The Effects of Failure to Register on Sex Offender Recidivism

MINNESOTA DEPARTMENT OF CORRECTIONS

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EXECUTIVE SUMMARY

In the early 1990s, the Minnesota legislature enacted the predatory offender registration (POR) law, which requires offenders who meet the statutory criteria to register their residences, places of employment, schools, and any vehicles owned or operated by registrants with the Minnesota Bureau of Criminal Apprehension. Since its creation nearly 20 years ago, the law has been amended several times to broaden its scope and increase the penalties for registration noncompliance. These changes to the POR law have led to a greater number of sex offenders convicted for failure to register (FTR), which has in turn resulted in more offenders coming to prison for FTR offenses. In fact, FTR is now the most common reincarceration offense for sex offenders released from prison.

Due to the growing impact of FTR on Minnesota's criminal justice system, this study attempted to increase understanding of registration noncompliance by examining whether an FTR conviction affected the risk of recidivism among sex offenders released from Minnesota prisons between 2000 and 2004. Recidivism was distinguished by the type of reoffense (FTR, sex offense, or any offense), and the offenders in this study were tracked through the end of 2007, resulting in an average at-risk period of five years. Of the 1,561 predatory offenders released between 2000 and 2004, 170 had an FTR conviction. Of the 170 FTR offenders, 126 were incarcerated for an FTR offense whereas the other 44 had a FTR conviction before coming to prison. To isolate the impact of FTR convictions on recidivism, a matching technique (propensity score matching) was used to create comparison groups of offenders who did not have a prior FTR conviction.

Main Findings

Sexual Recidivism

- Of the 126 offenders incarcerated for an FTR offense (Instant FTR), 17 (13.5%) were rearrested for a sex offense by the end of 2007.
    - 13 (10.3%) of the 126 non-FTR offenders in the comparison group had a sex offense rearrest following their release from prison.

- Of the 170 offenders with any FTR conviction (Any FTR), 21 (12.4%) were rearrested for a sex offense by the end of 2007.
    - 16 (9.4%) of the 170 non-FTR offenders in the comparison group had a sex offense rearrest during the follow-up period.
- The results from the multivariate statistical analyses showed that a prior FTR conviction did not significantly increase the risk of sexual recidivism.

General Recidivism

- Of the 126 Instant FTR offenders, 99 (78.6%) were rearrested for any offense during the follow-up period.
    - 90 (71.4%) of the 126 non-FTR offenders in the comparison group were rearrested for a new offense.
- Of the 170 Any FTR offenders, 130 (76.5%) were rearrested for any offense following their release from prison.
    - 113 (66.5%) of the 170 non-FTR offenders in the comparison group were rearrested for a new offense.
- The results from the multivariate statistical analyses showed that a prior FTR conviction did not significantly increase the risk of general recidivism.

FTR Recidivism

- Of the 126 Instant FTR offenders, 57 (45.2%) were rearrested for a new FTR offense.
    - 39 (31.0%) of the 126 non-FTR offenders in the comparison group were rearrested for an FTR offense.
- Of the 170 Any FTR offenders, 69 (40.6%) were rearrested for a new FTR offense.
    - 41 (24.1%) of the 170 non-FTR offenders in the comparison were rearrested for an FTR offense.
- The results from the multivariate statistical analyses showed that a prior FTR conviction significantly increased the risk of FTR recidivism.

    - An instant FTR offense increased the risk of getting rearrested for an FTR offense by 54 percent, whereas any prior FTR conviction increased the risk by 58 percent.
- The results from the multivariate statistical analysis also showed that having a high school degree or GED at the time of release significantly decreased the risk of FTR recidivism from 39-43 percent.
- The findings further revealed that offenders released from prison to the seven metro area (i.e., Minneapolis, St. Paul, and surrounding suburbs) counties of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington had a significantly greater risk of FTR recidivism.

Conclusion

The results showed that FTR offenders were significantly different from other sex offenders in a number of ways. Consistent with prior research, this study found that registration noncompliant offenders were more likely to be a minority and to have longer criminal histories (i.e., more prior supervision failures and more prior felonies). Due to shorter prison sentences, FTR offenders had shorter periods of post-release supervision and were less likely to have participated in prison-based treatment than other sex offenders. Moreover, compared to other sex offenders, FTR offenders were less educated and were less likely to have used force or offended against victims from multiple age groups in the offense(s) for which they were required to register.

