

The author(s) shown below used Federal funds provided by the U.S. Department of Justice and prepared the following final report:

Document Title: An Evaluation of Sex Offender Residency Restrictions in Michigan and Missouri

Author(s): Beth M. Huebner, Timothy S. Bynum, Jason Rydberg, Kimberly Kras, Eric Grommon, Breanne Pleggenkuhle

Document No.: 242952

Date Received: July 2013

Award Number: 2008-DD-BX-0002

This report has not been published by the U.S. Department of Justice. To provide better customer service, NCJRS has made this Federally-funded grant report available electronically.

Opinions or points of view expressed are those of the author(s) and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

An Evaluation of Sex Offender Residency Restrictions in Michigan and Missouri

This report is submitted in fulfillment of grant 2008-DD-BX-0002 from the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. Points of view in this document are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice.

Beth M. Huebner
Timothy S. Bynum
Jason Rydberg
Kimberly Kras
Eric Grommon
Breanne Pleggenkuhle

7/1/2013



Author Contact Information

Beth M. Huebner – Co-PI
Associate Professor and Director of Graduate Programs
University of Missouri-St. Louis
Department of Criminology and Criminal Justice
324 Lucas Hall
One University Blvd.
St. Louis, MO 63121-4499
huebnerb@umsl.edu

Timothy S. Bynum – Co-PI
Professor
Michigan State University
560 Baker Hall
East Lansing, MI 48824-1118
Bynum@msu.edu

Jason Rydberg
Michigan State University
rydbergj@msu.edu

Kimberly Kras
University of Missouri – St. Louis
krk550@mail.umsl.edu

Eric Grommon
Indiana University Purdue University - Indianapolis
egrommon@iupui.edu

Breanne Pleggenkuhle
Southern Illinois University – Carbondale
bpleggenkuhle@siu.edu

Acknowledgements

The authors would like to thank the Michigan and Missouri Department of Corrections for their assistance on this project. Points of view in this document are those of the authors and do not necessarily represent the official position or policies of the Michigan Department of Corrections or Missouri Department of Corrections.

Contents

Executive Summary	5
Policy Recommendations	10
Background	14
Introduction	14
Literature Review	15
Goals and Assumptions of Residency Restrictions	15
Research Examining the Effects of Residency Restrictions	17
Residency Restrictions and Housing Characteristics	17
Extra-Legal Consequences of Residency Restrictions for Sexual Offenders	20
The Effect of Residency Restrictions on Recidivism	20
Sex Offender Residency Restrictions in Michigan and Missouri	22
Study Sites	23
Michigan Department of Corrections	23
Missouri Department of Corrections	23
Study Goals	24
Research Questions.....	24
Data and Methodology.....	26
Overview	26
Data Sources and Sample.....	26
Sample Selection	26
Propensity Score Matching.....	26
Data Sources	28
Quantitative Methodology and Measures	28
Geographic Analyses.....	28
Multivariate Quantitative Methodology and Analyses	29
Proportional Hazard Modeling	29
Variables	29
Dependent Measures.....	29
Independent Measures	31
Qualitative Methodology and Analyses	32

Sample Generation and Interview Procedure	32
Analytic Strategy	33
Quantitative Results by State	35
Introduction	35
Descriptive Statistics	35
Geographic Analyses.....	38
Offender Patterns of Residential Movement	44
Limitations of Geographic Analyses	45
Recidivism Models.....	48
Multivariate Analyses	51
Likelihood of recidivism.	51
Timing of recidivism.	52
Qualitative Results	54
Descriptive Statistics	54
Participants	54
Collateral Consequences of Residency Restrictions	57
Perspectives on Residency Restrictions	63
Discussion and Policy Implications	69
Summary	69
Policy Recommendations	72
Limitations	77
List of References	81

Executive Summary

Introduction and Background Literature

Sex offender residency restrictions are a specific form of specialized sex offender legislation which prohibits registered sex offenders from residing within a certain distance from places where children congregate, such as schools or daycare centers. Residency restrictions were designed to enhance public safety by neutralizing the risk of recidivism posed by registered sex offenders released into the community (Levenson & Cotter, 2005; Sample, Evans, & Anderson, 2011; Simon, 1998; Socia, 2011). The assumption behind this legislation is that sex offenders choose their victims from the available population of the area in which they reside. Thus, attempts by the criminal justice system to increase the distance between registered sex offenders and potential targets should correspond to a decrease in recidivism among this group (Kang, 2012). Statewide residency restrictions have been adopted in some form by at least thirty states and at the municipal level in several others (Meloy, Miller, & Curtis, 2008).

While empirical research on sex offender residency restrictions has grown, most current work has centered on documenting the unintended consequences of these policies. For instance, several studies have examined the potential for residency restrictions to adversely shape the availability of housing for registered sex offenders. Socia (2011) observed that in Upstate New York the neighborhoods least restricted by residency restrictions – and thus the areas that registered sex offenders would be allowed to live in – were less affordable, had fewer vacancies, and were concentrated in less dense, rural areas compared to restricted neighborhoods. Additionally, researchers have documented the effect of these laws on quality of life outcomes and reintegration (Levenson & Hern, 2007; Mercado, Alvarez, & Levenson, 2008).

To date, there has been little research on the efficacy of residency restrictions in reducing recidivism among registered sex offenders. Very few studies were identified that directly examined the impact of these laws on sex offender recidivism (Blood, Watson, and Stageberg, 2008; Kang, 2012; Nobles, Levenson, and Youstin, 2012; Socia, 2012). Kang (2012) used individual-level data to follow cohorts of sex offenders and non-sex offenders released both before and after the implementation of residency restrictions, no attempt was made to account for selection bias arising either between the sex offender and non-sex offender cohorts. Overall, the research has not substantiated a link between residency restrictions and reduced crime; however, most of the work has examined crime rates and has not used an adequate comparison group. The

goal of the current study is to build on extant research and consider the efficacy of residency restrictions enacted in Missouri and Michigan.

The Study Sites

The state of Michigan and Missouri are the focus of the current study. Both states were among the first to implement state-wide residency restrictions. Michigan implemented residency restrictions in October, 2005 ("Michigan Sex Offenders Registration Act," 2005).¹ The law prohibits sex offenders from residing within 1,000 feet of school property, also deemed the school safety zone. The act also bars sex offenders from working or loitering within the school safety zone. The Michigan Department of Corrections gives all sex offenders a parole condition requiring them to remain 500 feet from any licensed daycare center, and precludes housing placements within that boundary as well.

Missouri passed residency restrictions in June 5, 2006. The law prohibits sex offenders from living within 1,000 feet of a "public or private school up to the 12th grade or childcare facility which is in existence at the time of the offender establishing his or her residency" ("Missouri Revised Statutes," 2006). In addition, sex offenders are also prohibited from working or loitering within 500 feet of a school, childcare facility, or public park with playground equipment or a public swimming pool. Residency restriction policies in both states were universally applied to all registered sex offenders.

Goals and Objectives

Despite the importance of this topic, little research has examined the effect of residency restriction laws on individual-level outcomes among sex offenders. The current study was developed to address some of these gaps. In specific, the purpose of the study was shaped by three primary goals:

1. Document the residency locations of sex offenders and non-sex offenders before and after the implementation of the residency restriction laws.
2. Examine the change in recidivism patterns before and after the implementation of residency restrictions.
3. Describe the collateral consequences of residency restrictions.

1. *Document the residency locations of sex offenders and non-sex offenders before and after the implementation of the residency restriction laws.*
 - Where do sex offenders live while being supervised in the community and what are the social and structural characteristics of these environments?
 - What is the nature and magnitude of the change in residential patterns of sex offenders following the enactment of residency restrictions?
 - Are sex offenders returning to more disadvantaged neighborhoods following the enactment of residential restriction laws, and how do the residency patterns of sex offenders compare to that of non-sexual offenders?

2. *Examine the change in recidivism patterns before and after the implementation of residency restrictions.*
 - Do the levels of recidivism and the nature of the criminal event vary significantly between the pre and post-restriction sample?
 - How many recidivism events were sexual in nature and what were the characteristics of these incidents?

3. *Describe the collateral consequences of residency restrictions.*
 - How have the residency restrictions, and other formal and informal barriers, affected housing opportunities, social relationships, employment, and quality of life for the sex offender sample?
 - Are the collateral consequences different for sexual and non-sexual offenders?

Data and Methods

The research questions are addressed using a quasi-experimental design to compare the outcomes of the post-restrictions sex offender sample with a pre-restrictions sample and a contemporary control sample of non-sexual offenders selected using propensity score matching (Rosenbaum & Rubin, 1983). The propensity score can be seen as a balancing score as it allows us to isolate the effects of residency restrictions on recidivism by comparing the outcomes of sex offenders and non-sexual offenders who had a similar ‘risk’ of recidivism.

As such, a post-restriction intervention sample, a pre-restriction control group of sex offenders, and a contemporary sample of non-sexual offenders were selected. The pre-policy group includes offenders released between January, 2003 and May 2006. The post-restriction group includes parolees released to the community after the enactment of the residency restrictions. The post-restriction evaluation period spans nearly six years (June 2006-April, 2012) in Michigan and Missouri. The resulting sample in Michigan consisted of 1,703 sex offenders

matched with 1,703 non-sex offenders (N=3,406). The final Missouri sample includes 2,224 non-sex offenders and 2,265 sex offenders (N=4,489). The two groups were not significantly different on any of the observed covariates.

Quantitative Analyses

Two phases of outcome analyses were conducted. First, a geographic analysis of the residential locations of sex offenders before and after the residency restrictions was conducted. In this phase of the analysis, we used ArcGIS to geographically locate offenders and to map restriction zones in both states. We compiled longitudinal address files for each inmate which includes data on the offender's residence and all changes subsequent to entering the correctional system.ⁱⁱ Address data for schools and childcare facilities were obtained from the Missouri State Police and the Missouri Statistical Analysis Center and the Michigan Department of Information Technology and Michigan Center for Educational Performance and Information.

Next, a series of multivariate models of recidivism, including new arrests, technical violations, and return to prison, were estimated. First a series of bivariate and binary logistic regression models were estimated to estimate the likelihood of recidivism in the pre and post restriction periods. Next, we calculated a series of proportional hazard models to consider the timing of recidivism (Cox, 1972; Singer & Willett, 2003).

Finally, the collateral consequences of residency restrictions are documented using data culled from a series of in-depth interviews with sexual and non-sexual offenders. A non-probability quota sampling strategy was used to generate the interview sample of 95 parolees in Michigan and 98 probationers and parolees in Missouri. We used a semi-structured interview guide modeled after prior research of this type (Visher, LaVigne and Travis, 2004). The interview guide included a range of questions surrounding offender's prison and re-entry experiences, emphasizing housing, employment, social support, and substance abuse.

Results

As noted, the project analyses were conducted in three phases. The following sections highlight the results from each element of the project.

Residency Locations of Sex Offenders

The report was designed to explore the effect of residency restriction legislation implemented in Michigan and Missouri. The first goal of the project was to document the housing locations of sex offenders. *There was a decline in the number of individuals living in restricted areas, including near schools or daycare centers, but the differences were not statistically significant.* In Michigan, 23% of the pre-restriction sample lived within 1,000 feet of a school or 500 feet from a daycare facility, and the proportion remained stable at 22% following the enactment of the restrictions. In Missouri, the 26% of the sample lived in the restricted zones before the legislation and 21% did so following the enactment of residency laws.

In addition, our analyses of residential patterns did not support previous research which suggests that residency restrictions would lead to large displacement of offenders to rural areas. However, supplemental analyses in Michigan found that *sex offenders – especially child molesters – moved more often relative to comparable non-sex offenders after the implementation of residency restrictions.* Finally, of the sex offenders released following the implementation of residency restrictions, those living at addresses within the boundary zones surrounding schools and daycare centers tended to live in more disadvantaged areas

Patterns of Recidivism

The second phase of the research considered the occurrence and timing of recidivism. Overall, the findings suggest that *if residency restrictions have an effect on recidivism, the relationship is small.* In Michigan, trends indicate that this effect would lead to a slight increase in recidivism among the sex offender groups, while in Missouri this effect would lead to a slight decrease in recidivism. In Missouri, the reconviction rate declined for sex offenders in the post release period, but the effect was very small. Conversely, rates of rearrest increased significantly over the post-restriction period for sex offender in Michigan. Technical violations were an exception to this generalized trend. The rate of recidivism for technical violations significantly decreased for Missouri sex offenders and non-sex offenders. Michigan non-sex offenders also experienced relatively small post-restriction recidivism reductions for technical violations. There were no changes in the rate of technical violation recidivism for Michigan sex offenders.

In addition to rates of recidivism, the timing to recidivism was also considered. The time to sex offender reconviction for any offense was significantly different after the enactment of residency restriction laws. In Michigan, post-restriction sex offenders were reconvicted much

faster than pre-restriction sex offenders, while in Missouri post-restriction sex offenders took a longer time to be reconvicted. Michigan sex offenders were observed to experience delays in the timing to re-arrest for any offense after residency restriction legislation. There were no differences for non-sex offenders in the timing to reconviction in both states and re-arrest in Michigan.

Unfortunately, we were unable to examine differences in rates of sexual recidivism events – the explicit target behaviors of residency restrictions – because of a very small rate (less than 3% of the sample) of occurrence. In the descriptive analyses, the number of sex offense convictions in Missouri did decline, but the sex offense conviction and rearrest incidence increased in the post-restriction period for Michigan. Overall, a longer period of follow-up is needed to better consider the long-term recidivism patterns of sex offenders, particularly as it pertains to sex offense convictions.

Qualitative Analyses

The results of the qualitative analyses augment the quantitative findings. While all offenders in this study experienced difficulties securing housing and obtaining employment, sex offenders were presented with additional challenges because of the residency restrictions laws. Many sex offenders were unable to live with family or had to relocate because the residence was within the restricted zone. Restrictions also added difficulties when securing employment because residency laws prohibited offenders from working in certain jobs, such as construction or delivery services. Sex offenders were also interviewed about their perspectives on residency restriction. Most felt that since all sex offenders are included in a single high-risk category, as a whole they suffer legal consequences that they feel are a disproportionate response to their own crime.

Policy Recommendations

The findings from the current research suggest that the residency restrictions had little effect on recidivism. The geographic and qualitative analyses indicate that restrictions may further complicate reentry. Based on the current research findings, a number of policy suggestions are presented below.

Reconsider Universal Application of Sex Offender Residency Restrictions

Residency restriction policies in both states were universally applied to all sex offenders. Residency restrictions are not tailored to individual circumstances or risk assessments. Moreover, restrictions are active throughout one's supervision term. The current policy raises concern as it appears to reinforce the perception of that all sex offenders are child molesters. We propose two changes. First, *consider the use of risk assessment instruments when implementing restrictions*. There are a considerable number of risk instruments available for use among correctional populations, and the Static-99 and Static-2002 can be used for offenders who have prior sexual assault conviction (Parent et al., 2011). Second, *evaluate the length of the residency restrictions*. Michigan and Missouri mandates lifetime supervision for certain classes of sex offenders. An alternative approach would be to utilize time-ordered residency restrictions. Decisions on the appropriate length of supervision could be based on observations of offender behavior and compliance (Bushway & Apel, 2012), and/or several risk scores have been developed to measure changing risk over time like the STABLE-2007 and ACUTE-2007 (Hanson, Scott, & Helmus, 2007; McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2010).

It is important to note that programmatic implementation can influence policy outcomes. For example, risk assessment is not without concern as this method of management can be costly and requires frequent correctional oversight. As we observed in the current study, the efficacy of restrictions can be influenced by implementation decisions. A number of offenders in our study remained in restricted areas. The variation from planned implementation may have influenced the results. Housing and restriction decisions should also consider offense patterns and victim type. Overall, it is important to consider heterogeneity of sex offenders when developing public policy.

Increase Housing Services for Sex Offenders

Establishing housing and maintaining a residence is an important factor in the transition process, and three policy suggestions were offered. First, *stable housing services should be the central focus of reentry planning, particularly for sex offender populations*. Although housing has been identified as a critical need for reentering inmates, few program models have been developed to address this gap in services. Programs like the Returning Home-Ohio project have been shown to reduce recidivism among a general sample of parolees (Fontaine, Gilchrist-Scott, Roman, Taxy, & Roman, 2012), and supportive housing models have shown promise for

homeless, criminally-involved men (Hickert & Taylor, 2011). The Colorado Sex Offender Management Board (2004) has also developed an innovative program for sex offenders, but it has yet to be evaluated.

Second, *more research is needed on the provision of transitional housing*. Sex offenders in our qualitative sample were more likely to rely on transitional housing services. There is empirical research to suggest that transitional housing can work (Lowenkamp & Latessa, 2002; Willson, Roman, Wolff, Correa, and Knight, 2010). Minnesota has developed a transitional housing model specific to sex offenders (Hals, 2007), but little empirical evidence has been compiled on these type of housing models. Moreover, transitional housing is only viable short-term solution to housing, and the transitional phase following release from a community care facility warrants further exploration.

Finally, we call for *enhanced research on residential movement patterns of sex offenders over an extended period of time*. Although housing programs have shown promise, most of these types of programs do not extend past one year. Most sex offenders have long-term housing needs, and offenders are more likely to have had a history of residential instability before prison, and to have difficulty maintaining a stable residence after release (Metraux & Culhane, 2004; Richie, 2001). Our results suggest that sex offenders are more likely to report more residential movement following the implementation of residency restrictions, and the results of the qualitative analyses suggest that movement can be disruptive. It is important to consider not only if inmates move but the social and structural quality of the location of these residences.

Develop Reentry Programming Specific to Sex Offender Populations

Sex offenders present special and unique challenges for management in the community. Although much remains to be learned about the complex challenges facing sex offenders in the community, there is a body of research that had identified best practices for sex offender management (Center for Sex Offender Management, 2007). These programs commonly implement the containment approach towards community supervision, a practice that invokes interagency collaboration between corrections, treatment providers, and law enforcement (English, Pullen, & Jones, 1997). An important feature of the containment approach is that each

offender's case is viewed as unique; therefore, the specially trained probation staff shapes individualized case management plans for every offender under their supervision

Future Research

Although the research on reentry has grown substantially over the past two decades, there remains a need to study sex offenders separately from other offenders. First, evidence suggests that sexual offending may differ from other criminal behaviors (Hanson & Bussiere, 1998). That noted, very little research has considered the pathways in an out of offending that has become prominent in scholarly journal articles. In particular, researchers have consistently argued for the importance of prioritizing treatment and services, particularly prison, for higher-risk offenders (Lowenkamp, Latessa, & Holsinger, 2006). Therefore, it would be useful to *evaluate if sex offender residency restrictions can have a similar impact when implemented with a smaller, more risky group of offenders.*

In addition, much is to be learned about *why and how sex offenders desist from crime.* Although the desistance literature has grown substantially over the past decade, sex offenders have been left out of the discussion (Bushway, Piquero, Broidy, Cauffman, & Mazerolle, 2001; Kazemian & Maruna, 2009; Maruna, 2001; Mulvey, 2011). In particular, the current research suggests that there is a need to consider the collateral consequences of residency restrictions on ones sense of self, and how inmate self-perceptions influence the decision-making process.

Finally, residency restrictions require a significant investment, and *more research is needed on the costs of residency restrictions.* Supervision costs can be documented, but the costs of relocation and collateral consequences will require innovative proxies. In addition, it is important to continue to document how the restrictions were implemented by parole authorities. It is equally important to understand how the supervision of sex offenders have influenced resources and staff for non-sex offenders.

Background

Introduction

Although all offenders have been affected by recent punitive policy mandates, changes in the philosophies of the criminal justice system have virtually separated the sexual offender from every other type of criminal (Edwards & Hensley, 2001). Further, legislation mandating sex offender registration, community notification, DNA collection, and civil commitment have predicated increased community concerns over the dangerousness of sexual offenders (Sample & Bray, 2003). In 2004, the Federal government passed the Jacob Wetterling Crimes Against Children and Sexually Violent Offender Registration Act (42 USC 14071) that mandated community registration for sex offenders. This act has originally amended to include mandatory dissemination of registry information (Megan's Law), lifetime registration for serious offenders and recidivists (Pam Lychner Act), and the act was eventually replaced by the Walsh Act that mandates a tiered registration system. As part of the registration requirements, at least thirty states and several municipalities have passed residency restrictions, usually within 500 to 1,000 feet of a school or another area where children congregate that preclude sex offenders from residency and sometimes employment in these areas (Meloy, Miller, & Curtis, 2008).

Although sex offender residency and boundary restriction laws have garnered substantial attention in the media and public policy arenas, few empirical studies have evaluated the efficacy of this legislation for public safety nor considered the possible unintended consequences for offenders. The research conducted to date has focused primarily on registration laws and suggests that limiting enactments for sex offenders have little effect on recidivism and may give rise to negative consequences for offenders, but the available research has been conducted with very small samples in limited geographic regions. Moreover, most of this work has not considered the outcomes of sexual offenders prior to the enactment of the legislation or included a comparison sample of non-sexual offenders.

The current study addresses some of the gaps in our knowledge of sex offenders by examining the efficacy of the sex offender residency restrictions enacted in Missouri and Michigan. The research questions are addressed using a quasi-experimental design to compare the outcomes of the post-restrictions sex offender sample with a pre-restrictions sample and a

contemporary control sample of non-sexual offenders selected using propensity score matching. Three types of outcome analyses were conducted. First, a geographic analysis of the residential locations of sex offenders before and after the residency restrictions was conducted. Next, a series of multivariate models of recidivism were estimated. Finally, the collateral consequences of residency restrictions are documented using data culled from a series of in-depth interviews with sexual and non-sexual offenders.

