantship Program, U.S. Department of State
- 2002, 2003 McCormick-Tribune Fellowship in Urban and Community Leadership, University of Chicago

RESEARCH EXPERIENCE

- 2011-2013 Research Assistant, "A Strategy for Promoting the Mental Health of and Decreasing the Negative Trajectories for Juvenile Offenders," Henrika McCoy, Principal Investigator (University of Illinois at Chicago, Jane Addams College of Social Work). Funded by the Robert Wood Johnson Foundation New Connections Program.
- 2011-2013 Research Assistant, "Using Advanced Statistical Analysis to Understand Factors Affecting Future Aspirations and School Self-Efficacy for Youth in Urban Environments," Henrika McCoy, Principal Investigator (University of Illinois at Chicago, Jane Addams College of Social Work). Unfunded study using secondary data analysis.
- 2000-2002 Research Assistant, "Services for Adolescent and Family Enrichment [SAFE] Program," David Kolko, Principal Investigator (University of Pittsburgh, Western Psychiatric Institute and Clinic). Funded by the Pennsylvania Commission on Crime and Delinquency and the Juvenile Court of Allegheny County.

UNIVERSITY TEACHING EXPERIENCE

Courses Taught

- Spring 2013 Instructor, Drug and Alcohol Abuse and Social Work Practice (MSW elective course)
University of Illinois at Chicago, Jane Addams College of Social Work
- Fall 2012 Instructor, Social Welfare Policy and Services (MSW foundation course)
University of Illinois at Chicago, Jane Addams College of Social Work

Field Instruction

- 2006-2008 Served as primary field instructor at Heartland Human Care Services for one MSW student from the University of Illinois at Chicago and one student from the University of Chicago

INTERNATIONAL EDUCATION EXPERIENCE

- 2009 English Teaching Assistant
Fulbright English Teaching Assistantship Program, Kampung Raja, Malaysia
- 2000 Student
Pitt in India Program, Central University, Hyderabad, India

POST-MASTERS SOCIAL WORK PRACTICE EXPERIENCE

2009-2010	Program Assistant The Chicago Community Trust, Chicago, IL
2006-2008	Program Manager in Supportive Housing Heartland Human Care Services, Chicago, IL
2005-2006	Curriculum Writer and Trainer Heartland Health Outreach, Chicago, IL
2004-2005	Housing Resource Specialist Heartland Human Care Services, Chicago, IL

LICENSES AND CREDENTIALS

2007-present	Licensed Clinical Social Worker in Illinois
2004-2006	Licensed Social Worker in Illinois

MANUSCRIPT REVIEWS

2013-present	<i>AIDS and Behavior</i>
2011-present	<i>AIDS Care</i>
2011-present	<i>Journal of HIV/AIDS and Social Services</i>

PROFESSIONAL SERVICE

2011-present	Co-Chair, Academic Development Brown Bag Series, University of Illinois at Chicago Jane Addams College of Social Work
2011-2012	Student Representative, University of Illinois at Chicago Jane Addams College of Social Work Doctoral Education Committee
2010-2012	Editorial Assistant <i>Journal of HIV/AIDS and Social Services</i>

AFFILIATIONS

2013-present	Student member, Society for Social Work and Research
2012-present	Student member, Chicago Developmental Center for AIDS Research