The findings suggest that registration noncompliance does not significantly increase the risk of either sexual or general recidivism. Yet, given that past behavior is often the best predictor of future behavior, a prior FTR conviction was one of the strongest predictors of future registration noncompliance. The results also indicated the risk of registration noncompliance was significantly lower for offenders who had a GED or high school degree at the time of release from prison. This finding suggests that specifically targeting undereducated predatory offenders with educational programming may be an effective strategy to help reduce registration noncompliance and, more narrowly, reincarceration costs resulting from FTR recidivism.

INTRODUCTION

In response to several well-publicized crimes against children—most notably, the abduction of Jacob Wetterling in 1989—the Minnesota Legislature created the sex offender registration (SOR) law in 1991. The law, which was later renamed the predatory offender registration (POR) law in 1993, required convicted sex offenders to register their addresses with the Minnesota Bureau of Criminal Apprehension (BCA) for a period of 10 years following their release from prison. Offenders who failed to register were subject to being charged with a misdemeanor offense.

Since its enactment in 1991, Minnesota's POR law has been amended several times, primarily to widen its scope and increase the penalties for noncompliant offenders. For example, the law was revised to include all offenders (not just those released from prison) convicted of a registration offense or any offense arising out of the same set of circumstances as a registration offense, the list of registration offenses was expanded, the registration period was extended (up to lifetime for some offenders), and the registration information required was broadened to include secondary residences, places of employment, schools, and any vehicles owned or operated by registrants. Moreover, the penalty for failure to register (FTR) was elevated to a gross misdemeanor in 1994, to a felony for repeat offenders in 1995, and then to a felony for all offenders in 2000. Since 2000, offenders facing their first FTR conviction have been subject to a mandatory minimum prison sentence of a year and a day (but no greater than five years), whereas those with prior FTR convictions have been subject to a minimum two-year prison sentence (but also no greater than five years).

The expansion of the POR law and the increased penalties for registration noncompliance have had an impact on sentencing practices, the state's prison population and, more narrowly, patterns in sex offender recidivism. For example, with an average growth rate of 32 percent per year, the number of sex offenders sentenced for felony-level FTR convictions increased from 79 in 2001 to 355 in 2007 (Minnesota Sentencing Guidelines Commission, 2008). Due to the rising volume of felony-level FTR sentences, the number of sex offenders entering prison for FTR offenses has grown, too. Increasing at a clip of 63 percent per year, prison admissions for FTR offenses grew from six in 2000 to 179 in 2008. As a result of the surge

in FTR prison admissions, FTR has supplanted criminal sexual conduct (i.e., sex offenses) as the most common recidivism offense for Minnesota sex offenders. Among sex offenders released from Minnesota prisons between 1990 and 1995, criminal sexual conduct was the most common offense for which they returned to prison. But for sex offenders released from prison since 1996, FTR has been the most common reincarceration offense, accounting for 29 percent of offenses compared to 21 percent for criminal sexual conduct.

Given the growing impact of FTR on criminal justice resources, at least in Minnesota, increasing our understanding of FTR is paramount. This issue takes on added importance, however, when considering that efforts to strengthen POR laws have not been unique to Minnesota. Three years after the POR law was enacted in Minnesota, the U.S. Congress passed the Jacob Wetterling Act in 1994, which required sex offenders to register identifying information with law enforcement agents. Two years later, as part of Megan's Law, the Wetterling Act was amended to allow for public dissemination of some registry information. Most recently, the U.S. Congress enacted the Adam Walsh Act (AWA) in 2006. By establishing a minimum standard nationwide, the AWA will, for many states, increase the penalties for FTR, lengthen registration periods, require more frequent updating of registrant information, and expand the number of sex offenders to whom the notification requirements apply. By expanding the scope and penalties of FTR legislation across the country, the AWA may have an impact on criminal justice resources in other states similar to that observed recently in Minnesota.