Literature Review

Numerous studies have examined the correctional outcomes of sex offenders; however, most of this work has centered on the actuarial estimation of recidivism. Very little research has considered the efficacy of criminal justice policies – particularly sex offender residency restrictions - for public safety or the collateral consequences for offenders. That noted, the existing research on the spatial context of offending, sex offender recidivism, prisoner reentry, community corrections, and the unintended consequences of incarceration guide our research. We summarize the existing knowledge base and then detail the research questions to be addressed in the proposed project.

Goals and Assumptions of Residency Restrictions

Residency restrictions and other forms of sex offender legislation are adopted by states and municipalities for several reasons (Levenson & Cotter, 2005; Sample, Evans, & Anderson, 2011; Simon, 1998; Socia, 2011). Practically, residency restrictions are designed to mitigate the recidivism risk of sex offenders known to law enforcement by restricting access to potential targets for victimization, particularly children. Their design operates under the assumption that sex offenders are more likely to choose targets close to areas where they reside and if the sex offender’s residential proximity to potential targets can be increased then the likelihood of recidivism will decrease (Kang, 2012). Indeed, existing research suggests that most crimes are likely to occur in proximity to the offender’s home and the risk of offending decays as they move away from their residence (Brantingham & Brantingham, 1984; Van Koppen & De Keijser, 1997) – also known as the “distance decay” hypothesis. Consistent with the tenets of routine activities theory (RAT), for a crime to occur there must be a convergence of a motivated offender, and a suitable target in the absence of capable guardians (Cohen & Felson, 1979).

While RAT was originally developed to explain aggregate levels of non-sexual crimes, it has not been widely with sex offender population. This theory has notable implications for the operation of residency restrictions. At the aggregate level, RAT predicts that the rate of recidivist sex crimes will increase if released sex offenders are allowed unrestricted access to potential targets because such targets are more likely to be encountered on a day-to-day basis. According to RAT, if known sex offenders' access to potential child targets can be physically restricted through a residency restriction law, then the rate of recidivist sexual offenses in the area of the laws' effect should decrease because of the lack of opportunities to reoffend.

These assumptions have received mixed support from empirical research. In their support, Walker, Golden, and VanHouten (2001) found that among sex offenders living in an Arkansas county those with child victims lived closer to schools, parks, and day care centers than those with adult victims. Similarly, sex offenders living in Newark, New Jersey resided closer on average to restricted locations than a random sample of community members (Chajewski & Mercado, 2008).

Conversely, research has cast doubt on the potential efficacy of residency restrictions to reduce sex offender recidivism, primarily by demonstrating that the routine activities assumptions underlying the legislation have little support. Several studies found that registered sex offenders were unlikely to live in census tracts with larger pools of potential victims (Red-Bird, 2009; Tewksbury & Mustaine, 2008) or closer to schools or daycares than non-sex offenders (Zgoba, Levenson, & McKee, 2009). Research has also observed that sex offender recidivists do not live significantly closer to schools and daycares than non-recidivists, indicating that residential proximity to potential child targets was not related to recidivism (Colorado Department of Public Safety, 2004; Minnesota Department of Corrections, 2003; Zandbergen, Levenson, & Hart, 2010). In Minnesota, of the 224 sex offenders recommitted for a new sex offense between 1990 and 2005, none had committed their crime by establishing direct contact with a victim under 18 at a school, park, or daycare center within 1,000 feet of the offender's residence (Duwe, Donnay, & Tewksbury, 2008). Indeed, sexual offenses typically take place more than 1,000 feet away from restricted zones (Wunneberger et al., 2008). Finally, a review of 405 sex offender records indicate that 7% of the offenders first met their victim in a restricted location and 20% of the offenses committed by sex offenders occurred in public or semi-public

locations; however, offenders who committed crimes against children appeared to be least likely to have met their victim in public or committed their crime in public (Colombino et al., 2009).

Despite research failing to support the assumptions which would make residency restrictions effective at reducing sex offense recidivism, numerous US states have continued to adopt them. To account for this trend criminologists have proposed that residency restrictions largely exist to fulfill a symbolic role and not necessarily one that will have an impact on sex offending. Such laws are considered to have widespread public support (Kernsmith, Craun, & Foster, 2009; Mancini, Shields, Mears, & Beaver, 2010; Schiavone & Jeglic, 2009). Socia (2012a) found that the adoption of county-level residency restrictions in Upstate New York was unrelated to sex crime rates, indicating that such laws were not passed in response to objective crime experiences. Rather, he observed that the implementation of residency restrictions was more likely to occur in the presence of local political competition (i.e., slim margins between political parties) and less likely to occur after nearby counties had adopted residency restrictions.

Research Examining the Effects of Residency Restrictions

To date, social science research on residency restrictions has taken one of three forms – examinations projecting the impact of residency restrictions on available housing, studies concerning the collateral or unintended consequences of residency restrictions, and studies which evaluate the effect of residency restrictions on sex crime. The literature reviewed here is selected from those studies most relevant to the current inquiry. For a systematic review of the sex offender residency restrictions literature see Pacheco & Barnes (2013).

Residency Restrictions and Housing Characteristics

A common form of residency restriction research involves spatial projections of the effect of residency restrictions on housing availability, affordability, and social disorganization. Although the criminological residency restriction literature is still in its opening phase (Socia, 2011), these studies comprise a small majority of existing research. These studies examine areas where residency restrictions typically have not been enacted, but serve as a policy projection of what would potentially happen to the housing situations of local registered sex offenders should a residency restriction law be adopted. Geographic information system (GIS) technology is

typically used to plot the residential locations of registered sex offenders and determine whether those addresses would be in violation of a residency restriction law, followed by a comparison of the socioeconomic characteristics of restricted and unrestricted neighborhoods.

Socia (2011) provides a comprehensive examination of the existing literature in this area in addition to projecting the impact of residency restriction policies of varying scopes on available housing in upstate New York. He observed that regardless of the size of the buffer zone in the restriction legislation, the neighborhoods with the least restricted housing opportunities were significantly less dense and rural (see also Chajewski & Mercado, 2009; Knoll, 2008; Ragusa-Salerno & Zgoba, 2012; Youstin and Nobles 2009, Zandbergen & Hart, 2006). In addition, Socia (2011) found that when the restriction covered fewer locations and the buffer zone was small (i.e., 500'-1000'), the neighborhoods with the least amount of restricted space also had the least available and least affordable housing. Similar findings were produced by Barnes, Dukes, Tewksbury, and De Troye (2009), Briley (2008), Red-Bird (2009), and Zandbergen and Hart (2009a, 2009b) for sex offenders living in South Carolina, Nebraska, Ohio, and Florida, respectively.

The effect of residency restrictions on the demographic characteristics of offender housing locations has been mixed. For example, research has suggested that that registered sex offenders are more likely to reside in socially disorganized areas (Hughes & Burchfield, 2008; Mack & Grubestic, 2010; Mustaine, Tewksbury, & Stengel, 2006a). In contrast, several studies found that the neighborhoods with the least amount of restricted housing tended to be significantly less disorganized than the most restricted neighborhoods (Socia, 2011; Zgoba et al., 2009). Socia (forthcoming) later noted that following the implementation of residency restrictions in New York counties disadvantaged, unstable, and dense neighborhoods showed higher degrees of sex offender clustering. Several studies suggest that the implementation of residency restrictions would require current sex offenders to relocate residences (Briley, 2008; Chajewski & Mercado, 2009; Knoll, 2008; Zgoba et al., 2009). Research has suggested that following a sex offense conviction individuals living in less socially disorganized areas tended to relocate to more socially disorganized areas (Mustaine, Tewksbury, & Stengel 2006b), and those who did relocate following the enactment of residency restrictions tended to move to areas with more significant poverty (Kang, 2012).

This research on housing is important because the characteristics and social location of an offender's residence has been shown to affect parolees. First, offenders living in impoverished urban areas have limited access to job networks and opportunities to participate in local labor markets (Wilson, 1987). Poverty and disadvantage have been tied to the presence and quality of institutions in the community (Hipp, Petersilia, & Turner, 2010; Sampson, Raudenbush, & Earls, 1997); therefore, treatment services are not readily available in urban, disadvantaged neighborhoods as they are in less-distressed, suburban communities. This may particularly be the case for registered sex offenders, who have been found to live significantly farther away from social service providers than non-sex offenders (Hipp, Janetta, Shah, & Turner, 2008). On the other hand, research has also observed that the distance sex offenders travel to treatment in South Carolina is unrelated to treatment completion (Knoll, 2008). Finally, the high rates of disadvantage and residential mobility can undermine informal social control and local network structures (Clear, Rose, Warring, & Scully, 2003). Existing research suggests that the lack of community support structures may impede prisoner reentry. For example, research has suggested that structural characteristics of neighborhoods such as concentrated disadvantage are significantly related to higher recidivism rates (Hipp et al., 2010; Kubrin and Stewart, 2006). Additionally, recent research has indicated a positive relationship between frequent address changes and rearrest (Makarios, Steiner, & Travis, 2010; Steiner, Makarios, & Travis, 2011). This research has not been conducted with a sex-offender only sample, a limitation of existing research.

There is also the possibility that residency restrictions could promote housing instability and transience among registered sex offenders, although no research has systematically examined this relationship. Existing research suggests that released prisoners have higher housing mobility than members of the general public (Visher, Yahner, & LaVigne, 2010), and that housing mobility may increase the likelihood of recidivism for released prisoners in general (Makarios et al., 2010; Merideth, Spier, & Johnson, 2007; Steiner et al., 2011), although LaVigne and Parthasarathy (2005) found no such relationship in their sample of Illinois parolees. Concerning sex offenders, research has observed that they tend to change addresses at least once following registration (Mustaine et al., 2006). A post-only study found that following the enactment of residency restrictions nearly half of a sample of sex offenders did not move at all,

and one-fifth moved three or more times (Levenson, 2008), but it is unclear what the timeframe of housing movement was, or whether it was related to residency restrictions.

Extra-Legal Consequences of Residency Restrictions for Sexual Offenders

The second primary form of residency restriction research is comprised of studies that examine the collateral consequences of the laws on the sex offenders under their supervision. Many these studies have been observational in nature, lacking control groups and the examination of differences between the time prior to and after the implementation of residence restrictions. This branch of research surveys registered sex offenders in the community to learn about their perceptions of and experiences with the laws. To date, the majority of research on collateral consequences has assessed the unintended consequences of specialized sex offender policies in general (see Jennings, Zgoba, & Tewksbury, 2012; Tewksbury, 2005; Tewksbury, Jennings, & Zgoba, 2012; Tewksbury & Lees, 2006; Tewksbury & Mustaine, 2007), as opposed to residency restrictions in particular.

Considering the effect of residency restrictions in particular, research suggests that residency restrictions negatively impact the ability of sex offenders to reintegrate. Samples of registered sex offenders in the community have reported financial hardship and difficulty securing employment due to residency restrictions (Levenson, 2008; Levenson & Cotter, 2005; Levenson & Hern, 2007; Mercado, Alvarez, & Levenson, 2008). These financial constraints must be considered on top of the negative effect of incarceration in general on employment and wages among returning prisoners (Holzer, 1996; Huebner, 2005; Pager, 2003; Western, 2002; Western, Kling, & Weiman, 2001). The same research reports that significant proportions of sex offenders experience psychosocial stress and emotional hardship as a result of residency restriction policies, including having to live farther away from family and other sources of social support (Levenson, 2008; Levenson & Hern, 2007; Mercado, Alvarez, & Levenson, 2008). This distancing is important because the stigma of incarceration alone can tarnish the social status of an individual making maintaining and developing positive social relationships, particularly marriage, difficult (Braman, 2002; Hagan & Dinovitzer, 1999; Huebner, 2007).

The Effect of Residency Restrictions on Recidivism

Research directly examining the impact of residency restrictions on occurrences of sex offender recidivism has been relatively rare. Although there exists some research which projects the efficacy of a hypothetical residency restriction policy on recidivism (e.g., Minnesota Department of Corrections, 2007), there is a lack of research which specifically evaluates implemented residency restriction policies. This may be due in part to the notion that the impact of residency restrictions on sex offender housing or collateral consequences may be examined in a short period of time, a scientifically valid impact evaluation should take several years to establish pre- and post-restriction samples and adequate follow-up. Following the assumptions of residency restrictions discussed earlier, the expectation would be that the operation of the laws would be associated with a decrease in sex offenses by registered sex offenders. Of the few studies that have been conducted, results have been mixed.

Examining raw counts of minor-involved sex offense charges and convictions in Iowa, Blood, Watson, and Stageberg (2008) did not observe a decrease between pre- and post-residency restriction periods. Actually, sex offense charges and convictions increased during the observation period. As Socia (2012b) notes, Blood and colleagues did not differentiate the sex offense convictions of registered sex offenders (i.e., those under the jurisdiction of the residency restrictions) from first time (i.e., non-registered) sex offenders. The possibility is that Iowa's residency restriction law did affect registered sex offenders, but this effect was obscured by increased offending by first time sex offenders.

Nobles, Levenson, and Youstin (2012) examined the effect of Jacksonville, Florida's expansion of their residency restriction law from the 1,000ft statewide boundary to a 2,500ft boundary. In other words, the comparison was between one residency restriction policy and a stricter one. Comparing arrests for all sex crimes and recidivist sex crimes for roughly two and half years prior to and after the policy change, Nobles and colleagues (2012) found no significant effect for the expanded residency restriction law on either sex crime variable. A quasi-experimental interrupted time series analysis also revealed no change in sex crime trends following the expansion of the policy.

Another recent study examined the effectiveness of North Carolina's 1,000ft boundary zone policy. Using a large sample of sex offenders and non-sex offenders in a quasi-experimental design, Kang (2012) observed that sex offenders released post-restrictions were

significantly more likely to receive new convictions for violent and property offenses, relative to non-sex offenders. There was no analogous effect on sex offenses. Sex offenders who were unable to return to their previous residences were more likely to move into poverty and subsequently receive new convictions. In this sense, following the implementation of North Carolina's residency restriction law there was no significant effect on repeat sex offenses by registered sex offenders, but convictions for violent and property offenses was significantly more likely.

Finally, Socia (2012b) examined the effect of county-level residency restrictions in New York. His analyses compared monthly rates of arrests for recidivist and non-recidivist sex crimes against both children and adults, comparing different counties with and without residency restrictions, and comparing the same counties before and after their residency restriction law was implemented. Over a 12 year period, Socia (2012b) observed that county-level residency restrictions were statistically unrelated to recidivist sex crimes against children or adults, and non-recidivist sex crimes against children. This finding indicates that New York's county-level restrictions had no impact on the types of crimes they were designed to combat. On the other hand, the residency restrictions were associated with a decrease in non-recidivist sex crimes against adults. Socia (2012b) interpreted this effect as possible general deterrence.

To date, the research examining the direct effect of residency restriction policies on recidivism among sex offenders has produced null or mixed findings. Most of the available studies have examined the relationship between residency restrictions and aggregate rates of sexual offending, as opposed to the effect of residency restrictions on offenders at the individual level. The latter allows for the estimation of residency restriction's relationship with recidivism while also controlling for additional factors which have been found to be related to reoffending. Additionally, no previous study to date has utilized matched comparison groups of sex offenders and non-sex offenders. Each of these features of the current inquiry serves to improve the internal validity of findings and assist in informing the policy debate surrounding sex offender residency restrictions and their application to specific offender groups.

Sex Offender Residency Restrictions in Michigan and Missouri

As noted, the goal of the current study is to consider the efficacy of sex offender residency restrictions. As such, we developed a two-site study, using Michigan and Missouri, as both states have implemented residency restrictions legislation and have not been considered in previous research of this type. Details on the research sites are provided below.

Study Sites

Michigan Department of Corrections

The Michigan Department of Corrections is one of the most populous prison systems in the nation and supervises approximately 51,000 incarcerated offenders. Approximately 450 sex offenders are released on parole each year, and sex offenders represent 20% of the institutional population. The state has a centralized correctional system, and is overseen by the director of the department of corrections who is responsible for the management of institutional corrections, the parole board, and probation and parole supervision.

The State of Michigan has passed a number of laws that mandate sex offender registration and enact housing restrictions. Michigan passed the first of a series of sex offender registration acts on October 1, 1995, and registry information became publicly available on the internet in 1999. The registration act requires a minimum registration of 25 years and lifetime registration for second and subsequent offenses; individuals convicted of a felony sex offense must verify their address four times per year and misdemeanants once per year. The first residency clause was added to the registration act in October, 2005 ("Michigan Sex Offenders Registration Act," 2005). The law prohibits sex offenders from residing within 1,000 feet of school property, also deemed the school safety zone. The act also bars sex offenders from working or loitering within the school safety zone. Though not specifically part of the student safety zone language, the Michigan Department of Corrections gives all sex offenders a parole condition requiring them to remain 500 feet from any licensed daycare center, and precludes housing placements within that boundary as well. Failure to register is punishable with a felony and residency or loitering mandates a one-year misdemeanor.

Missouri Department of Corrections

The Missouri Department of Corrections is also a centralized system and is responsible for supervising approximately 30,000 inmates in prison and 51,000 offenders on probation and

18,000 individuals on parole. Sex offenders represent 15% of the institutional population and 2% of probationers.

Missouri passed its first registration legislation in January 1995. The law requires all offenders convicted of criminal sexual conduct register with the state police; offenders who victimized adults must register and verify their address every six months and offenders who assaulted juveniles or have been deemed persistent sexual offenders must register every 90 days. Missouri requires lifetime registration for all sex offenders. In June 5, 2006, the registration laws were extended to prohibit sex offenders from living within 1,000 feet of a “public or private school up to the 12th grade or childcare facility which is in existence at the time of the offender establishing his or her residency” (“Missouri Revised Statutes,” 2006). In addition, sex offenders are also prohibited from working or loitering within 500 feet of a school, childcare facility, or public park with playground equipment or a public swimming pool. Failure to comply with the registry or housing restrictions is a class D felony punishable by up to four years in prison. All residency and registration legislation applies to sex offenders sentenced after July 1, 1979.

Study Goals

Research Questions

Despite the importance of this topic, little research has examined the effect of residency restriction laws on individual-level outcomes. The current study was developed to address some of these gaps. In specific, the goal of the study was shaped by three primary goals:

1. Document the residency locations of sex offenders and non-sex offenders before and after the implementation of the residency restriction laws.
2. Examine the change in recidivism patterns before and after the implementation of residency restrictions.
3. Describe the collateral consequences of residency restrictions.

1. Document the residency locations of sex offenders and non-sex offenders before and after the implementation of the residency restriction laws.

- Where do sex offenders live while being supervised in the community and what are the social and structural characteristics of these environments?
- What is the nature and magnitude of the change in residential patterns of sex offenders following the enactment of residency restrictions?

- Are sex offenders returning to more disadvantaged neighborhoods following the enactment of residential restriction laws, and how do the residency patterns of sex offenders compare to that of non-sexual offenders?

2. *Examine the change in recidivism patterns before and after the implementation of residency restrictions.*

- Do the levels of recidivism and the nature of the criminal event vary significantly between the pre and post-restriction sample?
- How many recidivism events were sexual in nature and what were the characteristics of these incidents?

3. *Describe the collateral consequences of residency restrictions.*

- How have the residency restrictions, and other limiting enactments, affected housing opportunities, social relationships, employment, and quality of life for the sex offender sample?
- Are the collateral consequences different for sexual and non-sexual offenders?

Data and Methodology

Overview

The following sections detail the research methodology and data used to test the proposed hypothesis. The section begins with a discussion of the propensity score models used to select the final samples. Next, we provide an introduction to the statistical models and measures used in the quantitative analyses. We end this section with a discussion of the qualitative methodology employed.

Data Sources and Sample

Sample Selection

In any outcome evaluation, the central concern is how does the observed program effects compare to what would have taken place in the absence of the intervention. The project used a quasi-experimental design to evaluate the efficacy of sex offender boundary legislation. This research design allows for switching replications as the timing of residency restriction legislation differs between the two states. The approach allows for greater internal and external validity of observations concerning the effect of residency restrictions (Shadish, Cook, & Campbell, 2002).

As such, a post-restriction intervention sample, a pre-restriction control group of sex offenders, and a contemporary sample of non-sexual offenders were selected. The post-restriction group includes parolees released to the community after the enactment of the residency restrictions. The post-restriction evaluation period spans nearly six years (June 2006-April, 2012) in Michigan and Missouri. The following sections details the methodology used to select an appropriate comparison group.

Propensity Score Matching

The pre-restriction control and non-sexual offender samples were selected using propensity score matching. Propensity score matching is ideal for this analysis as it allows us to partial out some of the unobserved heterogeneity in the statistical models, thereby reducing the likelihood of sample selection bias (Rosenbaum & Rubin, 1983). The propensity score can be seen as a balancing score as it allows us to isolate the effects of residency restrictions on recidivism by comparing the outcomes of sex offenders and non-sexual offenders who had a similar 'risk' of recidivism.

We used a two-step modeling technique commonly used in developing propensity scores. In the first phase of the matching process, we selected a group of variables theoretically and empirically associated with recidivism (Gendreau, Little, & Goggin, 1996; Langan, Schmitt, & Durose, 2003; Quinsey, Rice, & Harris, 1995). In the first step a match was performed to reduce the size of a large comparison sample of non-sex offenders. In Michigan, this stage propensity scores were estimated for 2,793 sex offenders and 50,522 non-sex offenders based upon 18 covariates comprised of demographic and criminal history variables. In Missouri, this stage propensity scores were estimated for 5,997 sex offenders and 85,785 non-sex offenders, and 18 covariates were used. Consistent with approaches suggested in the literature we only included covariates that were antecedent to the current conviction offense. This approach avoids using a procedure that would attempt to predict group membership (i.e., whether a subject is a sex offender or non-sex offender) based on covariates that were direct outcomes of that group membership (see DeLisi, Barnes, Beaver, and Gibson, 2009; Rengifo and Stemen (Forthcoming) for similar approaches). For every sex offender two non-sex offenders with similar propensity scores were selected using a caliper threshold of .001. Matching was stratified by the type of county the offender was paroled to (i.e., Metro area, urban, or rural), so that sex offenders paroled to a particular type of environment were matched to non-sex offenders paroled to the same type of environment.

In Michigan, this procedure resulted in a sample of 2,749 sex offenders and 4,504 non-sex offenders balanced on 13 of the 18 demographic and criminal history covariates. This phase of analysis winnowed the sample in Missouri to 5,996 sex offenders and 11,849 non-sex offenders.ⁱⁱⁱ In Missouri, the pre-restriction sample originally included all offenders convicted between 1997 and 2006. The sample was reduced further to reflect the 2003 to 2006 period used in Michigan. In total, 15 of the 18 covariates were balanced. While the sex offender and non-sex offender groups remained significantly different on several covariates sensitivity analyses indicate that the propensity score matching significantly reduced the bias statistic (Rosenbaum & Rubin, 1985) between the two groups on all observed covariates.^{iv}

While the sample was largely equivalent on many covariates, some of the matched offenders were missing outcome data, particularly address or recidivism variables. Following the procedure described above, a subsequent propensity score match was performed using Michigan data to equate the matched sex offenders with complete outcome data (N=1,981) to the matched

non-sex offenders with complete outcome data (N=1,953). In this set of propensity score matching each sex offender was matched to a single non-sex offender at a .01 caliper threshold without replacement. As with the first stage of matching the sample was stratified by the type of county they were paroled to and balance was assessed on 18 demographic and criminal history variables antecedent to the current conviction offense. The resulting sample consisted of 1,703 sex offenders matched with 1,703 non-sex offenders (N=3,406). The final Missouri sample includes 2,224 non-sex offenders and 2,265 sex offenders (N=4,489). The two groups were not significantly different on any of the observed covariates.

Although the use of propensity scores is ideal for the current quasi-experimental design, the methodology is not without limits. Principally, propensity scores are only as good as the variables used to estimate the models (Shadish, Cook, & Campbell, 2002). Researchers have made great strides in identifying risk factors for recidivism, but current models of recidivism often only explain a small portion of individual variation in recidivism (Petersilia, 2003). In addition, sex offenders often have different risk profiles than non-sex offenders. We have great care in estimating an appropriate propensity model, but our ability to develop an exactly matched control group, particularly for the non-sexual offender group, is limited based on available data.

Data Sources

Quantitative Methodology and Measures

Geographic Analyses

A fundamental assumption of the existing residency restrictions legislation is that sex offenders are gaining access to victims through schools/daycare centers; therefore, it is hypothesized that risk to offenders can be minimized by removing offenders from the proximity of suitable targets. A growing body of research documents the nature of sex offender residences, including living arrangements and community composition. A smaller amount of research has examined this issue following the implementation of residency restrictions.

In this phase of the analysis, we used ArcGIS to geographically locate offenders and to map restriction zones in both states. To complete this task, we acquired the residential address of offenders in the study and control samples from the Missouri and Michigan Department of Corrections. We compiled longitudinal address files for each inmate which includes data on the

offender's residence and all changes subsequent to entering the correctional system. Address data for public and private schools and childcare facilities were obtained from the Missouri State Police and the Missouri Statistical Analysis Center and the Michigan Department of Information Technology and Michigan Center for Educational Performance and Information. Both states maintain licensure divisions that are responsible for oversight of local childcare facilities. For this study, a childcare facility only includes providers who are licensed by the state. Address data was merged, cleaned, and overlaid in ArcGIS, and the buffer zones around schools and daycare facilities were designated.

Multivariate Quantitative Methodology and Analyses

Proportional Hazard Modeling

In addition to a binary logistic regression analysis, we utilize proportional hazard models. These models are ideal for the current analysis as they account for censoring common in recidivism studies (Cox, 1972; Singer & Willett, 2003). The current analysis includes offenders with differing sentences and release dates; proportional hazards models account for the variation in release dates by modeling the time interval between release from prison (or sentence to probation) and reconviction. By estimating the timing of recidivism, we are able to include all felony probationers and parolees supervised in the community, regardless of the time at risk in the community, thereby increasing the follow up times and accuracy of the model.

Variables

Dependent Measures

We use a broad range of measures of recidivism including: technical violations, rearrest, reconviction, and reimprisonment. We will also obtained data on the date of the recidivism event so that hazard models can be estimated. Data for this phase of the analyses were obtained from the Michigan and Missouri Department of Corrections. Although the data systems in each state are similar, there may be differences in definitions used. As such, we present the outcome models by state.

We utilize several measures of recidivism to examine the efficacy of sex offender residency restrictions. Measures of general recidivism including parole technical violations and

reconvictions were considered in both sites, and a measure of rearrests was included for Michigan. Where applicable, we also examine the prevalence of reconvictions and rearrests for sex offenses.

Data for this aspect of the analyses come from various sources and cover different follow-up dates. In Michigan, data on technical violations and reconvictions were obtained from the Michigan Department of Corrections and capture recidivism events occurring before April 1st, 2009. Data on rearrests and sex offense rearrests were obtained from the Michigan State Police and capture recidivism events occurring prior to May 7th, 2012. In Missouri, all data were obtained from the Missouri Department of Corrections and reflect reconviction and technical violations up to April 15th, 2012. After these dates information on these measures is censored. In this sense there is a longer follow-up period for rearrest data than for the technical violation and reconviction data. In some later analyses recidivism events are capped at 2 years following the sample subjects release from prison in order to equate time at risk and improve the comparability of these measures as binary outcomes.

Each of these measures captures a different aspect of post-release criminality. Technical violations represent failure of the parolee to comply with the conditions of release including: supervision, submitting to drug tests, or staying away from certain individuals.^v Reconvictions represent new crime substantiated in court. Rearrests correspond to events where the parolee was taken into custody by the police pursuant to an alleged crime. Rather than being a measure of whether a crime has actually taken place, rearrests are better viewed as an indicator of contacts with law enforcement.^{vi}

We also utilize variables which capture the amount of time until each of these recidivism events for the purposes of survival modeling. For the arrest and reconviction measures time until recidivism was calculated as follows. For recidivists, we subtracted their parole release date from their recidivism date to determine the length of time (in days) spent in the community until the recidivism event occurred. For non-recidivists we subtracted their parole release date from the time of right censoring, which was the maximum follow-up date for each measure. In Michigan, these dates corresponded to April 1st, 2009 for reconvictions and May 7th, 2012 for rearrests. In Missouri, reconviction dates were current as of April 15, 2012. Our analyses of technical violations were limited to two years, the average time spent on parole.

Independent Measures

A number of independent covariates were available for our analyses. The primary variable of interest is whether the parolee was released during the residency restriction period (i.e., post-restriction release). In addition to this primary independent variable we obtained demographic, criminal history, and address information from the Michigan and Missouri Departments of Corrections. While a total of 18 covariates were used in the propensity score matching procedure to match the sex offender and non-sex offender samples, only those that remained unbalanced between the pre-restriction and post-restriction groups are noted here.

Post-restriction release. A single dichotomous independent variable is used to indicate whether the parolee was released from prison following the implementation of the sex offender residency restriction law (0 = *pre-restriction release*; 1 = *post-restriction release*).^{vii}

As noted, we utilize a propensity score matching procedure to best equate the sex offender sample to the non-sex offender comparison group. After performing this procedure there were several variables which were unbalanced between the pre-restriction and post-restriction sex offenders and non-sex offenders, introducing a selection bias threat to internal validity. As such, we control for these unbalanced measures in our multivariate analyses. These measures are detailed below.

Criminal history controls. For both sex offenders and non-sex offenders we controlled for the effect of several criminal history indicators. *Incarceration length* is a continuous variable which refers to the amount of time the parolee had spent in prison on the offense for which they were released. The Michigan analyses also include two unique controls including juvenile record and probation terms. This information was not available for Missouri. *Juvenile record* is a dichotomous variable (1 = parolee has a juvenile record) which indicates whether the sample member has ever been committed to a juvenile correctional facility or placed on juvenile probation. Two variables were used to capture elements of adult criminal history. *Adult probation terms* is a binary measure indicating whether the sample member has ever served a probation term (1 = parolee has a previous probation term as an adult), and *prior misdemeanor* is a binary variable indicating the presence of at least one misdemeanor on the parolee's record (1 = parolee has a previous misdemeanor conviction).

Two variables are also used to capture elements of in-prison misconduct. *General historical misconducts* is a binary measure of whether the parolee has ever received a general

misconduct ticket during an incarceration (1 = parolee has received a general misconduct ticket), and *sexual historical misconducts* is a similar indicator of whether the parolee had received a sexual misconduct ticket during an incarceration (1 = parolee has received a sexual misconduct ticket).

For sex offenders, one additional criminal history indicator was used. We included a variable controlling for victim age, whereas those offenders paroled for a sexual offense against a child under 13 were differentiated from those with victims aged 13 or older (1 = victim under the age of 13).^{viii} This variable corresponds to an indicator of whether the sex offender could be considered a de facto child molester.

Demographic controls. The sex offender sample was unbalanced on several demographic variables between the pre-restriction and post-restriction groups. We included controls for these variables in the multivariate models. *Offender age* is a continuous, standardized indicator of the sex offender's age in years. *Female* is a binary indicator of the offender's sex (1 = offender is female). The sex offender's race is indicated by a single dichotomous measure, differentiating *non-white* sex offenders from white sex offenders (1 = non-white). Also included is a variable capturing whether the sex offender had *been married* in the past (1 = ever-married) and two indicators of their highest level of education. These two variables corresponded to those who either had *not completed their high school diploma* (1 = less than high school diploma), which included those who had received G.E.D.'s, and those who had *any education beyond high school* (1 = greater than high school education).

Qualitative Methodology and Analyses

Sample Generation and Interview Procedure

A non-probability quota sampling strategy was used to generate the interview sample of 95 parolees in Michigan and 98 individuals in Missouri. In Michigan, five urban and two rural parole offices were selected as interview sites. In Missouri, interviews were conducted at seven sites, including five probation and parole offices, one prison, and one community release center.^{ix} In each site, the research team met with staff from the Department of Corrections to identify parole branch offices that carried large sex offender caseloads. The researchers had a quota to interview 10 sex offenders and five non-sex offenders from each project site. The 10 sex offenders were to be stratified by offense severity and criminal history and the non-sex offenders

were to be matched to the sex offenders on risk and criminal history. Men on parole for less than a year were preferred in order to minimize recall bias extending back to their release and because lower-risk parolees would be overrepresented among those men surviving beyond that point.

There were some differences between the study states in terms of where interviews were conducted. In Missouri interviews at the probation offices were conducted on random report days and offenders volunteered participation. Interviews at the community release center and prison were selected by corrections staff due to security protocol. Offenders at the community release center and prison were nearing their release date and volunteered to participate. At each location offenders were interviewed in private offices. Interviews lasted approximately hour.

A project script presenting the study as one concerned with capturing reentry experiences was given to parole officers to approach individuals in their caseloads. Once a parolee agreed to participate, an interview was arranged at the parole office, typically on the parolee's reporting day. In Michigan the interviews were conducted in vacant offices. The interviewer identified themselves as a university researcher and the project as being concerned with capturing reentry experiences from the parolees' perspective. Interviews were recorded with a digital voice recording device. Offenders were first given information regarding the study, assured confidentiality, and asked to sign a consent form. Interviews were digitally recorded and subsequently transcribed, with pseudonyms applied to each interview. An incentive of \$20 for offenders not in custody was provided to compensate them for their time.

We used a semi-structured interview guide modeled after prior research of this type (Visher, LaVigne and Travis, 2004). The interview guide included a range of questions surrounding offender's prison and re-entry experiences, emphasizing housing, employment, social support, and substance abuse. Sex offender specific topics such as residency restrictions, registration, and treatment were also of interest. Offenders were asked to describe their experiences returning to the community while living under sex offender restrictions. Offenders were encouraged to expound upon topics through open-ended questions and probes.

Analytic Strategy

Qualitative analyses were conducted using the qualitative software program *NVivo*. Each interview was imported into the software and analyzed using an open coding strategy that followed both grounded theory and modified grounded theory approaches (Silverman, 2006). Interviews were first read to identify themes within the specified topic areas, as well as code

emergent subthemes. Qualitative analyses were conducted prior to knowledge of recidivism outcomes, strengthening the integrity of the coding strategies. Two researchers separately coded the interviews into variables of interest, then reached consensus on how to code ambiguous cases. Some variables were directly input from close-ended questions and scales in the interview guide, while variables created from open-ended questions and probes in the interview followed themes from the qualitative analysis.

After the initial coding, memos surrounding single themes or themes within a broader topic were compiled and re-read to detail and refine the analysis by identifying additional subthemes or divergent cases. *NVivo* also assists with comparing cases among themes by linking statements made by one individual about multiple themes. This analysis allowed us to identify patterns across and within themes in the data.

Quantitative Results by State

Introduction

The following section describes outcomes of a series of empirical analyses. This section begins with a brief discussion of the study sample. Next, the results of the geographic analyses are described. The section concludes with a series of recidivism analyses.

Descriptive Statistics

The following section provides descriptive statistics for the intervention and control groups in each state. Table 1 and 2 provide descriptive statistics on the conviction offenses of the Michigan and Missouri sex offender and non-sex offender cohorts. These are the offense types that each of the sample members were serving their parole on when they were under observation for this study. When sample members were on parole for multiple charges the most serious offense was chosen, which is reflected in the order of the offense categories.

Michigan uses a four-tier classification system to characterize sexual offenses. The tiers of the system are based upon the combinations of contact versus penetration and the presence or absence of aggravating circumstances. More specifically, 1st degree criminal sexual conduct (CSC 1) applies when the offense involves both penetration and aggravating circumstances, and CSC 2 when there is sexual contact and aggravating circumstances. CSC 3 is applied when there is penetration and no aggravating circumstances, and CSC 4 when there is contact and no aggravating circumstances. Aggravating circumstances include when the victim is under the age of 13, a weapon is used, the victim was incapacitated, or the victim is injured, among others. Other sex offenses is a category vastly comprised of assaults with the intent to commit one of the above CSC offenses.

Table 1. Conviction Offenses for Michigan Sex Offender and Non-Sex Offender Cohorts.

Cohort and Offense Type	Percent of Sample
<i>Sex Offenders</i>	
CSC 1	15.7%
CSC 2	29.2%
CSC 3	41.7%
CSC 4	2.9%

Other Sex Offense	10.5%
Victim Under Age 13	22.1%
Victim Age 13 to 15	33.9%
<i>Non-Sex Offenders</i>	
Personal	31.7%
Property	23.4%
Drug	20.6%
Public Safety	24.4%
Notes: “CSC” = Criminal sexual conduct. “Other sex offense” is primarily made up of assaults with the intent to commit a sex offense. “Public safety” includes offenses such as weapon carrying and fleeing the police.	

The results presented indicate that the Michigan sex offender cohort included a heterogeneous sample of offense types. The most prevalent sex offense category was CSC 3, meaning that the majority of sex offenders in the sample were on parole for an offense involving penetration but no aggravating circumstances. Overall, just more than half (57.4%) of the sex offender sample were on parole for one of the two penetration tier offenses. Table 1 also includes indicators of the victim’s age, which can be gleaned from the specific offense codes for sexual offenses (e.g., MCL 750520B1A – CSC 1st Penetration under 13). Approximately one-fifth of the Michigan sex offender cohort (22.1%) were on parole for an offense against a victim under the age of 13, and approximately one-third (33.9%) against a victim aged 13 to 15, meaning that over half (55.9%) were on parole for an offense against a victim under age 16.

As for the Michigan non-sex offender cohort, their conviction offenses were categorized as personal, property, drug, or public safety. Public safety offenses included offenses such as weapon carrying, evading police, and motor vehicle offenses. The most prevalent conviction offenses fell into the personal category, with roughly one-third of the non-sex offender cohort (31.7%) serving their parole for such an offense.

Table 2. Conviction Offenses for Missouri Sex Offender and Non-Sex Offender Cohorts.

Cohort and Offense Type	Percent of Sample
<i>Sex Offenders</i>	
Rape	15.6%

Sodomy	9.8%
Sexual Assault	6.8%
Sexual Molestation	8.0%
Child Molestation	4.8%
Endangerment	32.0%
Other Sex Offense	23.0%
Victim Under Age 15	22.1%
<i>Non-Sex Offenders</i>	
Personal	15.6%
Property	30.1%
Drug	46.0%
Other	8.3%

The sample of Missouri offenders is also diverse, and 22% of the sample was sentenced to crimes that include children under the age of 15 (see Table 2). Child endangerment and enticement were the most common offense type. This class of behaviors includes sexual conduct with a person under the age of seventeen years over whom the person is a parent, guardian, or otherwise charged with the care and custody; or includes the persuasion or solicitation of, through words, actions or communication via the internet, a minor for the purpose of engaging in sexual conduct. The behaviors must be sexual in nature to be considered under the child endangerment and enticement charge codes. Rape involves sexual intercourse with a person by forcible compulsion. Sodomy is deviate sexual intercourse with a person by forcible compulsion. Forcible compulsion includes actions that render the victim physically or mentally impaired so as to be incapable of making an informed consent to sexual intercourse. Sexual assault is sexual intercourse with another person without that person’s consent, and sexual molestation involves subjecting a minor to sexual contact that does not include intercourse. Other sex crimes include prostitution, incest, sex performance, and pornography. Non sex offenders were most often released after serving time for a drug offense. In addition, nearly one third of the sample served time for a property offense and 15.6% had committed a personal crime.

Geographic Analyses

The following section details the geographic analyses portion of the project. The goal of this part of the project is to document the residency locations of sex offenders and non-sex offenders before and after the implementation of the residency restriction laws. To provide a description of residency restriction implementation in Michigan and Missouri we performed the following series of analyses. The analyses involved using GIS software (ArcGIS) to map the initial parole addresses of each offender and examining the proportion of those addresses which fell within 1,000 feet of a school or licensed daycare center (500 feet in Michigan).^x To conduct the analysis we first geocoded (i.e., plotted an address to a particular location in space) all addresses for both the sex offender and non-sex offender samples.^{xi} We then geocoded all schools and daycare centers in the state.^{xii} The first address for each sample member was selected (i.e., the address that the offender was paroled to). Any addresses that corresponded to correctional facilities or zipcode centroids were removed from the analyses.

Table 3 and 4 provide an overview of residency restriction implementation for the states of Missouri and Michigan. Analyses were run to examine how many offenders resided in restricted zones. The groups were further broken down into pre and post residency restriction groups, resulting in a total of four comparable groups. In Missouri, the geographic sample includes 3,609 individuals: 1,879 non-sex offenders and 1,729 sex offenders. In Michigan, this selection procedure produced a sample of 1,596 sex offenders and 1,651 non-sex offenders.

The following information documents the residential patterns of offenders in Michigan. The proportion of pre-residency restriction first addresses that were in violation of the statewide residency restriction law was compared to the first addresses of sample members released following the implementation of the restrictions. For the pre-restriction sex offenders (i.e., those who were not under the effect of the laws) more than one-fifth (23%) were living within 1,000 feet of a school or 500 feet of a daycare center. This is compared to 26% of the non-sex offender comparison group in the same period. Following the implementation of the residency restriction law in 2006, 22% of the first addresses of the post-restriction sex offenders were within the boundary areas. The proportion of sex offenders living in restricted areas declined very slightly, and the difference between groups was not statistically significant ($t = 0.30, p = .75$).

We also considered if the residency restriction laws were primary applied differently to child molesters (i.e., sex offenders with victims under the age of 13). Our results indicate that

while the overall proportion of child molesters first addresses in violation of the residency restriction law was lower in the post-restriction period, the difference was not statistically significant ($t = 1.17, p = .24$). Additionally, in both the pre- and post-restriction periods child molesters were not more or less likely to have a first address within 1,000 feet of a school or 500 feet of a daycare center when compared to offenders with offenders with non-child victims.

The residency patterns of non-sex offenders did not change significantly during the intervention period. Approximately one quarter of non-sex offenders lived in the restricted zones. Following the implementation of the residency restriction law there was not a significant difference in the proportion of sex offenders living in restricted areas for their first parole address, relative to non-sex offenders ($t = 0.49, p = .63$).