PREVIOUS RESEARCH ON SEX OFFENDER REGISTRATION

Due perhaps to the relative newness of SOR legislation, only a handful of studies have examined whether it has an impact on sexual offending. Instead, much of the SOR research has focused on the demographic characteristics of registered sex offenders (RSOs), the accuracy and completeness of registration information, and the collateral consequences of registration. Examining 1,458 RSOs in Hawaii, Szymkowiak and Fraser (2002) found that, on average, registrants were in their 40s and had between one and five felonies, most of which were non-violent offenses. Moreover, registration information was found to be inaccurate and/or incomplete for a substantial proportion of RSOs in Kentucky and Florida

(Levenson and Cotter, 2005; Tewksbury, 2002). Further, in studies of male and female RSOs, many offenders indicated that, in addition to a loss of relationships, they had difficulty securing and maintaining housing and employment (Burchfield and Mingus, 2008; Calkins Mercado, Alvarez, and Levenson, 2008; Tewksbury, 2004, 2005; Vandiver, Dial, and Worley, 2008). And, in a study examining the perceptions of registrants, Tewksbury and Lees (2007) found that although the RSOs they interviewed generally believed that registries could help maintain public safety, most questioned whether registries were efficient enough to lower recidivism.

Only four studies have attempted to address—either directly or indirectly—whether registration laws have a specific or general deterrent effect on sexual offending. The findings from these studies are mixed, however. In analyzing the impact of Iowa's sex offender registry, which was implemented in 1995, Adkins, Huff, and Stageberg (2000) did not find a significant difference in reoffense rates between 233 sex offenders placed on the registry during its first year and 201 offenders convicted of a sex crime the year before inception of the registry but who would have been required to register had the registry law been in effect at the time of their conviction. Prescott and Rockoff (2008), on the other hand, reported in their unpublished study that SOR laws nationwide have reduced the number of sex offenses reported to law enforcement. Meanwhile, in examining the combined effects of registration and notification laws, two separate time-series analyses found that these laws did not have a statistically significant impact on sexual offending (Sandler, Freeman, and Socia, 2008; Vasquez, Maddan, and Walker, 2008).

SOR legislation is based, at least to some extent, on the premise that the promulgation of registrant information will promote public safety by not only increasing offenders' risk of detection should they reoffend sexually but also by enabling local residents to take precautionary measures to protect themselves. A common assumption, then, is that registration noncompliant offenders pose a serious threat to public safety because they are seemingly attempting to avoid scrutiny and detection (Levenson, Letourneau, Armstrong, and Zgoba, 2009). To date, however, only two studies have examined whether registration noncompliance is associated with future criminal offending.

In 2006, Barnoski examined the relationship between FTR as a sex offender and subsequent recidivism among those required to register in the State of Washington between 1990 and 1999. Barnoski (2006) reported that the FTR conviction rate increased over the 10-year period: only five percent of sex offenders released to the community in 1990 had a FTR conviction compared to 18 percent of those released in 1999. Offenders convicted of FTR had higher sexual, violent, and general recidivism rates than those without a conviction. Because this study did not control (statistically or otherwise) for rival causal factors, it is unclear whether the observed differences in recidivism rates were due to the FTR conviction or to other differences between the FTR and non-FTR offenders.

In a more recent study, Levenson and colleagues (2009) examined the relationship between FTR and recidivism among 2,970 adult sex offenders in South Carolina who were required to register between 1995 and 2004. They followed up on these offenders through the end of 2005, with an average at-risk period of 6.2 years for the offenders in their sample. They found that, compared to RSOs without an FTR conviction, those who were convicted of FTR were significantly more likely to be younger, a minority, and have a higher average number of prior general arrests. Further, although FTR convictions did not have a significant effect on sexual recidivism, they significantly increased the risk of general recidivism. Rather than being an indicator of heightened sexual recidivism risk, Levenson and colleagues speculate that registration noncompliance may reflect general criminality, defiance, carelessness, or apathy.

PRESENT STUDY

This study attempts to build on the two prior FTR studies by examining whether an FTR conviction affected the risk of recidivism among sex offenders released from Minnesota prisons between 2000 and 2004. These offenders were tracked through the end of 2007, resulting in an average at-risk period of five years. Although this study is similar to the recent one by Levenson et al. (2009), there are a few notable differences. First, this study includes only offenders who have been released from prison, whereas Levenson et al. examined all adult offenders who were required to register, regardless of whether they were admitted to prison. Second, it is important to know whether FTR convictions are an indicator

of increased risk for sexual or general recidivism. Yet, because FTR has surpassed sex crimes as the most common recidivism offense, at least for Minnesota sex offenders, it is important to know what predicts FTR recidivism. Accordingly, in addition to sexual and general recidivism, this study examines the factors associated with FTR recidivism. Third, several controls—most notably, educational level and prior supervision failures—are included in the analyses to determine whether they may be related to FTR offending. Finally, to isolate the impact of FTR convictions on recidivism, an attempt is made to minimize observed differences between FTR and non-FTR offenders by using propensity score matching to create a comparison group of non-FTR offenders.