Table 3. Michigan: Sex Offenders and Non-Sex Offenders in Violation of Residency Restrictions, First Address (N=3,247).			
Group and Period	Pre-Restrictions	Post-Restrictions	t-test
<i>Sex Offenders</i>			
Schools	12.4% (154/1244)	12.5% (44/352)	$t = -0.06, p = .95$
Daycare Centers	12.9% (160/1244)	12.2% (43/352)	$t = 0.32, p = .75$
Overall	22.9% (285/1244)	22.2% (78/352)	$t = 0.30, p = .75$
<i>Child Molesters</i>			
Schools	13.2% (37/280)	13.9% (11/79)	$t = -0.16, p = .87$
Daycare Centers	15.4% (43/280)	7.6% (6/79)	$t = 2.10, p = .04$
Overall	25.0% (70/280)	19.0% (15/79)	$t = 1.17, p = .24$
<i>Non-Sex Offenders</i>			
Schools	15.9% (211/1331)	14.7% (47/320)	$t = 0.52, p = .61$
Daycare Centers	13.4% (179/1331)	13.4% (43/320)	$t = 0.01, p = .99$
Overall	25.9% (345/1331)	23.8% (76/320)	$t = 0.80, p = .42$
Any, SO v Non-SO	$t = 1.77, p = .08$	$t = 0.49, p = .63$	

Similar results were observed in Missouri (see Table 4). One quarter (26%) of sex offenders lived within any restricted zone prior to the implementation of the law, and 31% of non-sex offenders lived in similar areas. Overall, sex offenders were less likely to live in restricted areas before and after the implementation of the law, and the differences between groups are statistically significant.

The rates of residency in restricted areas declined following implementation of the residency restrictions, but the difference between pre-restriction and post-restriction sex offenders living within restricted zones was not statistically significant ($t = -.60, p = .56$). A total of 21% of the sample lived in a restricted area following release from prison. For all offenders living within restricted zones, they primarily lived within 1,000 of daycare centers; a minority violated by living too close to a school. The differences in residential patterns of individuals with child victims were not substantively different than the total sex offender population, and few differences emerged among the non-sex offender sample.

Table 4. Missouri: Sex Offenders and Non-Sex Offenders in Violation of Residency Restrictions, First Address (N=3,609).			
Group and Period	Pre-Restrictions	Post-Restrictions	t-test
<i>Sex Offenders</i>			
Schools	10% (88/881)	11% (92/848)	$t = -0.60, p = .56$
Daycare Centers	22% (190/881)	19% (164/848)	$t = 1.15, p = .25$
Overall	26% (226/881)	21% (217/848)	$t = -0.03, p = .98$
<i>Child Molesters</i>			
Schools	11% (13/116)	9% (12/127)	$t = 0.45, p = .65$
Daycare Centers	22% (26/116)	17% (22/127)	$t = 0.99, p = .32$
Overall	26% (30/116)	21% (27/127)	$t = 0.84, p = .40$
<i>Non-Sex Offenders</i>			
Schools	14% (144/1063)	12% (101/816)	$t = 0.75, p = .46$
Daycare Centers	25% (269/1063)	23% (193/816)	$t = 0.83, p = .41$
Overall	31% (333/1063)	30% (244/816)	$t = 0.66, p = .51$
Any, SO vs. Non-SO	$t = -2.771, p = .01$	$t = -1.964, p = .05$	

COMMUNITY ANALYSES

In addition to examining whether offenders returned to areas in violation of residency restriction laws, we were also interested in the demographic characteristics of these communities. Similar to the violation analyses, we compared pre-restriction offenders to post-restriction offenders as well as sex offenders to non-sex offenders. Data for this aspect of the analyses was obtained from the 2000 Decennial Census, and data were merged at the tract level.

Our focus of these analyses is to describe the general community structure of communities in which offenders reside. We include several indicators including: concentrated disadvantage, housing structures, and urban or rural residences. In Missouri, the analyses are based on a sample of 4,174 offenders.^{xiii} The Michigan sample includes 3,314 subjects; 1,679 non-sex offenders and 1,635 sex offenders.

Community Structure

As displayed in Tables 5 and 6, offenders returned to areas indicative of concentrated disadvantage. Concentrated disadvantage was calculated using factor scores, combining the rates of unemployment, female headed households, persons on public assistance, and households under the poverty line. In both states, all loadings were above .70 and explained at minimum 72% of the variance. Higher scores indicate greater levels of concentrated disadvantage.

The results for Michigan indicate that the first addresses of sex offenders in the post-restriction sample were in areas with significantly less concentrated disadvantage, relative to pre-restriction sex offenders. Both pre-restriction and post-restriction sex offenders also lived in areas with significantly less disadvantage than the non-sex offender sample during the same periods. In contrast, post-restriction sex offenders in Missouri were more likely to return to disadvantaged communities than their pre-restriction counterparts. The difference between groups approached statistical significance. Different from Michigan, sex offenders and non-sex offenders did not return to significantly different neighborhoods, relative to concentrated disadvantage.

Table 5. Michigan: Comparisons of Concentrated Disadvantage			
Time Period			
Group	<i>Pre-Restriction</i>	<i>Post-Restriction</i>	t-test
<i>Sex Offender</i>	.40 (1.20)	.22 (1.08)	t = 2.62, p = .01
<i>Non-Sex Offender</i>	.50 (1.03)	.54 (1.06)	t = -0.74, p = .46
t-test	t = 2.18, p = .03	t = 3.38, p = .00	

Table 6. Missouri: Comparisons of Concentrated Disadvantage			
Time Period			
Group	<i>Pre-Restriction</i>	<i>Post-Restriction</i>	t-test
<i>Sex Offender</i>	.17 (1.00)	.24 (1.01)	t = -1.54, p = .13
<i>Non-Sex Offender</i>	.18 (.94)	.22 (1.01)	t = -0.85, p = .40

t-test	t = -0.37, p = .71	t = 0.38, p = .70	
---------------	---------------------------	--------------------------	--

Housing provides the foundation to successful reentry. As such, an additional concern was the rate of available housing in communities. We created a measure to examine rates of rental vacancy, calculated by dividing the total vacant rental housing units by the total number of rental households in the area. In Michigan there was no significant variability in this measure. Results in Table 7 indicate that roughly 7 percent of the rental housing was available in the communities that the Michigan sample members returned to, and that there were no statistically significant differences between pre-restriction and post-restriction samples, or sex offenders and non-sex offenders. In Missouri a similar pattern was observed, whereas the typical rental housing availability was just under 10%, and did not significantly vary across groups (see Table 8). That is, sex offenders and non-sex offenders in both residency restriction cohorts were all released into Michigan and Missouri communities with similar rates of rental vacancies.

Table 7. Michigan: Comparisons of Rental Vacancies			
Time Period			
Group	<i>Pre-Restriction</i>	<i>Post-Restriction</i>	t-test
<i>Sex Offender</i>	.07 (.04)	.07 (.04)	t = 1.30, p = .18
<i>Non-Sex Offender</i>	.07 (.05)	.07 (.05)	t = 0.06, p = .95
t-test	t = -0.30, p = .76	t = 0.74, p = .46	

Table 8. Missouri: Comparisons of Rental Vacancy			
Time Period			
Group	<i>Pre-Restriction</i>	<i>Post-Restriction</i>	t-test
<i>Sex Offender</i>	.10 (.06)	.10 (.05)	t = 0.41, p = .73
<i>Non-Sex Offender</i>	.10 (.05)	.10 (.05)	t = 0.79, p = .43
t-test	t = 0.46, p = .64	t = 0.84, p = .40	

A concern noted in previous literature is that residency restrictions may result in reduced availability of housing in urban areas, forcing registered sex offenders to seek housing in rural areas. Table 9 and 10 compare the proportions of each sample group living in urban or rural areas. These analyses used a dichotomous measure of urban or rural residence, provided by the

United States Department of Agriculture. In both states the majority of offenders returned to urban areas. Considering Michigan in particular, there were differences when considering sex offenders and non-sex offenders as sex offenders were less likely to reside in an urban location during both restriction periods. There was no statistically significant difference for sex offenders subject to residency restrictions, but more post-restriction non-sex offenders had their first address in an urban area. A somewhat different pattern was observed in Missouri. In that site pre- and post-restriction sex offenders were equally as likely to live in an urban area. There was also no statistically significant difference between the pre-restriction sex offenders and non-sex offenders. On the other hand, a significantly higher proportion of non-sex offenders resided in urban areas during the post-restriction period, relative to both pre-restriction non-sex offenders and post-restriction sex offenders.

Table 9. Michigan: Comparisons of Urban Residencies			
Time Period			
Group	<i>Pre-Restriction</i>	<i>Post-Restriction</i>	t-test
<i>Sex Offender</i>	79%	80%	t = -0.57, p = .57
<i>Non-Sex Offender</i>	85%	91%	t = -2.75, p = .01
t-test	t = 4.31, p = .00	t = 3.84, p = .00	

Table 10. Missouri: Comparisons of Urban Residencies			
Time Period			
Group	<i>Pre-Restriction</i>	<i>Post-Restriction</i>	t-test
<i>Sex Offender</i>	62%	61%	t = 0.86, p = .39
<i>Non-Sex Offender</i>	61%	66%	t = -2.60, p = .01
t-test	t = 1.03, p = .30	t = -2.35, p = .02	

Context of Violation

We performed additional analyses to examine the community characteristics of the sex offender residences that fell within the restricted zones (1,000 feet of a school or daycare center in Missouri, or within 1000ft of a school or 500ft of a daycare center in Michigan). The results of these analyses are presented in Table 11 and 12. Overall, the first addresses that were within the restricted zones were significantly more disadvantaged than the addresses that were outside the zone. With the exception of the rental vacancy measure for Michigan, sex offenders who resided

within the restricted zones in both Michigan and Missouri lived in communities with more disadvantage including higher unemployment, and higher poverty rates..

Table 11. Michigan Sex Offenders Living in Restricted Zones

Variable	Violator (N=78)	Non-Violator (N=274)	t-test
Concentrated Disadvantage	.74 (1.76)	.09 (.74)	t= -3.21, p = .00
Unemployment Rate	5.64% (.12)	4.21% (.08)	t= -2.34, p = .02
Public Assistance Rate	17.75% (.32)	6.79% (.06)	t =-3.03, p = .00
Female-Headed Household	16.80% (.10)	12.48% (.08)	t = -3.87, p = .00
Poverty Rate	18.53% (.16)	12.18% (.09)	t = -3.37, p = .00
Rental Vacancy Rate	6.56% (.04)	7.12% (.04)	t = 0.96, p = .34
Residential Mobility Rate	45.58% (.12)	43.29% (.09)	t = -1.59, p = .11
Urban Residence	92.31% (.31)	78.10% (.40)	t = -3.61, p = .00

Table 12. Missouri Sex Offenders Living in Restricted Zones

Variable	Violator (N=217)	Non Violator (N=631)	t-test
Concentrated Disadvantage	.73 (1.17)	.05 (.87)	t= -8.08, p = .00
Unemployment Rate	.05 (.04)	.04 (.03)	t= -6.65, p = .00
Public Assistance Rate	.11 (.09)	.07 (.07)	t =-5.93, p = .00
Female-Headed Household	.20 (.12)	.12 (.08)	t = -9.73, p = .00
Poverty Rate	.20 (.12)	.14 (.08)	t = -5.88, p = .00
Rental Vacancy Rate	.10 (.05)	.09 (.05)	t = -7.07, p = .00
Residential Mobility Rate	.49 (.10)	.46 (.10)	t = -3.78, p = .00
Urban Residence	.705 (.46)	.582 (.49)	t = -3.44, p = .00

Offender Patterns of Residential Movement

In a series of supplementary analyses (results not shown) on members of the Michigan sub-sample (N=1,936) we examined whether the enactment of residency restrictions were associated with housing mobility of sex offenders (Rydberg, Grommon, Huebner, & Bynum, 2012). This was an important consideration because previous literature on specialized sex offender legislation had suggested that residency restrictions may carry collateral consequences for registered sex offenders, including transience and homelessness. To consider this question,

we divided the sex offender sub-sample into multiple groups based on their post-release housing mobility – those who did not move at all, those who moved 1-2 times, 3-4 times, or 5 or more times – and examined whether residency restrictions were associated with membership in any of the groups. Independent of other factors such as criminal history, risk, and demographics, we observed that sex offenders released after the enactment of residency restrictions were significantly more likely to move 3-4 or 5 or more times compared to zero times. Interestingly, we also observed that those offenders with victims under the age of 13 were significantly more likely to move five or more times compared to zero times. This finding suggested that Michigan sex offenders in the post-restrictions cohort experienced increased housing mobility following release. This finding carries important implications for the post-release management of sex offenders, as those experiencing increased housing mobility may require increased supervision while simultaneously being more difficult to track.

Limitations of Geographic Analyses

The preceding presented a discussion of addresses that appeared to be in violation of the statewide residency restriction policies according to our methodology and measurements. The geographic analyses presented here for Missouri and Michigan are not without limitations which require caution in interpreting the results. In particular, issues surrounding address measurement and geocoding may limit the validity of the results. For these particular analyses we utilized a street network data model, or “street geocoding”, which is the most commonly used address geocoding procedure in GIS services and research (Zandbergen, 2008, 2009).^{xiv} Using street geocoding, addresses are identified by first locating the street referenced in the address (e.g., Main Street), then locating the segment of that street identified by the address number (e.g., 300-400), and then placing a point along the street segment based on the street number within the segment (e.g., 350, or half-way through the 300-400 segment). Additional indicators point to which side of the street the address is on and adjust the point accordingly (Zandbergen, 2008). In the current analysis we used a side offset of 20 feet. Street network data were utilized for this project because that was the nature of the geographic data available. Alternatives include parcel data, in which the boundaries of geographic units (e.g., property lines, residential units) are mapped, and address point data which places a single point at the centroid of a given parcel (Zandbergen, 2008).

This procedure has clear implications for the validity of the analyses presented here. In a comparison of the procedures, Zandbergen (2008) observed that street network data and address points tended to have higher geocoding match rates than parcel geocoding, but parcel geocoding was considered to be the most spatially accurate (Rushton et al., 2006). An exception to this was for addresses falling within multi-unit residential complexes, in which street geocoding is considered to be more accurate than parcel data. The sex offenders in our analyses often resided in addresses such as these. On the other hand, relevant to the purposes of the current analysis, street network data more often than not plots an address at the street centerline, meaning that residency restriction boundary measurements were made as 1,000 feet from the center of the street in front of the school or daycare center. In the study states, residency restrictions are enforced as the distance feet from the property line of the restricted addresses, meaning that parcel data would have been the most accurate method of plotting the restriction zones, had it been available.

To this extent, there is the potential for there to be measurement error concerning the extent of restricted property and the placement of sex offender addresses either inside or outside of those boundaries. In one sense, the analyses here may be an underestimation of the extent of addresses in violation, because if we were to have been able to use parcel data and measured the restricted zones as extending 1,000 feet from the property lines of each parcel, then the restricted boundary zones would be expected to expand and the number of violations would subsequently increase. The extent of this expansion is unknown as it would depend on the parcel size of each restricted address, which was not available.

There is also the potential for the extent of our violation rates to be an overestimate. Daycare licenses in each study state are issued by the government and valid for a set period of time. We extracted daycare addresses during the post-restriction period so that we could be reasonably sure that those licenses were active when our post-restriction sex offender cohorts were on parole. We also updated this address information annually to account for changes in day care facilities, but there is concern that the location of many small private day care facilities change on a daily basis – this is particularly the case for urban areas. There is the potential, however, that some of these daycare centers were not actually active during the post-restriction period and thus would not actually have constituted a restricted area. Similarly, some of the sex offender addresses that fell within 1,000 or 500 feet of a restricted address may have been a

special case, such as a non-residential address (e.g., hotel commonly used for transitional housing, treatment center, etc.). We conducted sensitivity analyses (not shown) that excluded these addresses from the analysis. When these non-residential addresses are removed the violation rates decreased slightly, but not in a statistically significant manner. In essence, there are several alternative explanations that could potential bias the validity of our violation rates, or at least necessitate a conservative interpretation of our results.

Recidivism Models

The goal of this phase of the analyses is to consider the change in recidivism patterns before and after the implementation of residency restrictions. As such, we estimated a series of recidivism models. First, we considered if the levels of recidivism and the nature of the criminal event vary significantly between the pre and post-restriction sample. Recidivism models are also conducted for the comparison samples to gain better perspective on the magnitude of the differences between the sexual and non-sexual offender groups. In all of the models estimated, special attention is paid to recidivism events that were sexual in nature.

Bivariate Analyses

The first set of analyses conducted compares the unconditional mean differences in recidivism rates between the pre-residency restriction and post-residency restriction cohorts of sex offenders and non-sex offenders. We use independent sample t-tests to consider differences in the two-year recidivism rates. The results of these analyses are displayed in Table 13 and 14.

The results in Table 13 for the Michigan sample indicate that there was only one statistically significant difference in the two-year recidivism rates between the pre-restriction and post-restriction sex offenders. Specifically, a slightly larger proportion of post-restriction sex offenders were rearrested, for any crime, within two-years, relative to the pre-residency restrictions cohort (Pre - 14.4% vs. Post - 17.5%). On the other hand, there was an unexpected difference between the non-sex offender cohorts. The two-year rate of technical violations for non-sex offenders decreased from 13.4% in the pre-restriction period to 8.8% in the post-restriction period.

One reason for the lack of an observed statistically significant difference in the two-year sex offense recidivism outcomes (reconviction and rearrest) in Michigan may be due to the small number of eligible events. There was a total of seven sex offense recidivism events (i.e., reconvictions and rearrests combined) for the non-sex offender comparison group (5 pre-restriction and 2 post-restrictions), and a total of 22 recidivism events for the sex offender cohorts (14 pre-restriction and 8 post-restrictions). These small totals make the detection of statistically significant effects untenable.

In Missouri, the rates of technical violations declined in the post restriction period for all offenders; however, the decline was greater for non-sex offenders (see Table 14).^{xv} The levels of

reconviction also declined significantly in the post-restriction period for the sex offender sample. Reconvictions for sex offenses did decline during the post-restriction period, but the difference was not significantly different. In Missouri, 19 individuals released during the pre-restriction period and 13 offenders paroled post-restriction were reconvicted of a sex offense. It is notable that nine of the rearrests in the pre-restriction period were for offenses involving children under 15, and only two arrests in the post-restriction period were against young children. The differences between these groups approach statistical significance ($p = .06$). The low base rate of sex offending is common among studies of this type, so the results are consistent with the extant literature (Hanson & Bussiere, 1998).

Table 13. Michigan: Two-Year Recidivism Rates for Sex Offenders and Non-Sex Offenders, Pre- and Post-Residency Restrictions, (N=3,406).

Outcome	Non-Sex Offenders (N=1,703)		Diff.	Sex Offenders (N=1,703)		Diff.
	<u>Pre Restrictions</u>	<u>Post Restrictions</u>		<u>Pre Restrictions</u>	<u>Post Restrictions</u>	
Technical Violation	13.4%	8.8%	-4.6%*	21.2%	21.2%	0.0%
Reconviction	2.7%	4.0%	1.3%	2.5%	5.5%	3.0%
Rearrest	21.2%	25.5%	4.3%	14.4%	17.5%	3.1%*
Sex Offense Conviction	0.0%	0.0%	0.0%	0.4%	0.8%	0.4%
Sex Offense Rearrest	0.2%	0.6%	0.4%	0.7%	1.3%	0.6%

Note: Mean difference statistical significance assessed with independent samples t-tests. *p < .05, **p < .01, *p < .001**

Table 14. Missouri: Two-Year Recidivism Rates for Sex Offenders and Non-Sex Offenders, Pre- and Post-Residency Restrictions, (N=4,489)

Outcome	Non-Sex Offenders (N=2,224)		Diff.	Sex Offenders (N=2,265)		Diff.
	<u>Pre Restrictions</u>	<u>Post Restrictions</u>		<u>Pre Restrictions</u>	<u>Post Restrictions</u>	
Technical Violation	38%	17%	-21.0%***	28%	17%	-11.0%***
Reconviction	8%	8%	-0.5%	8.0%	7%	-1% α
Sex Offense Conviction	0%	0%	0%	2%	1%	-0.5%

**Note: Mean difference statistical significance assessed with independent samples t-tests.
 α < .10, *p < .05, **p < .01, ***p < .001**

Multivariate Analyses

The previous bivariate analyses examine unconditional mean differences between the pre-restriction and post-restriction groups. While we did use propensity score matching to best equate our sex offender cohorts to the non-sex offender comparisons, the pre-restrictions and post-restrictions samples still differ on several covariates. To correct for these imbalances, we conducted two sets of multivariate analyses examining the effect of residency restrictions on the likelihood of recidivism and the timing of recidivism events.

Likelihood of recidivism.

Our first set of multivariate analyses utilizes logistic regression to examine the effect of residency restrictions on general recidivism outcomes, independent of control variables. The results of these analyses are displayed in Tables 15 and 16.

In Michigan, residency restrictions were not associated with any statistically significant decreases or increases in two-year recidivism outcomes for the sex offender cohort, net of controls. This indicates that the increase in rearrests observed in the bivariate analyses was mediated once the effect of control variables was considered. On the other hand, consistent with the bivariate analyses, the logistic regression models indicated that residency restrictions were associated with a significant decrease in the likelihood of non-sex offenders receiving a technical violation (OR = .58, $p = .01$). Because of the small number of sex offense recidivism events, we produced models only for the general recidivism measures.

Table 15. Michigan: Logistic Regression of Residency Restrictions on Two-Year Recidivism Outcomes (N=3,406).

	Technical Violation		Reconviction		Rearrest	
	OR	P Value	OR	P Value	OR	P Value
<i>Non-Sex Offenders</i>						
Post-Restrictions	0.58	.01*	0.79	.50	0.86	.35
<i>Sex Offenders</i>						
Post-Restrictions	0.87	.35	1.64	.11	1.04	.84

Note: All models control for months incarcerated, juvenile record, previous adult probation terms, prior misdemeanors, general prison misconducts, and sexual prison misconducts, offender age, female, non-white, marital history, and education. Sex offender models also controlled for victim age.
 OR = Odds Ratio
 * $p < .05$; ** $p < .01$; *** $p < .001$

Several significant effects emerged in Missouri. Consistent with the bivariate analyses, sex offenders and non-sex offenders in the post-restriction sample were less likely sustain a technical violation in the two years following release than the pre-restriction sample, and the difference was statistically significant. The size of the odds ratio statistics suggests that the decline for the non-sex offender sample was larger than the sex offender sample. No differences emerged in terms of reconviction.

Table 16. Missouri: Logistic Regression of Residency Restrictions on Two-Year Recidivism Outcomes (N=4,489).

	Technical Violation		Reconviction	
	OR	P Value	OR	P Value
<i>Non-Sex Offenders</i>				
Post-Restrictions	0.40	.00***	0.90	.55
<i>Sex Offenders</i>				
Post-Restrictions	0.56	.00***	0.58	.92

Note: All models control for months incarcerated, prior convictions, general prison misconducts, and sexual prison misconducts, offender age, female, non-white, marital history, and education. Sex offender models also controlled for victim age.

OR = Odds Ratio

*p < .05; **p < .01; ***p < .001

Timing of recidivism.

Our second set of multivariate analyses utilized Cox proportional hazard models – or survival analysis – to examine the association between sex offender residency restrictions and the timing of recidivism events. The results of these analyses are displayed in Table 17 and 18.

In Michigan, the Cox proportional hazards models highlight several meaningful differences from the previous bivariate and logistic regression analyses. Namely, two statistically significant effects emerged. Sex offenders released in the post-residency restriction period were reconvicted for general offenses more quickly than the pre-residency restriction sex offender cohort. The opposite effect was observed for the timing of rearrests. Sex offenders released in the post-residency restrictions period took significantly longer to be rearrested, relative to sex offenders released in the pre-restriction period (HR = .78, p = .01). No significant differences emerged for the non-sex offender analyses.

Table 17. Michigan: Cox Proportional Hazard Models of Residency Restrictions on Recidivism Outcomes (N=3,406).

	Technical Violation		Reconviction		Rearrest	
	HR	P Value	HR	P Value	HR	P Value
<i>Non-Sex Offenders</i>						
Post-Restrictions	0.69	.06	0.93	.83	0.87	.16
<i>Sex Offenders</i>						
Post-Restrictions	0.99	.93	1.91*	.02	.78*	.01

Note: All models control for months incarcerated, juvenile record, previous adult probation terms, prior misdemeanors, general prison misconducts, and sexual prison misconducts, offender age, female, non-white, marital history, and education. Sex offender models also controlled for victim age. There were too few sex offense recidivism events to conduct a Cox model of these outcomes.
 HR = Hazard Ratio
 *p < .05; **p < .01; ***p < .001

In Missouri, the timing of a new technical violation was delayed in the post-release period. Sex offenders in the post-restriction period also had slower rates of new convictions. No differences in the reconviction timing patterns were observed for non-sex offenders.

Table 18. Missouri: Cox Proportional Hazard Models of Residency Restrictions on Recidivism Outcomes (N=4,489).

	Technical Violation		Reconviction	
	HR	P Value	HR	P Value
<i>Non-Sex Offenders</i>				
Post-Restrictions	.51	.00***	.84	.15
<i>Sex Offenders</i>				
Post-Restrictions	.63	.00***	.76*	.04

Note: All models control for months incarcerated, juvenile record, previous adult probation terms, prior misdemeanors, general prison misconducts, and sexual prison misconducts, offender age, female, non-white, marital history, and education. Sex offender models also controlled for victim age. There were too few sex offense recidivism events to conduct a Cox model of these outcomes.
 HR = Hazard Ratio
 *p < .05; **p < .01; ***p < .001

Qualitative Results

In addition to the quantitative analyses of official data, we conducted a series of interviews with sexual offenders and the control sample to better understand the consequences of residency restrictions for housing prospects, employment, maintenance of social relationships, and quality of life. This section primarily recounts the unique effect of residency restrictions on reentry outcomes, but we also indicate salient differences in the collateral consequences for the non-sex offender sample when appropriate.

Descriptive Statistics

The qualitative sample consists of 193 individuals. In total, 65 sex offenders and 30 non-sex offenders were interviewed in Michigan, and 76 sex offenders and 22 non-sex offenders from Missouri.^{xvi} Descriptive statistics are provided in Table 1 and 2. In general, sex offenders are older, more likely to be white, and moved more frequently than non-sex offenders. Employment was measured by full or part-time employment at the time of the interview. Offenders were also asked if they had experienced discrimination as part of the employment process. Residence refers to where offenders lived at the time of the interview.

Participants

Michigan Sample

Table 19 displays descriptive statistics for the Michigan sample. The sample is all male and the interviews were conducted at parole offices in different areas of the state. The participants averaged 41 years. The sex offender interview sample was significantly older (43.7) than the non-sex offender sample (34.5). Slightly more than half (N=51, 53.7%) of the sample had a prior criminal history in addition to the offense for which they were currently on parole. Of the 65 sex offenders interviewed, 38 percent (N=25) had committed their offense against a victim under the age of 13. Very few sex offenders reported being married, though more sex offenders than non-sex offenders reported having children. Sex offenders reported living in transitional housing more often than non-sex offenders. Fewer sex offenders reported a history of drug use, but more physical abuse and mental health issues than non-sex offenders. Finally, sex offenders were less likely to be rearrested but more likely to return to prison. Information on technical violations is not available for the Michigan sample.

Table 19. Michigan Interview Sample Descriptive Statistics (N = 95).

Variable	Sex Offenders (N = 65) Mean (SD) /Percent	Non-Sex Offenders (N = 30) Mean (SD) /Percent
Age	43.75 (12.66)	34.53 (10.73)
Male	100%	100%
Black	31%	43%
Education (Years)	12.23 (2.65)	11.27 (3.26)
HS Grad or GED	86%	88%
Number of Prior Incarcerations	0.55 (1.23)	0.43 (0.63)
Interview Location <i>Office</i>	100%	100%
Relationship Status		
<i>Married</i>	5%	20%
<i>Partnered/Dating</i>	19%	33%
<i>Single</i>	46%	40%
<i>Divorced</i>	30%	7%
Employed	35%	30%
<i>Full-time (Of those employed)</i>	44%	33%
<i>Part-time</i>	56%	66%
<i>Discrimination</i>	48%	50%
Resides		
<i>Self</i>	28%	10%
<i>Family</i>	25%	77%
<i>Partner</i>	5%	10%
<i>Friend</i>	1%	0%
<i>Transitional Housing</i>	41%	3%
Location		
<i>Metro-area</i>	32%	33%
<i>Urban</i>	35%	33%
<i>Rural</i>	32%	33%
Number of Moves	0.83 (0.86)	0.40 (0.86)
Children	73%	60%
<i>Number of Children</i>	2.08 (2.52)	1.17 (1.29)
<i>Pays child support</i>	30%	23%
Offense against a minor	38%	--
History of Drug Use	63%	70%
History of abuse	53%	10%
Mental Health Issues	50%	41%
Physical Health Issues	58%	56%
SO Treatment currently	87%	--
SO Treatment while in Prison	100%	--
Rearrested since Interview	6%	37%
Returned to Prison	18%	7%

Descriptive statistics for the Missouri sample are presented in Table 20. This study used a sample of sex offenders (n=76) supervised by the Missouri Department of Corrections. All sex offenders in this sample were required to abide by the residency restrictions and were listed in the state sex offender registry.

Missouri Sample

The Missouri sample is mostly male but included four females. We specifically sampled offenders residing in transitional housing and prisons, so interviews took place at parole offices, community release centers, and one prison. Missouri sex offenders were far less likely to be employed than non-sex offenders. Sex offenders were more likely to have offended against a minor than the Michigan sex offenders. In general, the Missouri sample had a higher average number of incarcerations, and lower levels of having a high school diploma or GED than those in Michigan. Finally, sex offenders incurred technical violations more often than non-sex offenders. Unfortunately, re-arrest data for the sample and reimprisonment data for non-sex offenders are unavailable.

	Sex Offenders (n=76)	Non Sex Offenders (n=22)
Variable	Mean (SD) /Percent	Mean (SD) /Percent
Age	41.47 (13.18)	34.95 (10.28)
Male	96%	95.5%
Black	28%	64.7%
Education (Years)	12.12 (1.66)	11.23 (1.57)
HS Grad or GED	59%	40.9%
Number of Prior Incarcerations	1.79 (1.14)	2.07 (1.02)
Interview Location		
<i>Office</i>	40.2%	57.1%
<i>Release Center</i>	25.7%	28.6%
<i>Prison</i>	23.5%	14.3%
Relationship Status		
<i>Married</i>	18.6%	9.1%
<i>Partnered/Dating</i>	17.5%	18.2%
<i>Single</i>	42.3%	63.6%
<i>Divorced</i>	21.6%	9.1%
Employed	68%	95%
<i>Full-time</i>	84.8%	66.7%
<i>Part-time</i>	15.2%	33.3%

<i>Discrimination</i>	68%	80%
Resided with after release		
<i>Self</i>	3.1%	0%
<i>Family</i>	51.5%	59.1%
<i>Partner</i>	12.4%	4.5%
<i>Friend</i>	3.1%	4.5%
<i>Transitional Housing</i>	27.8%	31.8%
Resides with currently		
<i>Self</i>	8.3%	0%
<i>Family</i>	36.5%	38.1%
<i>Partner</i>	19.8%	19%
<i>Friend</i>	3.1%	9.5%
<i>Transitional Housing</i>	24%	23.8%
Location		
<i>Urban</i>	50%	63.2%
<i>Suburban</i>	3.7%	5.3%
<i>Rural</i>	46.3%	31.6%
Number of Moves	1.08 (1.45)	.73 (.88)
Children	72%	86%
<i>Number of Children</i>	2.82 (1.54)	2.32 (1.45)
<i>Pays child support</i>	41%	50%
Offense against a minor	69.7%	--
History of Drug Use	75%	95%
History of abuse	46.1%	--
Mental Health Issues	40%	29%
Physical Health Issues	30%	18%
SO Treatment currently	71%	--
SO Treatment while in Prison	87%	--
Violated Supervision	51%	41%
Returned to Prison	25%	--

Collateral Consequences of Residency Restrictions

Frequencies and percentages of the themes presented in this section are located in Table 21. Sex offenders were asked questions regarding challenges upon returning to the community related to housing, employment and family. Offenders were asked to describe if they had problems finding housing, experienced relocations, or resided in transitional housing. Offenders were also asked if they faced challenges finding employment and were asked to discuss the nature of their family support and detailed any disruptions they had to their family unit due to the restrictions.

Table 21. Missouri (N=76) and Michigan (N=65) themes and subthemes (total N=141) Sex Offender Sample				
Theme	Missouri	Michigan	Total	Percent
<i>Consequences</i>				
Housing Challenges	56	57	113	80%
Frequent Moves/Forced to Move	32	25	57	40%
Undesirable Location/Transitional Housing	30	36	66	47%
Employment challenges	57	65	122	87%
Family Disruption	26	25	51	36%

Housing Challenges

Offenders often rely on family and friends to provide or secure housing when they return from prison (Naser & LaVigne, 2006). Most sex offenders in this study (80%) provided statements about the challenges they faced when looking for housing within the residency restriction laws. Offenders reported separation from family, being restricted from housing locations because they were near schools, parks or daycares (common in major cities and rural areas), and multiple moves. The following narratives illustrate some of the specific challenges faced by offenders returning to communities in Missouri and Michigan.

Most commonly, sex offender residency restrictions preclude sex offenders from residing within 500 to 1000 feet of a school, park, or daycare. This type of displacement occurred in over half of cases (53%). Arthur, who served seven years in prison for statutory rape, specifically discussed challenges with daycares:

Everything I turn in gets denied, and I don't know, you know, I find things that I can afford and fit in my budget, and close to work, and all this that would help, you know, and it gets shot down because you know some yahoo put a daycare in within a thousand foot [sic], and chances are it might not be there a month from now, but at the time there's one there. Which it wasn't there before, but now it is. And you know I put his [friend's] place in as a home plan. Well there's almost, or right at like 900 foot there's a daycare that sits way off in the back. Can't do that.

Jose served 24 years in prison for forcible rape and experienced challenges with the additional restrictions enacted by local municipalities. Jose stated:

I got a sex offense, by sex offense we have limitation on where we can stay. I think its 1000 feet from this, 1000 feet from that. That's the policy and by doing that you gotta

pick and choose the house you want to, and the area you wanna stay in. You know certain counties they jump to 2000 feet. They just don't want you out there.

In Roman's case, his parents bought a new house prior to his release from prison where he was serving time for criminal sexual conduct with a minor, with the understanding it was within the guidelines. However, the Department of Corrections measured the distance differently than city officials:

My parents bought a house and we cannot even get the exact range from anybody. The city engineer said it is like a thousand ninety feet from a high school but they say it is nine hundred and ninety two or something like that. I can't live with them.

Dean, who was convicted of criminal sexual conduct with a minor, planned to return to his pre-prison residence, however it violated the residency restrictions laws. He experienced trouble finding housing that was not near a park even though some of the parks were defunct:

When I got released, I thought I was getting released to my own home placement. But it all got reversed on me because the home placement I was going to, it was within distance of a school. I was going to my sister's home. Which is right at the park. The park is really not in workable order, but it was right at the park area. You know what they do? There's a lot of [parks] which are no longer in existence, but because they still show up on the computers or whatever that they're schools or they're parks. It's harder for a guy to get placement because of that. You know, like for instance, you could stay within 500 feet from a school, you know what I mean, but because it's not 1000 feet – the school may not even be in operation. And it's like, that's how a lot of guys get, their home place don't get approved because of that.

Carl, who was released after serving 13 years in prison for forcible sodomy, was in the process of buying a house with his new wife when he was informed that it was located within the 1,000 foot restriction in their rural town:

We were actually in the process of signing papers and closing on the home, and what the PO said was we were clear on it, and then right before we finalized it all, we found out from Sheriff's Department that it was 538 feet to a daycare.

Carl stated how frustrated he was with having to restart his house search because of the restrictions. When asked if the next house search was just as difficult Carl stated, "No, because we made it a point to find something out of town."

Victor agreed that moving to a rural location would avoid concerns with the residency restrictions. Victor served three years in prison for statutory sodomy, and was released on parole:

With all the regulations rules stipulations on sex offenders it's easier to live in a rural area without having to worry about who you might be offensive to because you live too close to them. Because society in general just looks at all of us as one group or type of people and they tend to not look at the person individually; or look at if they improved their lives or took programs that change yourself or anything like that. In the rural you really don't have as many people to deal with most everybody where I'm going to knows everybody so we all have known each other for a while. I still talk to them on a daily basis a lot of them.

As a result of the housing challenges faced due to the residency restrictions, many offenders reported residing in a transitional housing facility upon release from prison. Transitional housing in both Missouri and Michigan consists of state operated and contracted facilities where offenders reside while they seek suitable housing. State operated facilities resemble dormitory style facilities with correctional staff, while the contracted housing might consist of a hotel or house with up to six offenders residing there. Oscar explained how he and other sex offenders had resided in the transitional housing facility for several years, even though program is intended for three to six months:

I've been here [transitional housing facility] a year and over six months. Because I can't get out into the community by not staying by a school or daycare or whatever or whatnot. That's all everywhere there are schools and daycares, it's everywhere you know? What they want me to do? Move out of the United States or something?

Mickey also felt his re-entry to the community suffered because he had to reside in a transitional housing facility, which he felt resembled prison. Mickey served 20 years in prison for criminal sexual conduct in the second degree:

I still feel institutionalized because I feel like, you know, even though I had this little bit of freedom, that it was just dangled out in front of me and I never really could grasp it because I am still in this dormitory style type setting with a bunch of other guys which is the same way it was in prison. So I never felt like I had made the complete transition. It was kind of traumatic to leave from that situation when you are thinking that 'Ah, parole, I made it'. But then you get out and you feel like 'I really didn't make it, you know.'

Shane, who served over seven years in prison for criminal sexual conduct with a minor, also wished he could live with his family, but restrictions against living in the home with minors meant he had to stay in the transitional housing facility. Shane highlights how living with his family would help his re-entry to the community:

If I could live with my family, I'd be good right now. They could clothe me, feed me, heat me, water, gas, electric, keep me busy, I'd be home. I might fix the car, change the oil, whatever, cut the grass, give me stuff to do. I'd be happy, I'd be free. I'm in a cage right now.

While stable housing is one of the most important factors in successful reintegration, many sex offenders experienced disruption in their housing plans. As a result of residency restrictions, many sex offenders experienced difficulty returning to family because of minors in the residence, relocation due to residing in restricted areas and increased placement in transitional housing. Additionally, sex offenders described the diminished quality of life because they could not reside with family or were required to reside in transitional housing facilities.

Family and Social Relationship Consequences

As a condition of probation or parole supervision, most sex offenders are restricted from contact with minors. Many sex offenders also discussed specific limitations relative to spending time with their own children due to the residency restrictions. Justin was on parole for sexual abuse (after spending 11 months in prison) and could not attend school performances for his daughter without express permission to do so because of the residency restrictions. Justin stated: "My daughter, she sing in a choir in school and I can't go there unless I have permission from the principal or my parole officer." Martin, on parole for statutory rape in the second degree and deviate sexual assault, described how he could not take his sons to school because of the laws:

If they're at school and there's nobody to pick them up, I can't go pick them up and that makes it hard for, basically for everybody. My youngest son's in daycare so if we have something that's going on where we've got to swing by and pick him up before we go do whatever or swing by the elementary school to pick up my son, I can't be in the car when they go pick him up.

Some offenders referenced the inability to participate in recreational activities, such as playing sports or volunteering, because these often take place at schools or parks. Ronald, who was on parole for sexual abuse of a minor, could not use his boat because the lakes in Missouri are considered parks, from which he is restricted:

The only hassle I have is when I want to put my boat in the water, because sometimes I have to go to a park to do it. There's boat docks all around the country that there's nothing there. I'm sure that if I went to my parole officer and said 'look I want to put my boat in the damn water down here, I'm gonna park my car or truck or whatever I'm pulling it with, is that okay?' we'll make a safety plan, and go! So there's the right way of

doing it, so we can get around a lot of restrictions, but it's still the idea that the restriction's there. And I think that some of this stuff, I understand why it's there, I understand it's my fault, if I had done right, I wouldn't be in this position, and I accept the restrictions, you know?

Employment Consequences

Residency restrictions presented additional employment challenges for sex offenders. Most sex offenders (89%) and almost half of non-sex offenders (48%) reported employment challenges.

Sex offenders detailed how restrictions kept them from working in industries they had once been employed in, such as transportation or construction. Hector stated, "I can't do landscaping, I can't do lawn service, I can't do like, construction, maybe, cause you never know what area you're gonna be in, it might be a school or a park around that." Sergio, who served seven years for criminal sexual conduct in the first degree, discussed:

The biggest pain that I can see with the residency restrictions is you're not able to not only live within a school zone, you can't even work within a school zone. So that kind of has a tendency to limit your jobs that you do. It also limits if you would do any type of landscaping or residential because, granted...I don't know if this person, if I'm going to go do landscaping at this person's house does this person have kids. Does this person have guns? You just don't know, so it really limits what you can do and what you can look for.

Jay also described the difficulty in working at his roofing business because of the restrictions. He discussed how he has to know in advance if the house he might be working on is within the sex offender restrictions, I'll drive around, that house needs a roof, let's go knock on their door. Is there a school out back, I don't know? I'm in violation of my parole now." In one instance, Jay had a job scheduled and was told by his parole agent it was not acceptable and he responded in a destructive way:

They were gonna pay me \$20 an hour. So I come back here and tell my parole agent that and she said you can't work there, and I was like why? She said because Holiday Inn is over there and they got a swimming pool. And it's within 1000 feet. And I was like dude, that's three quarters of a mile. Don't matter, the property line of the Holiday Inn came up to that. That day, I went and bought a bunch of cocaine and said 'fuck-it'.

Carl could not perform certain duties for his job because it involved delivering items to schools: "I actually deliver to some bus barns that are school bus barns, and there are certain ones I can't go to because they actually in the school. I have deliveries to schools I cannot make because

they're schools.” Shane learned that delivering for his family’s pizza business put him in violation of the residency restrictions, even though he was being monitored by GPS^{xvii}:

My cousin opened a restaurant...he’s like you can deliver pizzas for me. I tell my PO, not this one my other one, and he’s like I can’t have you delivering pizzas cause I don’t know where you going. You might be delivering to a school. It’s always negative with them, always negative. Yeah, it might be times when we have to deliver to a school, I understand that. I’m not living by a school, I’m not staying at the school, but drop it off, get the money and leave. With the GPS, what is this doing for us? This ain’t pushing us forward, it’s pushing us backwards. Every time you turn around, they give you this big ol’ box so the community can see that he’s a sex offender.

Perspectives on Residency Restrictions

Sex offenders in this study were specifically asked for their perspectives on the residency restriction laws. Table 22 displays these themes. Offenders were first asked if they knew about the residency restriction laws, then asked to discuss their thoughts and opinions on them. The foremost theme present in the interviews was whether offenders felt the laws were fair or unfair. Offenders were also asked if they felt the laws were effective and a deterrent for sexual offending. Two additional themes emerged during the analysis. First, sex offenders felt they were included in a single sex offender category based upon the stereotypical sex offender. Second, offenders often discussed their opinions in terms of the “situational other”, where the men effectively distanced themselves from their own offenses by appealing to depictions of other offenders whose crimes were worse than their own. This distancing technique was used to further a case that they were not a stereotypical sex offender. In addition, some opinions provided by non-sex offenders are included where they are relevant.

<i>Theme</i>	Missouri (N=76)	Michigan (N=65)	Total (N=141)	Percent
Unfair	45	28	73	51%
Fair	24	41	65	46%
Situational Other	30	29	59	42%
Single Sex Offender Category	28	26	54	38%
Deterrent	6	14	20	14%
Ineffective	5	11	16	11%

Many offenders (80%) gave lengthy, detailed perspectives on the residency restriction laws. Some noted the utility of the laws for some offenses, but felt that they were misapplied in other cases. The offenders critiqued the “blanket nature” of sex offense legislation, and some respondents felt that laws should be applied on a “case-by-case” basis (38%). Members of the sex offender sample indicated that the stigma of the legislation affected their confidence and self-esteem. In a few cases, offenders saw the laws as helpful by providing boundaries and protecting them from future sex offending or other trouble with the law. Some offenders questioned how the laws and policies could help them in the face of a myriad of re-entry challenges. The following illustrations detail the nature of the sex offender perspective.

First, many offenders described how unfair it seemed that sex offenders are subject to many restrictions while other felons are not. Donald, who was on parole for child endangerment after serving two years in prison, provides a good example:

When I look at the laws, they're hypocrites. They open a book of laws, and they kind of closed their eyes and touched down and go this is the one we're gonna enforce. I believe a felon is a felon regardless. I believe if there's a registry, that registry should run for all felons, not just a sex offender. I mean, they do the research, they find out that sex offenders have the lowest recidivism rate, they had the lowest recidivism rate of people committing new offenses. All this, I mean, you have a small percentage of people that do it, it's gonna be the same as you going to someone who's doing dope and they clean up, they still have a chance that they're gonna go back on the dope. But they could live wherever they want. They have it set up now where Charles Manson is a nicer person than a sex offender. That's one of the problems I have. Blanket classification...you, if there's a person that commits a sex offense on three, four year old child and the person commits a second offense on a seventeen year old person. Even though it's still a sex offense, there's still a difference in the offense. And when they drop that blanket, we're gonna make them the same, they all have to do the same and I disagree with that

Mickey also felt the laws were unfair and widened the net for offenders, as well as the documentation of sex offender personal information potentially creates a dangerous situation:

I think it is a mockery. I think that you created a whole new population of people that you are not prepared to deal with at all. How can you create this population? If you are not going to remove them completely from society or off of the planet, just what the hell are you going to do with them after you create this leper colony? I mean how...I mean do we still come up under the constitution? Do we still have the same rights as other folks? Do we need a whole new constitution for us? There are so many ramifications behind that, not to mention putting people's lives in danger you know...if a fanatic decides that he doesn't like the fact that I am a sex offender and I am in his neighborhood and he decides to 'ok I'll take matters into my own hands, I am going to go down there knock on the

door and blow his head off...’ you know I mean I think about that kind of stuff sometimes.

The most common reason offenders gave for why the laws are unfair is all sex offenders are treated as a having committed the same level of sex offense. One third of this sample (38%) felt the punishments and restrictions should be tailored to the individual case. Roger, on parole for forcible rape and forcible sodomy after serving 13 years in prison stated, “I think it should be a case by case basis. That’s the way they should look at, instead of trying to lump everybody into one category.” Eugene was on parole for sexual assault as well as domestic assault, and served 18 months in prison, and stated:

We’re definitely the martyr as sex offenders. It pretty much comes down on our heads. It’s definitely negative and one sided especially since we are all considered the same. I was 18, my victim was 15, but I’m treated the same as the guy whose 65 and molested his three year old granddaughter. So basically I am considered a child molester and I’m not. I think it should be with the crime that you committed, there should be a set standard of rules for that. My victim was 15; I can see the school thing. But I can’t go to the park? My girlfriend has a kid, I have a kid. I have to have a supervisor to see my kid.

While many offenders felt the laws were unfair, many thought they did serve a useful purpose. Tyrone, who served almost four years in prison for criminal sexual conduct, stated:

I think its pros and cons to those laws. I think sometimes it's good because it keeps structure in a person that's on parole because if a person that committed a [sex offense] and he might have snatched a kid out of a park and that might be a good situation because you keeping that person away from a park or a school so he won't be tempted to even do that, commit that crime again. As far as some people that commit [sex offenses] on adults, they might have that stipulation, but I feel like that stipulation shouldn't be applied to them because it wasn't against no child. I was a teenager when I did commit my crime, I was still in high school and my victim was in high school too so it was like, I feel like that shouldn't be applied to me because I'm way older, I'm older and I know I'm not, that's not no temptation for me not to go to a park and snatch a kid out of the park... But I mean certain things, certain stipulations I feel like should apply to me that I think that should keep me, it would keep me structured and it would keep me away from those things...

Like other offenders in this study, Tyrone chose to contrast the particulars of his offense (i.e., “I was still in high school and my victim was in high school too...”) with those of a stereotypical child sex predator (i.e., “he might have snatched a kid out of a park”). Chuck also felt the laws served a purpose but were problematic for him. Chuck was released on parole after

serving 13 years for criminal sexual conduct with a minor. When asked if the laws were fair he stated:

In a way, yeah, and in a way, no. It makes it harder for the person to be able to find a place to live, especially if ain't got no car, no driver's license or nothing like that. In a way I figure, yeah, it's fair, especially if you're out there grabbing a hold of little kids and stuff like that. Some of these guys just don't get the picture.

Offenders also felt that the residency restriction laws are at odds with rehabilitation.

Willie discussed the lack of assistance in dealing with the laws, specifically in finding employment and housing:

You know, your thing is to be re-integrated back into the community, back into society. But at what level or what point can you begin to ever feel normal? I think that if they're gonna put you out here like that, then they need more things to address, the types of crimes, these types of crimes. They need more for people who are sex offenders. How can you help me get on my feet? What are you doing as far as housing for me? You know, how are you helping me find employment?

Some offenders (11%) specifically discussed how the laws do not serve as a deterrent for sexual offending. Carl also felt the laws were a result of public outcry:

I think there are too many laws now that are a result of trying to appease the public, rather than trying to accomplish helpful goals for people being released. I think the 1000 foot rule is stupid just because whether I live 1000 feet or 1100 feet, neither one of those are gonna deter me, whether I offend again. My actual offense did take place on school property, if you take that factor out, I was still going to offend, I wanted to offend, whether there was a school involved or not, it was a choice I was gonna make. You can put me 3000 feet away from a school, if I want to offend, I'm gonna find a way to do it. Even if I have to go to the school and do it. Basically, if you're wanting to commit a crime that involves abusing somebody and the consequences of that don't slow you down, then oh my God, what are you gonna do to me if I'm 200 feet from a school? If the consequences of the sex offense don't slow you down, the consequences of the 1000 foot rule isn't going to slow you down. That's just a, it's a stupid [rule].

Regardless of negative perspectives of the laws, many offenders (46%) felt the laws are fair and serve a purpose. Rudy stated, "I mean it's fair because the crime is the crime at any time. It's fair...they're written to protect." Derek, who served over six years for criminal sexual conduct in the second degree, stated, "Yes they are very fair. I was the one that committed the crime, they didn't commit the crime...the people that write the law did not, they are protecting the community."

Non-sex offenders were also interviewed about the restriction laws. Many non-sex offenders felt the residency restriction laws were fair (46%). For example, Trevor, who was on parole for possession of a controlled substance, said: “I think they deserve it because...that’s one thing I don’t like is pedophiles who mess with young people. They knew what they was doing.” Some offenders reflected the typical stereotypes. Shawn, on parole for domestic assault, stated: “You got a predator out here, that preys on children. He’s the worst kind of person to be in a neighborhood. Cause we...fearing our child’s safety. We scared to let them go out and play.”

Seth, who was on parole for kidnapping, reasoned that the laws are important because they protect society from sex offenders.

I believe that they are justified. I mean, it’s just a way to protect and safeguard. Some people might try to reoffend like that, and some might not. So just to be sure, and if you’ve got to have it anyway, you might as well have the stipulation to not be so close to them. What’s a grown man or woman hanging around a school for if he’s not picking up his child anyway?

In contrast, 27% of non-sex offenders also felt the residency restriction hindered reintegration. Some non-sex offenders also felt that there should be differentiation among the sex offender groups. Leonard, who was on parole for attempted murder stated:

Sometimes I think that they’re doing those guys wrong. At the same time I’m saying, ‘man what you did is’...and they’re saying that no crime is worse than the other. It depends on what term a sex offender did. If you’re messing with a kid there’s something like that, I think you deserve everything that happens to you. If it was situation where this guy was 18 and his girlfriend was 16 and he got a sex crime because her mother got mad at him. Then I’m saying that you caught a bad break. Everybody on the block knows that there’s a sex offender living and then you term like this. That is hard for them people.

Offenders face many challenges when returning from prison. While all offenders in this study experienced difficulties securing housing and obtaining employment, sex offenders were presented with additional challenges because of the residency restrictions laws. Many sex offenders were unable to live with family because of the presence of minors in the home, or had to relocate because the residence was within the restricted zone. Sex offenders also faced the stigma of their offense during housing and employment searches. They detailed the ways in

which they were denied housing because landlords were wary of renting to sex offenders and lost jobs because employers did not want a sex offender on the payroll. Restrictions also added difficulties when securing employment because residency laws prohibited offenders from working in certain jobs, such as construction or delivery services. Sex offenders were also interviewed about their perspectives on residency restrictions. Despite the challenges faced by many due to the restrictions, sex offenders in this study were able to articulate clearly that the laws protecting society from predators are important, but they did not believe that the laws were appropriately applied to their own cases. In fact, most felt that since all sex offenders are ‘lumped’ into a single high-risk category, as a whole they suffer legal consequences that they feel are a disproportionate response to their own crime. However, a few offenders felt that the laws provided structure to their daily lives.

Discussion and Policy Implications

Summary

The report was designed to explore the effect of residency restriction legislation implemented in Michigan and Missouri. As described previously, the results from the research are complex. The first goal of the project was to document the housing locations of sex offenders. In the current study, residency restrictions did not significantly reduce the number of sex offenders who reside near schools or daycare centers. Although there was a decline in the number of individuals living in restricted areas following the implementation of the laws, less than one third of pre-restriction sex offender and non-sex offenders lived in restricted areas before implementation of the laws. In addition, the communities to which sex offenders return after the enactment of legislation appear to be structurally similar to the communities sex offenders were placed before the legislation. Similar trends were observed for non-sex offenders.

Overall, our aggregate analyses of residential patterns did not support previous research which suggests that residency restrictions would lead to large displacement of offenders. Two observations from supplemental analyses are particularly noteworthy and are related to the notion of residential displacement. First, sex offenders in both states who lived within restricted zones encountered higher levels of concentrated disadvantage than sex offenders returned to unrestricted areas. Consistent with previous research (Red Bird, 2009; Tewksbury, Mustaine, & Stengel, 2008), this finding highlights the continued need to consider not only where sex offenders return on parole but also the social and structural characteristics of communities.

Second, supplemental analyses in Michigan found that sex offenders – especially child molesters – moved more often relative to comparable non-sex offenders after the implementation of residency restrictions. The baseline of pre- and post-non-sex offender experiences is unobserved. These findings suggest that residency restrictions may indirectly contribute to increased housing mobility over time in Michigan.

The second phase of the research considered the occurrence and timing of recidivism. Overall, the findings suggest that if residency restrictions have an effect on recidivism, the relationship will be very small. In Michigan, trends indicate that this effect would lead to a slight increase in sex offender recidivism rates, while in Missouri this effect would lead to a slight decrease in sex offender recidivism rates. Unfortunately, bivariate and multivariate models

indicated that residency restrictions did not affect recidivism rates. There were no effects of residency restrictions on recidivism when rates were measured as reconviction on any offense or sex offense conviction. Technical violations were an exception to this generalized trend. The rate of recidivism for technical violations significantly decreased for Missouri sex offenders and non-sex offenders. Michigan non-sex offenders also experienced relatively small post-restriction recidivism reductions for technical violations. There were no changes in the rate of technical violation recidivism for Michigan sex offenders.

In addition to rates of recidivism, the timing to recidivism was also considered. The time to technical violation recidivism for both sex offenders and non-sex offenders in Missouri was significantly delayed following residency restriction legislation. The time to technical violation for Michigan sex offenders did not differ pre- and post-implementation of the law. The time to sex offender reconviction for any offense was significantly different after the enactment of residency restriction laws. In Michigan, post-restriction sex offenders were reconvicted much faster than pre-restriction sex offenders, while in Missouri post-restriction sex offenders took a longer time to be reconvicted. Michigan sex offenders were observed to experience delays in the timing to re-arrest for any offense after residency restriction legislation. There were no differences for non-sex offenders in the timing to reconviction in both states and re-arrest in Michigan.

Unfortunately, we were unable to examine differences in rates of sexual recidivism events – the explicit target behaviors of residency restrictions – because of a very small rate of occurrence. The low observed sexual recidivism rate may be a result of a combination of factors. First, although we utilized a large sample of sex offenders (N=3,968 between Michigan and Missouri), the distribution of sex offenders with child victims (i.e., victim under the age of 13) was relatively low compared to other analyses of sex offense recidivism. For instance, nearly 80 percent of the sample utilized by Veysey and Zgoba (2010) was comprised of such offenders.^{xviii} Because sex offenders with a history of sexual offending against children have relatively higher sex offense recidivism rates (Serin, Mailloux, & Malcolm, 2001), this aspect of our sample means that we have a depressed, but perhaps more representative, rate of sex offense recidivism. On the other hand, the small sample size of those who recidivated on a sex offense was so small as to impede the detection of statistical significance.

The results also indicate that a longer period of follow-up is needed. Because of the variable time of entry into the study between the pre-restriction and post-restriction cohorts there was a variable time at risk. We utilized Cox proportional hazard modeling to ease the equivalence of follow-up period used for recidivism rates. The two-year follow-up used for some of the analyses allowed sufficient time for technical violations, but other risks of recidivism manifest with longer time at risk. The sex offense recidivism literature has consistently noted that longer follow-up periods are necessary to provide valid indicators of the prevalence of sex offense recidivism (Soothill, 2010). Indeed, Prentky and colleagues (1997) observed that 30 percent of their sex offense recidivism events occurred after 5 years at risk. In this sense, our relatively short follow-up period may not provide the best indicator of the long-term effectiveness of sex offender residency restrictions in reducing sex offense recidivism,

The results of the qualitative analyses help to contextualize the quantitative findings. Although most offenders faced housing barriers, employment challenges, and stigma during the reentry phase, sex offenders spoke of several unique and multifaceted problems associated with maintaining compliance with residence restrictions. Most of the sample reported challenges obtaining housing, and more than half spoke of being displaced due to residency restriction boundary zones. Similar frustrations were shared with sex offenders who moved to rural areas. However, some sex offenders indicated that they chose to reside in or relocate to rural areas. It was assumed that such areas would provide an increased degree of autonomy that would ease the challenge of managing supervision conditions and sex offender status.

Sex offenders were more likely to parole to transitional housing facilities. Those who were placed to transitional housing facilities generally viewed this residence as being far from ideal. Sex offenders expressed frustration associated with blocked opportunities to reside in a location of one's choosing and the experience delaying the reentry process.

Residency restrictions posed significant employment challenges for sex offenders. Indeed, this challenge was identified as taking precedence over housing challenges among the sample of sex offenders. The primary theme expressed by sex offenders was the extension of residency restrictions to employment locations. That is, in addition to restricting residences near schools and daycare centers, residency restrictions limit employment opportunities near schools and daycare centers. In most instances where this theme was observed, sex offenders discussed how the residency restrictions would rule out the potential to work for a previous employer or

establish new employment in an industry they could easily obtain employment (e.g., transportation and construction).

The final theme that emerged from interviews related to the stigma faced by sex offenders. The relationship of residency restrictions to stigma perceptions was difficult to disentangle. Various levels of stress, fear, anxiety, humiliation, and self-initiated alienation appeared to be the result of “being a sex offender,” which is largely consistent with available qualitative research (Burchfield & Mingus, 2008; Tewksbury, 2012). All of the responsibilities that are associated with one’s sex offender status were discussed in a similar fashion; as a package of consequences. The extent to which residency restrictions further enhanced the stigma of sex offenders could not be determined.

This research adds to a growing body of knowledge that cautions the expansion of residency restriction legislation (see Nobles, Levenson, & Youstin, 2012; Levenson & Hern, 2007). It is anticipated that residency restriction policies would mitigate or reduce the risk of recidivism among sex offenders and limit or restrict access to potential victimization targets. The findings suggest that residency restrictions are unlikely to mitigate or reduce the risk of recidivism among sex offenders.

Policy Recommendations

As noted the effect of residency restrictions on sex offender residences and behavior is small, and there is evidence that the restrictions may further complicate the reentry process. As such, it is important to consider refining existing proposals to enact residency restrictions and modify current policies. Policy suggestions based upon the current research are noted below.

Reconsider Universal Application of Sex Offender Residency Restrictions

Residency restriction policies in both states were universally applied to all registered sex offenders. Residency restrictions are not tailored to individual circumstances or risk assessments. Moreover, restrictions are active throughout one’s supervision term. There is little doubt among sex offenders and non-sex offenders interviewed in this research that residency restrictions serve an important purpose for those individuals who are perceived to be serious sex offenders with offenses against child victims. However, the current policy appears to reinforce the perception of all sex offenders as being one type of offender – a child molester.

The revision of sex offender residency restrictions could be accomplished in a few ways. First, it would be appropriate to *consider the use of risk assessment instruments when implementing restrictions*. There are a considerable number of risk instruments available for use among correctional populations, many of which can be completed in a short period of time using only information from file reviews (Struder, Aylwin, Sribney, & Reddon, 2012). Recent evidence from meta-analyses suggests that the Static-99, the Static-2002, and the MnSOST-R are among the best supported actuarial instruments for predicting sexual recidivism (Hanson & Morton-Bougon, 2009). The Static-99 appears to be particularly accurate when applied to the long-term sexual recidivism of child molesters, as opposed to sex offenders with exclusively adult victims (Parent et al., 2011). Indeed, most sex offender recidivism risk assessments are more accurate when used with those offenders with exclusively child victims and are less useful for the prediction of behavior among individuals with adult victims (Parent et al., 2011). That said, risk analyses should be used in conjunction with correctional employee training and supervision. Actuarial scores do not provide information on the victim profile; therefore, specialized supervision schemes for certain types of offenders (e.g, pedophiles) may be warranted.

In addition, a tiered structure for the classification of sex offenders is mandated by the Sex Offender Registration and Notification Act (SORNA). It is not clear if these tiers would be useful for long-term risk classification. For instance, Zgoba and colleagues (2012) observed that for a multi-state sample of sex offenders Tier 2 SORNA offenders tended to have higher average Static-99R scores than Tier 3 offenders (i.e., the highest SORNA Tier). More research is needed to determine if higher tier SORNA sex offenders benefit more from residency restrictions, relative to lower tier offenders.

In addition, it may be useful to *evaluate the length of the residency restrictions*. Michigan and Missouri, similar to many other states, have legislation that mandates lifetime supervision for certain classes of sex offenders. An alternative approach would be to utilize time-ordered residency restrictions. This strategy can allow for enforcement of residency restrictions upon release. Compliance with supervision terms would allow for these restrictions to be scaled back to smaller restricted areas or removed altogether. Restrictions can be kept in place for those who are non-compliant and having difficulty managing the stress and strain of the transition process.

As informed by signaling perspective (Bushway & Apel, 2012), this approach can help to save system resources.

The length of residency restriction legislation could also be informed with the use of dynamic risk scales. The STABLE-2007 and ACUTE-2007 are designed to measure dynamic risk factors (i.e. access to victims, sexual preoccupations, and collapse of social supports) and can be used to monitor changes in risk over time (Hanson, Scott, & Helmus, 2007; McGrath, Cumming, Burchard, Zeoli, & Ellerby, 2010). Clearly risk classifications are not without problems. Any risk score used in a particular case can be imperfect and ignores facts that may be unique to that particular offender (Struder, Aylwin, Sribney, & Reddon, 2012). Risk assessment is also expensive and requires substantial training to be implemented correctly. Actuarial tools also do not provide information on the victim profile so active supervision by correctional staff is warranted. Overall, it is important to consider heterogeneity of sex offenders when developing public policy. The current policies were designed to block and/or deter offenders from contact with young children. Although this type of policy may be appropriate for offenders with child victims, less than one third of offenders in the study states were under the age of 15; therefore, it is not appropriate to expect that this type of policy will have a universal effect on all sex offenders.

Increase Housing Services for Sex Offenders

Establishing housing and maintaining a residence is an important factor in the transition process. From a theoretical perspective, housing provides the foundation for successful social relationships and reentry transitions, as success in employment and substance abuse and mental health treatment is often contingent on a secure, stable, and financially accessible residence (Padgett, Stanhope, Henwood, & Stefancic, 2011; Roman & Travis, 2004). However, 10% to 20% of offenders are released from prison without a home plan, though in some regions of the country, such as San Francisco or New York, anywhere from 30% to 50% of offenders are homeless (Petersilia, 2003; Roman and Travis, 2006; Rodriguez and Brown, 2003). *The provision of stable housing should be the central focus of reentry planning, particularly for sex offender populations.*

Although housing has been identified as a critical need for reentering inmates, few program models have been developed to address this gap in services. Programs like the

Returning Home-Ohio project have been shown to reduce recidivism among a general sample of parolees; however, this program was short term in nature and the nature of housing services varied considerably (Fontaine et al., 2012). In addition, supportive housing models have shown promise for homeless, criminally-involved men (Hickert & Taylor, 2011). These programs have faced problems in providing timely and consistent services to clients in the community, and the cost and personnel required for effective interventions can be quite high. In addition, in their work with sex offenders in the UK, Cowan and colleagues (1999), describe the political challenges in providing housing to offenders.

Our research results also highlight the need for *more research on the provision and efficacy of transitional housing*. Sex offenders in our qualitative sample were more likely to rely on transitional housing services. The current research on transitional housing is mixed, and very little research has been conducted in the past two decades. Most recently, Lowenkamp and Latessa (2002) found that medium and high-risk residents of halfway houses were less likely to reoffend than a matched comparison group. There is also evidence that transitional housing programs may delay time to rearrest (Willson, Roman, Wolff, Correa, and Knight, 2010), and programming was associated with increased self-sufficiency, such as attaining driver's licenses, opening bank accounts and eventually securing housing (Worcel, Burrus, and Finigan, 2008). Very little research has considered the unique needs of sex offenders, but Minnesota has developed a transitional housing model specific to sex offenders (Hals, 2007). The program model included shared living arrangements, specially trained staff, and the living space serves as a therapeutic community. Little empirical evaluation of this model has been conducted.

The research suggests that there is a clear need for more defined program models for transitional housing services. Research has documented the challenges in developing programming of this type (Fontaine et al., 2012). Currently, many agencies operating facilities are fragmented and not cohesive (Roman and Travis, 2006). Prison authorities are typically not in contact with community housing resources, perpetuating difficulties in providing housing post-release. Although transitional housing is a viable short-term solution to housing, the transitional phase following release from a community care facility warrants further exploration.

Housing stability is a critical factor to examine when developing policy; therefore, it is important to *enhance current research on residential movement patterns of sex offenders over an extended period of time*. Although housing programs have shown promise, most of these types of

programs do not extend past one year. Most sex offenders have long-term housing needs. Overall, there is a substantial body of literature that documents the housing needs of returning offender. Offenders are more likely to have had a history of residential instability before prison, and to have difficulty maintaining a stable residence after release (Metraux & Culhane, 2004; Richie, 2001). Residential mobility is of great challenge for several reasons. Most importantly, mobility reduces the integration of residents leading to isolation and reduced informal controls (Clear, 2007). Social integration is an vital part of reentry as ties to family are of a central source in connecting people with jobs and other social resources (Granovetter, 1974), but residential change can disrupt social networks and alter social capital (Coleman, 1990; Haynie & South, 2005; Sharkey & Sampson, 2010). Our results suggest that sex offenders are more likely to report more residential movement following the implementation of residency restrictions, and the results of the qualitative analyses suggest that movement can be disruptive. Additional research of this type is needed to discern the long-term housing needs of sex offenders and to develop appropriate interventions.

Finally, more research is needed on the nature of housing options for sex offenders. Researchers have argued that it is important to move beyond the risk paradigm of residency restrictions to consider how the restrictions effect longer-term patterns of equity (Grubestic & Murray, 2008). Given current research which links resource provision and neighborhood context (Hipp, Jannetta, Shah, & Turner, 2011; Hipp et al., 2010), it is important to better consider not only if inmates move but the social and structural quality of the location of these residences.

Develop Reentry Programming Specific to Sex Offender Populations

Sex offenders present special and unique challenges for management in the community. Although much remains to be learned about the complex challenges facing sex offenders in the community, there is a body of research that had identified best practices for sex offender management (Center for Sex Offender Management, 2007). These programs commonly implement the containment approach towards community supervision, a practice that invokes interagency collaboration between corrections, treatment providers, and law enforcement (English et al., 1997). An important feature of the containment approach is that each offender's case is viewed as unique; therefore, the specially trained probation staff shapes individualized

case management plans for every offender under their supervision. Finally, three elements are employed by community correction officials to contain sex offenders: (1) sex offender specific treatment, (2) intensive supervision and monitoring, and (3) frequent professional assessments, including the polygraph to detect current deviant tendencies and behaviors.

Limitations

The current analysis attempted to gauge the efficacy of sex offender residency restrictions by comparing recidivism events between four cohorts – (1) sex offenders paroled prior to the implementation of residency restrictions, (2) sex offenders paroled after the implementation of residency restrictions, (3) non-sex offenders paroled prior to the implementation of residency restrictions, and (4) non-sex offenders paroled after the implementation of residency restrictions. This quasi-experimental design attempts to ensure that the difference between these cohorts is that one cohort was subject to residency restrictions while the other ones were not. However, there is the potential for a history threat to internal validity in which over the course of the study there were other events occurring in the community contemporaneous to the implementation of residency restrictions that could also account for the observed differences (Shadish, Cook, & Campbell, 2002).

One potential historical confound in both states is the implementation of comprehensive reentry program. Michigan implemented the Michigan Prisoner Reentry Initiative (MPRI). MPRI includes a variety of services and involves a planning phase prior to their release from prison, formulating a reentry plan, and then maintaining continuity of care by linking parolees with services following their release from prison. The reentry dimensions targeted by MPRI services include housing, employment, transportation, and substance abuse. MPRI is a reentry program which was initiated in a pilot site in 2003 and brought up to scale statewide in 2008 (Pew Center on the States, 2011). In September 2005, an executive order was signed in Missouri establishing a state-wide reentry process. Like Michigan, the re-entry process begins while in prison and continues throughout parole. The state provides funding to collaborative partnerships that enhance ex-offender self-sufficiency, reduce recidivism, and improve public safety and community health.

A report by the Pew Center on the States (2011) highlights the changes made in Michigan and Missouri that may have influenced recidivism rates. The Pew report documents the negative effect of the MPRI program on returns to prison on technical violations. MPRI was initiated at

the same time that the pre-restriction cohorts in the current study were beginning to be paroled, and then expanded statewide in 2008 while the post-restriction cohorts were being followed. Beginning in 2004 the number of overall technical violations in the state increased, and declined substantially beginning in 2007. The Missouri prison population has remained relatively stable since 2005, but the number of individuals returned to prison for a technical violation has been reduced by approximately 12 percent between 2005 and 2009. In both states, the overall statewide decrease in technical violations was observed around the time of the implementation of sex offender residency restrictions. These changes in policies governing technical violations have likely influenced the technical violation rates documents in the analysis center of the report.^{xix}

A second potential confound may have come from the economic recession beginning in late 2007. The National Bureau of Economic Research (2010) documented an 18 month recession between December 2007 and June 2009, a period that may confound the follow-up interval for the post-restriction sample. It is difficult to separate the effects of this historical threat to internal validity from the observed results, and equally difficult to consider how these economic trends may have influenced the results in both states. One possible area concerns the post-release housing mobility of the sample. The effect of the recession on housing mobility is complex and not fully developed. Homeowners are likely to be tied to their home thereby limiting mobility (Ferreira, Gyourko, & Tracy, 2011), while renters may experience exacerbated mobility as properties become foreclosed or less affordable (Kingsley, Smith, & Price, 2009; Martin, 2010). Residence in rental properties is likely among sex offenders as the rate of homeownership is low (see Mercado, Alvarez, & Levenson, 2008). On the other hand, foreclosures tend to be concentrated in disadvantaged communities with high proportions of minority, low-income residents and crime (Kingsley, Smith, & Price, 2009; Martin, 2010), and the sex offenders in our sample tended to live in more rural, less disadvantaged areas. We cannot rule out the possibility that the recession may have artificially increased the housing mobility of the post-restriction group in both states, which recent research has suggested is associated with increased rates of parole failure (Makarios et al., 2010; Steiner et al., 2011).

Future Research

Although the research on reentry has grown substantially over the past two decades, much remains to be learned about the unique reentry transitions of sex offenders. It is important

to continue to evaluate the effectiveness of residency restrictions with rigorous research designs. Moreover, there remains a need to study sex offenders separately from other offenders. First, evidence suggests that sexual offending may differ from other criminal behaviors (Hanson & Bussiere, 1998). In specific, non sex offenders rarely commit sex offenses (Hanson, Steffy, & Gauthier, 1993; Harris & Hanson, 2004; Sample & Bray, 2003). That noted, very little research has considered the pathways in an out of offending that has become prominent in scholarly journal articles. In particular, researchers have consistently argued for the importance of prioritizing treatment and services, particularly prison, for higher-risk offenders (Lowenkamp, Latessa, & Holsinger, 2006). Given the body of extant research on sex offender residency restrictions, including this report, it may be useful to evaluate if sex offender residency restrictions can have a similar impact when implemented with a smaller, more risky group of offenders.

In addition, much is to be learned about why and how sex offenders desist from crime. Although the desistance literature has grown substantially over the past decade, sex offenders have been left out of the discussion (Bushway et al., 2001; Kazemian & Maruna, 2009; Maruna, 2001; Mulvey, 2011). In particular, the current research suggests that there is a need to consider the collateral consequences of residency restrictions on ones sense of self, and how inmate self perceptions influence the decision-making process. There is empirical evidence to suggest that engaging offenders in the offenders in the change process has utility (Dowden & Andrews, 2004); however, the stigma of the sex offender label has separated offenders from the community and other change agents.

Finally, residency restrictions require a significant investment, and more research is needed to explore the costs of this type of legislation. Parole and probation agencies and staff bear the brunt of resource costs in the management of sex offender caseloads. Most approve initial placements and change of residences to insure they are not in violation of restricted zones. Technologies, such as global positioning systems, continue to be integrated into caseload management strategies which also come at a cost. It is possible to produce cost measures for community-correctional agencies and estimate the cost-effectiveness of residency restriction policies. Sex offender costs are more difficult to measure and estimate. Supervision costs can be easily integrated, but the costs of relocation and collateral consequences will require innovative proxies.

It is also important to consider if the cost of managing sex offenders has reduced organizational capacity to address the needs of other offenders. The recidivism results do not support the presumption that residence restrictions substantially reduce general recidivism or sexual related offending. That noted, it is not clear how the restrictions were adapted by parole authorities. Following the tenets of street-level bureaucracy theory (Lipsky, 1980), shifts in official policy should be implemented and actualized in the practices of individual criminal justice actors. As resources shift towards the management of sex offenders in the community, parole officers may shift their attention in turn, reducing the intensity of supervision over non-sex offenders and the capacity of those officials to detect and act upon parolee deviance (Grattet, Lin, & Petersilia, 2011). Future qualitative research centered on the practices of those responsible for sex offender management may be able to elucidate these processes.

List of References

- Briley, A.D. (2008) Residency restrictions in Nebraska: the potential consequences of LB 1199 for registered sex offender in Omaha and its surrounding communities. Master thesis, Graduate College at the University of Nebraska, Omaha, NE.
- Barnes, J. C., Dukes T., Tewksbury, T., & De Troye, T. M. (2009). Analyzing the impact of a statewide residence restriction law on South Carolina sex offenders. *Criminal Justice Policy Review*, 20(1), 21-43.
- Blood, P., Watson, L., & Stageberg, P. (2008). *State legislation monitoring report*. Des Moines, IA: Criminal and Juvenile Justice Planning.
- Braman, D. (2002). Families and incarceration. In Mauer & Chesney-Lind (Eds.), *Invisible punishment: The collateral consequences of mass imprisonment* (pp. 120-135). New York: The New Press.
- Bushway, S. D. & Apel, A. (2012). A signaling perspective on employment-based reentry programming: Training completion as a desistance signal. *Criminology and Public Policy*, 11(1), 21-50.
- Bushway, S. D., Piquero, A., Broidy, L. M., Cauffman, E., & Mazerolle, P. (2001). An empirical framework for studying desistance as a process. *Criminology*, 39(2), 491-515.
- Brantingham, P.J., & Brantingham, P.L. (1984). *Environmental criminology*. Prospect Heights, IL: Waveland Press.
- Center for Sex Offender Management. (2007). The comprehensive approach to adult and juvenile sex offender management: An overview. Washington, DC: Center for Sex Offender Management.
- Chajewski, M., & Mercado, C. C. (2009). An evaluation of sex offender residency restriction functioning in town, county, and city-wide jurisdictions. *Criminal Justice Policy Review*, 20(1), 44-61.
- Clear, T. (2007). *Imprisoning communities: How mass incarceration makes disadvantaged neighborhoods worse*. New York Oxford University Press.
- Clear, T., Rose, D., Warring, E., & Scully, K. (2003). Coercive mobility and crime: A preliminary examination of concentrated incarceration and social disorganization. *Justice Quarterly*, 20(1), 33-64.
- Cohen, L. E., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, 44(4), 588-608.

- Coleman, J. S. (1990). *Foundations of social theory*. Boston, Massachusetts: Harvard University Press.
- Colombino, N., Mercado, C. C., & Jeglic, E.L. (2009). Situational aspects of sexual offending: Implications for residence restriction laws. *Justice Research and Policy, 11*, 27-44.
- Colorado Department of Public Safety. (2004). Report on safety issues raised by living arrangements for and location of sex offenders in the community. Denver, CO: Sex Offender Management Board.
- Cowan, D., Gilroy, R., & Pantazis, C. (1999). Risking housing need. *Journal of Law and Society, 26*(4), 403-426. doi: 10.2307/1410547
- Cox, D.R. (1972). Regression models and life tables. *Journal of the Royal Statistical Society, 34*, 187-220.
- DeLisi, M., Barnes, J. C., Beaver, K. M., & Gibson, C. L. (2009). Delinquent gangs and adolescent victimization revisited: A propensity score matching approach. *Criminal Justice and Behavior, 36*(8), 808-823.
- Dowden, C., & Andrews, D. A. (2004). The importance of staff practice in delivering effective correctional treatment: A meta-analytic review of core correctional practice. *International Journal of Offender Therapy and Comparative Criminology, 48*, 203-214.
- Duwe, G., Donnay, W., & Tewksbury, R. (2008). Does residential proximity matter? A geographic analysis of sex offense recidivism. *Criminal Justice and Behavior, 35*(4), 484-504.
- Edwards, W., & Hensley, C. (2001). Restructuring sex offender sentencing: A therapeutic jurisprudence approach to the criminal justice process. *International Journal of Offender Therapy and Comparative Criminology, 45*(6), 646-662.
- English, K., Pullen, S., & Jones, L. (1997). *Managing adult sex offenders in the community: A containment approach*. Washington, D.C.: National Institute of Justice.
- Ferreira, F., Gyourko, J., & Tracy, J. (2011). *Housing busts and household mobility: An update*. Cambridge, MA: National Bureau of Economic Research.
- Fontaine, J., Gilchrist-Scott, D., Roman, J., Taxy, S., & Roman, C. G. (2012). *Supportive housing for returning prisoners: Outcomes and impacts of the Returning Home-Ohio Pilot Project*. Washington, DC: Urban Institute.
- Gendreau, P., Little, T., & Goggin, C. (1996). A meta-analysis of the predictors of adult offender recidivism: What works! *Criminology, 34*(4), 575-607.
- Granovetter, M. (1974). *Getting a job*. Chicago: University of Chicago Press.

- Grattet, R., Lin, J., & Petersilia, J. (2011). Supervision regimes, risk, and official reactions to parole deviance. *Criminology*, *49*(2), 371-399.
- Grubestic, T., & Murray, A. (2008). Sex offender residency and spatial equity. *Applied Spatial Analysis and Policy*, *1*(3), 175-192. doi: 10.1007/s12061-008-9013-5
- Hagan, J., & Dinovitzer, R. (1999). Collateral consequences of imprisonment for children, communities, and prisoners. In Tonry & Petersilia (Eds.), *Prisons* (pp. 121-162). Chicago: University of Chicago Press.
- Hanson, R. K., & Bussiere, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology*, *60*, 348-362.
- Hanson, R. K. & Morton-Bourgon, K. E. (2009). The accuracy of recidivism risk assessments for sexual offenders: A meta-analysis of 118 prediction studies. *Psychological Assessment*, *21*(1), 1-21.
- Hanson, R. K., Harris, A. J. R., Scott, T., & Helmus, L. (2007). *Assessing the risk of sexual offenders on community supervision: The Dynamic Supervision Project* (Corrections Research User Report No. 2007-05). Ottawa, ON: Public Safety Canada.
- Hanson, R. K., Steffy, R. A., & Gauthier, R. (1993). Long-term recidivism of child molesters. *Journal of Consulting and Criminal Psychology*, *61*, 646-652.
- Harris, A. J. R., & Hanson, R. K. (2004). *Sex offender recidivism: A simple question*. Ottawa: Public Safety and Emergency Preparedness Canada.
- Harris, G.T., & Rice, M.E. (2003). Actuarial assessment of risk among sex offenders. *Annals of the New York Academy of Sciences*, *989*, 198-210.
- Haynie, D. L., & South, S. J. (2005). Residential mobility and adolescent violence. *Social Forces*, *84*(1), 361-374. doi: 10.1353/sof.2005.0104
- Hickert, A. O., & Taylor, M. J. (2011). Supportive housing for addicted, incarcerated homeless adults. *Journal of Social Service Research*, *37*(2), 136-151. doi: 10.1080/01488376.2011.547449
- Hipp, J. R., Jannetta, J., Shah, R., & Turner, S. (2011). Parolees physical closeness to social services: A study of California parolees. *Crime & Delinquency*, *57*(1), 102-129. doi: 10.1177/0011128708322856
- Hipp, J. R., Petersilia, J., & Turner, S. (2010). Parolee recidivism in California: The Effect of neighborhood context and social service agency characteristics. *Criminology*, *48*(4), 947.

- Holzer, H.J. (1996). *What employers want: Job prospects for less- educated workers*. New York: Russell Sage.
- Huebner, B.M. (2005). The effect incarceration on marriage and work over the life course. *Justice Quarterly*, 22(3), 281-303.
- Huebner, B.M. (2007). Racial and ethnic differences in the likelihood of marriage: The effect of incarceration. *Justice Quarterly*, 24(1), 156-181.
- Huebner, B. M. and T. S. Bynum (2006). An Analysis of Parole Decision Making Using a Sample of Sex Offenders: A Focal Concerns Perspective. *Criminology* 44: 961-999.
- Hughes, L. A., & Burchfield, K. B. (2008). Sex offender residence restrictions in Chicago: An environmental injustice? *Justice Quarterly*, 25(4), 647-673.
- Jennings, W. G., Zgoba, K. M., & Tewksbury, R. (2012). A comparative longitudinal analysis of recidivism trajectories and collateral consequences for sex and non-sex offenders released since the implementation of sex offender registration and community notification. *Journal of Crime and Justice*, 35(3), 356–364. doi:10.1080/0735648X.2012.662062
- Kang, S. (2012). The consequences of sex offender residency restriction: Evidence from North Carolina. Unpublished Manuscript, Duke University Department of Economics.
- Kazemian, L., & Maruna, S. (2009). Desistance from crime. In M. D. Krohn, A. J. Lizotte & P. Hall (Eds.), *Handbook on crime and deviance* (pp. 277-296). New York: Springer.
- Kingsley, G. T., Smith, R., & Price., D. (2009). *The impacts of foreclosures on families and communities*. Washington, DC: Urban Institute.
- Knoll, C.C. (2008) Geographic analysis of sex offender residency restriction legislation. Master thesis, University of South Carolina, Columbia, SC.
- Kubiak, S., Kernsmith, P., Kernsmith, R., & Bender, K. (2011). *Assessing and comparing male and female sex offenders within the Michigan Department of Corrections: A report to the Michigan Department of Corrections*. Lansing: Michigan Department of Corrections.
- Kubrin, C., & Stewart, E.A. (2006). Predicting who reoffends: The neglected role of neighborhood context in recidivism studies. *Criminology*, 44(2), 165-197.
- La Vigne, N. & Parthasarathy, B. (2005). *Prisoner reentry and residential mobility*. Washington, DC: The Urban Institute.
- Langan, P.A., Schmitt, E.L., & Durose, M.R. (2003). *Recidivism of sex offenders released from prison in 1994*. Washington, D.C.: Bureau of Justice Statistics.

- Levenson, J. S. (2008). Collateral consequences of sex offender residence restrictions. *Criminal Justice Studies*, 21(2), 153-166.
- Levenson, J. S. & Cotter, L. P. (2005). The Impact of sex offender residence restrictions: 1,000 feet from danger, or one step from absurd? *International Journal of Offender Therapy and Comparative Criminology*, 49(2), 168-178.
- Levenson, J. S. & Hern, A. L. (2007). Sex offender residence restrictions: Unintended consequences and community reentry. *Justice Research and Policy*, 9(1), 59-73.
- Lin, J., R. Grattet, & Petersilia, J. (2012). Justice by other means: Venue sorting in parole revocation. *Law & Policy*, 34(4): 349-372.
- Lipsky, M. (1980). *Street-level bureaucracy*. New York: Russell Sage Foundation.
- Lowenkamp, C.T. and E.J. Latessa. (2002). Increasing the effectiveness of correctional programming through the risk principle: Identifying offenders for residential placement. *Criminology and Public Policy*, 4(2), 263-290.
- Lowenkamp C. T., Latessa E. J., & Holsinger, A. M. (2006). The risk principle in action: What have we learned from 13,676 offenders and 97 correctional programs? *Crime & Delinquency*, 52, 77-93.
- Mack, E. A., & Grubestic, T. H. (2010). Sex offenders and residential location: A predictive-analytical framework. *Environment and Planning*, 42, 1925-1942.
- Makarios, M., Steiner, B., Travis, L. F. III (2010). Examining the predictors of recidivism among men and women released from prison in Ohio. *Criminal Justice and Behavior*, 37(12), 1377-1391.
- Martin, A. J. (2010). *After foreclosure: The displacement crisis and the social and spatial reproduction of inequality*. Berkeley, CA: Department of City and Regional Planning, University of California, Berkeley.
- Maruna, S. (2001). *Making good: How ex-convicts reform and rebuild their lives*. Washington, D.C.: American Psychological Association.
- Michigan Sex Offenders Registration Act, MCL 28.733 (2005).
- Missouri Revised Statutes, Section 566.147 (2006).
- McGrath, R. J., Cumming, G. F., Burchard, B. L., Zeoli, S., & Ellerby, L. (2010). *Current practices and emerging trends in sexual abuser management: The Safer Society 2009 North American Survey*. Brandon, VT: The Safer Society Press.

- Meloy, M. L., Miller, S., & Curtis, K. (2008). Making sense out of nonsense: The deconstruction of state-level sex offender residence restrictions. *American Journal of Criminal Justice*, 33(2), 209-222.
- Mercado, C. C., Alvarez, S., & Levenson, J. S. (2008). The impact of specialized sex offender legislation on community reentry. *Sexual Abuse: A Journal of Research and Treatment* 20(2), 188-205.
- Meredith, T., Speir, J. C., & Johnson, S. (2007). Developing and implementing automated risk assessments in parole. *Justice Research and Policy*, 9(1), 1-24.
- Metraux, S., & Culhane, D. P. (2004). Homeless shelter use and reincarceration following prison release *Criminology and Public Policy* 3(2), 139-160.
- Minnesota Department of Corrections. (2003). *Level three sex offenders residential placement issues*. St Paul: Author.
- Mulvey, E. P. (2011). Highlights from pathways to desistance: A longitudinal study of serious adolescent offenders. In Office of Juvenile Justice and Delinquency Prevention (Ed.). Washington, DC: U.S. Department of Justice.
- Mustaine, E. E., Tewksbury, R., & Stengel, K. M. (2006a). Social disorganization and residential locations of registered sex offenders: Is this a collateral consequence? *Deviant Behavior*, 27(3), 329-350.
- Mustaine, E. E., Tewksbury, R., & Stengel, K. M. (2006b). Residential location and mobility of registered sex offenders. *American Journal of Criminal Justice*, 30(2), 177-192.
- Naser, R. L., & La Vigne, N. G. (2006). Family support in the prisoner reentry process: Expectations and realities. *Journal of Offender Rehabilitation* 43 (1): 93-106.
- National Bureau of Economic Research. (2010). *Business cycle dating committee*. Retrieved from <http://www.nber.org/cycles/sept2010.html>
- Nobles, M. R., Levenson, J. S., Youstin, T. J. (2012). Effectiveness of residence restrictions in preventing sex offense recidivism. *Crime & Delinquency*, 58(4), 491-513.
- Pacheco, D., & Barnes, J. C. (2013). Sex offender residence restrictions: A systematic review of the literature. In K. Harrison & B. Rainey (eds.) *The Wiley-Blackwell Handbook of Legal and Ethical Aspects of Sex Offender Treatment and Management* (pp. 424-444). Hoboken, NJ: John Wiley & Sons.
- Padgett, D. K., Stanhope, V., Henwood, B. F., & Stefancic, A. (2011). Substance use outcomes among homeless clients with serious mental illness: Comparing housing first with treatment first programs. *Community Mental Health Journal*, 47, 227-232.

- Pager, D. (2003). The mark of a criminal record. *American Journal of Sociology*, 108(5), 937-975.
- Parent, G., Guay, J. P., & Knight, R. A. (2011). An assessment of long-term risk of recidivism by adult sex offenders: One size doesn't fit all. *Criminal Justice and Behavior*, 38(2), 188-209.
- Petersilia, J. (2003). *When prisoners come home: Parole and prisoner reentry*. New York: Oxford.
- Pew Center on the States. (2011). *State of Recidivism: The Revolving Door of America's Prisons*. Washington, DC: The Pew Charitable Trusts.
- Prentky, R. A., Lee, A. F. S., Knight, R. A., & Cerce, D. (1997). Recidivism rates among child molesters and rapists: A methodological analysis. *Law and Human Behavior*, 21(6), 635-659.
- Quinsey, V.L., Rice, M.E., & Harris, G.T. (1995). Actuarial prediction of sexual recidivism. *Journal of Interpersonal Violence*, 10(1), 85-105.
- Red-Bird, B. (2009). *Assessing housing availability under Ohio's sex offender residency restrictions*. Columbus: Ohio State University.
- Ragusa-Salerno, L. M., & Zgoba, K. M. (2012). Taking stock of 20 years of sex offender laws and research: An examination of whether sex offender legislation has helped or hindered our efforts. *Journal of Crime and Justice*, 35(3), 335-355.
doi:10.1080/0735648X.2012.662069.
- Rengifo, A. F., & Stemen, D. (2010). The impact of drug treatment on recidivism: Do mandatory programs make a difference? Evidence from Kansas' Senate Bill 123. *Crime & Delinquency*. Online First Publication.
- Richie, B. (2001). Challenges incarcerated women face as they return to their communities: Findings from life history interviews. *Crime & Delinquency*, 47, 368-389.
- Rodriguez, N. & Brown, B. (2003). *Homelessness among people leaving prison*. Vera Institute of Justice. Available at: <http://www.vera.org>.
- Roman, C. G., & Travis, J. (2004). *Taking stock: Housing, homelessness, and prisoner reentry*. Washington, DC: The Urban Institute.
- Roman, C., & Travis, J. (2006). Where will I sleep tomorrow? Housing, homelessness, and the returning prisoner. *Housing Policy Debate*, 17, 389-418.
- Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for casual effects. *Biometrika*, 70, 41-55.

- Rosenbaum, P. R., & Rubin, D. B. (1984). Reducing bias in observational studies using subclassification on the propensity score. *Journal of the American Statistical Association*, 79, 516-524.
- Rosenbaum, P. R., & Rubin, D. B. (1985). Constructing a control group using multivariate matched sampling methods that incorporate the propensity score. *The American Statistician*, 39, 33-38.
- Rushton, G., Armstrong, M. P., Gittler, J., Greene, B., Pavlik, C. E., West, M. W., et al. (2006). Geocoding in cancer research: A review. *American Journal of Preventative Medicine*, 30(2S), S16–S24.
- Rydberg, J., Grommon, E., Huebner, B. M., & Bynum, T. (2012). The Effect of Statewide Residency Restrictions on Sex Offender Post-Release Housing Mobility. *Justice Quarterly*, 1-24. doi: 10.1080/07418825.2012.667141
- Sample, L. L., & Bray, T. M. (2003). Are sex offenders dangerous? *Criminology and Public Policy*, 3(1), 59-82.
- Sample, L. L., Evans, M. K., & Anderson, A. L. (2011). Sex offender community notification laws: Are their effects symbolic or instrumental in nature? *Criminal Justice Policy Review*, 22(1), 27-49.
- Sampson, R., Raudenbush, S., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, 277, 918-924.
- Serin, R. C., Mailloux, D. L., & Malcolm, P. B. (2001). Psychopathy, deviant sexual arousal, and recidivism among sexual offenders. *Journal of Interpersonal Violence*, 16(3), 234-246.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin Company.
- Sharkey, P., & Sampson, R. J. (2010). Destination effects: Residential mobility and trajectories of adolescent violence in a stratified metropolis. *Criminology*, 48(3), 639-682.
- Silverman, D. (2006). *Interpreting qualitative data: Methods for analyzing talk, text, and interaction*, Third Edition. Thousand Oaks: Sage.
- Simon, J. (1998). Managing the monstrous: Sex offenders and the new penology. *Psychology, Public Policy, and Law*, 4(1/2), 452-457.
- Singer, J.D., & Willett, J.B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. New York: Oxford University Press.

- Socia, K. M. (2011). The policy implications of residence restrictions on sex offender housing in upstate, NY. *Criminology & Public Policy*, 10(2), 351-389.
- Socia, K. M. (2012a). The Implementation of County Residence Restrictions in New York. *Psychology, Public Policy, and Law*, 18(2), 206-230
- Socia, K. M. (2012b). The efficacy of county-level sex offender residence restrictions in New York. *Crime & Delinquency*, 58(4), 612-642.
- Socia, K. M. (forthcoming). Residence restrictions and the association with registered sex offender clustering. *Criminal Justice Policy Review*. Online First publication.
- Soothill, K. (2010). Sex offense recidivism. *Crime and Justice*, 39(1), 145-211.
- Steiner, B., Makarios, M. D., & Travis, L. F. III (2011). Examining the effects of residential situations and residential mobility on offender recidivism. *Crime & Delinquency*.
- Struder, L. H., Aylwin, A. S., Sribney, C., & Reddon, J. R. (2012). Uses, misuses, and abuses of risk assessment with sexual offenders. In D. P. Boer, R. Eher, Craig, L. A., M. H. Miner, and F. Pfafflin (Eds.) *International Perspectives on the Assessment and Treatment of Sexual Offenders: Theory, Practice, and Research*. John Wiley & Sons, Ltd. (pp 194-212).
- Tewksbury, R., & Mustaine, E. E. (2008). Where registered sex offenders live: Community characteristics and proximity to possible victims. *Victims & Offenders*, 3(1), 86-98.
- Tewksbury, R. (2005). Collateral consequences of sex offender registration. *Journal of Contemporary Criminal Justice*, 21(1), 67–81. doi:10.1177/1043986204271704.
- Tewksbury, R., Jennings, W. G., & Zgoba, K. M. (2012). A longitudinal examination of sex offender recidivism prior to and following the implementation of SORN. *Behavioral Sciences & the Law*, 30(3), 308–328. doi:10.1002/bsl.1009
- Tewksbury, R., & Lees, M. (2006). Perceptions of sex offender registration: Collateral consequences and community experiences. *Sociological Spectrum*, 26(3), 309–334. doi:10.1080/02732170500524246.
- Tewksbury, R., & Mustaine, E. E. (2006). Where to find sex offenders: An examination of residential locations and neighborhood conditions. *Criminal Justice Studies*, 19(1), 61–75. doi:10.1080/14786010600615991
- Tewksbury, R., & Mustaine, E. E. (2007). Collateral consequences and community re-entry for registered sex offenders with child victims: Are the challenges even greater? *Journal of Offender Rehabilitation*, 46(1-2), 113–131. doi:10.1080/10509670802071550

- Van Koppen, P.J., & De Keijser, J.W. (1997). Desisting distance decay: On the aggregation of individual crime tips. *Criminology*, 35, 505-515.
- Veysey, B. M. & Zgoba, K. M. (2010). Sex offenses and offenders reconsidered: An investigation of characteristics and correlates over time. *Criminal Justice and Behavior*, 37(5), 583-595.
- Visher, C., LaVigne, N., & Travis, J. (2004). Maryland Pilot Study: Findings from Baltimore. Washington, D.C.: Urban Institute, Justice Policy Center.
- Visher, C. A., Yahner, J., & La Vigne, N. (2010). *Life after prison: Tracking the experiences of male prisoners returning to Chicago, Cleveland, and Houston*. Washington, DC: The Urban Institute.
- Walker, J. T., Golden, J. W., & VanHouton, A. C. (2001). The geographic link between sex offenders and potential victims: A routine activities approach. *Justice Research and Policy*, 3(2), 15-33.
- Western, B. (2002). The impact of incarceration on wage mobility and inequality. *American Sociological Review*, 67(4), 526-546.
- Western, B., Kling, J.R., & Weiman, D.F. (2001). The labor market consequences of incarceration. *Crime & Delinquency*, 47(3), 410-427.
- Willison, J., Roman, C. G., Wolff, A., Correa, V., & Knight, C. R. (2010). *Evaluation of the Ridge House Residential Program: Final Report*. Washington, D.C.: U.S. Department of Justice.
- Wilson, W.J. (1987). *The truly disadvantaged: The inner city, the underclass, and public policy*. Chicago: University of Chicago Press.
- Worcel, S.D., Burrus, S.W.M., & Finigan, M. W. (2008). *Study of Substance-Free Transitional Housing and Community Corrections in Washington County, Oregon*. U.S. Department of Justice.
- Youstin, T. J., & Nobles, M. R. (2009). Residency restrictions: A geospatial analysis of sex offender movement over time. *Crime Mapping: A Journal of Research and Practice*, 1(1), 55-76.
- Zandbergen, P. A. (2008). A comparison of address point, parcel and street geocoding techniques. *Computers, Environment and Urban Systems* 32 (3), pp. 214–232.
- Zandbergen, P. A. (2009). Geocoding quality and implications for spatial analysis. *Geography Compass*, 3(2), 647-680.

Zandbergen, P. A., & Hart, T. C. (2006). Reducing housing options for convicted sex offenders: Investigating the impact of residency restriction laws using GIS. *Justice Research and Policy*, 8(2), 1-24.

Zandbergen, P. A., & Hart, T. C. (2009a). *Availability and spatial distribution of affordable housing in Miami-Dade County and implications of residency restriction zones for registered sex offenders*. Miami, FL: Miami Coalition for the Homeless, Inc.

Zandbergen, P. A., & Hart, T. C. (2009b). *Availability of affordable rental housing in Miami-Dade County under a 1,750 feet residency restriction zone (Addendum to Availability and spatial distribution of affordable housing in Miami-Dade County and implications of residency restriction zones for registered sex offenders)*. Miami, FL: Miami Coalition for the Homeless, Inc.

Zandbergen, P. A., Levenson, J. S., & Hart, T. C. (2010). Residential proximity to schools and daycares: An empirical analysis of sex offense recidivism. *Criminal Justice and Behavior*, 37, 482-502.

Zgoba, K. M., Levenson, J., & McKee, T. (2008). Examining the impact of sex offender residence restrictions on housing availability. *Criminal Justice Policy Review*, 20(1), 91–110. doi:10.1177/0887403408322119

Zgoba, K. M., Miner, M., Knight, R., Letourneau, E., Levenson, J., & Thornton, D. (2012). *A multi-state recidivism study using Static-99R and Static-2002R risk scores and tier guidelines from the Adam Walsh Act*. Washington, D.C.: National Institute of Justice.

ⁱ The residency restrictions in Michigan began on January 1, 2006. The legislation was passed in October, 2005. We use July 1, 2006 in the outcome analyses to account for implementation lag. Staff from the Michigan Department of Corrections indicated a lag in implementation of the restrictions – a similar lag was not observed in Missouri.

ⁱⁱ The Missouri and Michigan Department of Corrections maintain address data in several ways. First, they ask offenders to self-report any changes in residence. In addition, probation and parole officers conduct home visits to confirm address data. Finally, the State Police and local law enforcement agencies share information on offender residences culled from the sex offender registry. The correctional staff takes great care to maintain the address file. That said, this measure is not without possible error.

ⁱⁱⁱ In Missouri, the pre-restriction sample originally included all offenders convicted between 1997 and 2006. The sample was reduced further to reflect the 2003 to 2006 period used in Michigan.

^{iv} Per Rosenbaum and Rubin (1985), “bias” represents standardized mean differences on covariates between treatment and control groups,

$$Bias = \frac{100(\bar{X}_t - \bar{X}_c)}{\sqrt{S_t^2 + S_c^2/2}}$$

whereas \bar{X}_t and \bar{X}_c represent the sample means for the sex offender (treatment) and non-sex offender (control) groups, and S_t^2 and S_c^2 representing the sample variance for the respective groups. Rosenbaum and Rubin (1985) suggest that bias statistics exceeding 20 are problematic. Prior to using the matching procedure 15 of 21 covariates had bias values in excess of 20. After the propensity score matching was complete zero covariates had bias statistics that high.

^v We include technical violations for several reasons. First, criminal justice actors have discretionary power in the parole revocation process, and there is emerging research suggest that criminal justice actors may make decisions based on offense type and other extra-legal factors when making revocation decisions (Lin, Grattet, & Petersilia, 2012). Second, sex offenders have a low base rate of reoffending. It is important to identify low level behaviors that might signal challenges on parole. We feel it is important to incorporate information on the broadest range of dependent measures available.

^{vi} Soothill (2010) recently cautioned against the use of arrest data as measures of sex offense recidivism because an arrest for a sex offense may reflect simple suspicion on behalf of law enforcement, whereas registered sex offenders are routinely suspected when a new sex offense has occurred in the community.

^{vii} In Michigan the statewide residency restriction law places a 1,000 foot buffer around schools and a 500 foot boundary around day care centers, and went into effect on January 1st, 2006. Discussions with the Michigan Department of Corrections and Michigan State Police indicated that there were some initial issues with implementation, so we incorporated a six-month lag into our measure. Once the lag is introduced the pre-restriction release group includes all parolees who were released between January 1st, 2003 and June 30th, 2006. If the sample member was released on or after July 1st, 2006 through December 31st, 2007 then they were considered as part of the post-restriction release group. The post-restriction group was restricted to a shorter period to allow adequate follow-up time for all members of the sample.

^{viii} We selected the cutoff age as age 13 for child molesters as Michigan law uses this threshold to differentiate charge decisions (see Huebner & Bynum, 2006).

^{ix} We originally intended to interview individuals in Michigan prisons, but we encountered challenges in accessing the facilities in a timely manner. The goal of the prison interviews was to understand the unique perspectives of sex offenders who had been returned to prison for a sex offense. The community release center also served as an interview location in Missouri. This type of facility is unique to this state, and the research team felt it was important

to capture information on men who had been released from prison but were unable to secure a home plan; therefore, they were remanded to the release center. Michigan does not operate a state-run transitional facility.

^x Addresses for members of the sex offender and non-sex offender samples were obtained from the Michigan and Missouri Department of Corrections, addresses of licensed daycare centers were obtained from the Michigan Department of Human Services and the Missouri Statistical Analysis Center. Additional geographic coordinates for schools in Michigan were obtained from an online database. Shapefiles for schools and licensed daycares are maintained by Missouri State Police and the Missouri Statistical Analysis Center. In Missouri State Police provided shapefiles, so additional geocoding of schools and daycares was unnecessary.

^{xi} In both states, geocoding of addresses was performed prior to propensity score matching. The following metrics refer to the overall samples, and not just the propensity score matched subjects. The overall sex offender sample had a total of 7917 addresses over the course of their paroles. Of these, 7,699 (97.2%) were successfully geocoded, with 97.2% being matched at a score of 80-100. Any addresses that were not automatically matched were matched manually. Of the 218 address that could not be geocoded either manually or automatically, 171 were mapped to zipcode centroids. For the overall non-sex offender sample there was a total of 7,112 addresses. Of these 6,809 (95.7%) were successfully geocoded, with 96.0% of these addresses being matched at a score of 80-100. Of the 303 addresses that could not be successfully matched, 133 were mapped to a zipcode centroid. In Missouri, the original sample of 4489 provided 4365 viable addresses. Dropped cases had no data associated with the case, were paroled out of state, or the date associated with the address was prior to the release date and therefore unusable. Of the 4365 cases, 430 were successfully matched based on their centroid (e.g. offenders on rural routes or with P.O. Box data only). The final sample of 3609 represents street address, city, and zip code. 430 cases were coded based on zip code only and placed on a zip code cases that have valid addresses and the address did not reflect a state of confinement.

^{xii} Similarly, daycare center addresses were geocoded. Of the 14,077 licensed daycare facilities in Michigan 13,972 (99.3%) were successfully geocoded. Because we obtained coordinate data for Michigan schools, there was a 100% match rate for the 4,801 schools. Daycare facilities in Michigan are often located inside of schools, but equal numbers of schools and daycares is a coincidence.

^{xiii} The comparison groups for residential context have a higher sample size than the analyses for the residency restriction violations analyses. Included in the community analyses are addresses that were mapped to a zip code centroid. These addresses were primarily rural areas where there was typically only one census tract associated with each zip code. Therefore, although the address was not placed on a map to accurately determine violation status, it was feasible to attach census data.

^{xiv} For instance, Google Maps uses street network data geocoding.

^{xv} The change in technical violations was due, in part, to policy changes at the state level. Similar changes were made in Michigan and Missouri. More information on these changes is provided in the discussion section.

^{xvi} Self-selection bias could be a possible source of error for these data. We did not collect systematic information on individuals who were eligible for the study but chose not to participate. Local parole officers were responsible for inviting individuals to participate in the study. In supplementary analyses, we have compared the study sample with the overall sex offender parolee populations in Michigan and Missouri. Our sample was not significantly different than the overall parolee samples.

^{xvii} Michigan parole officers use GPS monitoring as a means to enforce strict compliance with residency restrictions, including whether a paroled sex offender comes into contact with any restricted areas during the course of their employment.

^{xviii} The proportion of child molesters in the Michigan sample over the study period (roughly 22 percent) was just under the proportion of such offenders taken from an extract of all incarcerated Michigan sex offenders in the summer of 2011 (28%) (Kubiak, Kernsmith, Kernsmith, & Bender, 2011).

^{xix} The decline in technical violations in Michigan and Missouri stemmed largely from policy mandates instituted by the state correctional officials. No relevant legislative changes were made at this time that might have influenced revocations or technical violations.