In the following section, the data and methodology used in this study are described. Following a presentation of the results from the recidivism analyses, this study concludes by discussing the implications of the findings for the sex offender literature.

DATA AND METHODOLOGY

A retrospective quasi-experimental design was used to determine whether FTR has an impact on sex offender recidivism. Recidivism outcomes were compared among sex offenders with and without a prior FTR conviction who were released from prison between 2000 and 2004. The population was confined to offenders released between 2000 and 2004 for two reasons. First, offenders did not begin to get released from Minnesota prisons for FTR offenses until 2000. Second, to ensure a minimum follow-up period of three years for all offenders in the sample, 2004 was selected as the last release year due to the fact that recidivism data were collected through the end of 2007.

During the five-year period (2000-2004), there were 1,561 sex offenders released from Minnesota prisons who were required to register as predatory offenders. Of these offenders, 126 (8%) were released after serving time in prison for an FTR offense. The remaining 1,435 offenders had been incarcerated for another offense, most often criminal sexual conduct (i.e., sex crime). Among the 1,435 offenders, however, there were 44 who had a prior FTR conviction that did not result in a prison sentence. Therefore, 170 (11%) of the 1,561 offenders had either a prior or instant FTR offense conviction.

MEASURES

FTR

Given that the central purpose of this study is to determine whether an FTR offense has an impact on recidivism, FTR offending is the principal variable of interest. In an effort to acquire a more refined understanding of its potential effects on recidivism, two separate FTR measures were used. The first variable, Instant FTR offense, compared the 126 offenders incarcerated for an FTR offense with a comparison group of similar offenders who were not incarcerated for an FTR offense. As such, Instant FTR offense was measured as "1" for those incarcerated for FTR and as "0" for those who were not. The second variable, Any FTR conviction, measured the impact of any FTR conviction—instant or prior—on reoffending. Therefore, Any FTR conviction was measured as "1" for the 170 offenders with a FTR conviction and as "0" for the 1,391 without.

Control Variables

The control variables included in the statistical models were those that were not only available in the Minnesota Department of Corrections' (DOC) Correctional Operation Management System (COMS) database but also might theoretically have an impact on whether an offender recidivates. Prior research indicates that sex offender recidivism is influenced by factors such as prior sexual criminal history, victim characteristics, participation in prison-based treatment, intensity and length of post-release supervision, and broad community notification (Duwe and Donnay, 2008; Duwe and Goldman, in press; Hanson and Morton-Bourgon, 2004; Minnesota Department of Corrections, 2007). To control for potential rival causal factors, it was necessary to include variables such as these in the statistical analyses. The following lists these variables and describes how they were created:

Offender Race: dichotomized as white (0) or minority (1).

Age at Release: the age of the offender in years at the time of release based on the date of birth and release date.

GED/High School Diploma: offenders with at least a general equivalency diploma (GED) or high school diploma at the time of release from prison were assigned a value of 1. Offenders with less than a GED or high school diploma were given a value of 0.

Prior Supervision Failures: the number of prior failures while on probation and/or parole that resulted in a revocation.

Prior Sex Crime Convictions: the number of sex crime convictions (excluding the instant offense) prior to admission to prison.

Prior Felony Convictions: the number of felony convictions (excluding the instant offense) prior to admission to prison.

Public Location: offenders who committed a sex offense in a public location were given a value of 1, whereas those without a prior public sex offense received a value of 0.

Stranger: offenders with a history of victimizing strangers were assigned a value of 1, while those with a history of offending exclusively against known victims were given a value of 0.

Use of Force: offenders with a history of using force in a prior sex offense received a value of 1, whereas those without such a history were given a value of 0. More specifically, use of force was measured as use of a weapon (including whether it was just displayed or implied); use or threat of physical force; sexual penetration of victims under the age of 13; and/or the commission of sexual acts on victims who are vulnerable due to mental illness, mental retardation, physical ability, or intoxication.

Multiple Age Groups: offenders known to have sexually offended against victims in multiple age groups (under 6, 6-12, 13-15, 16-17, and adult) received a value of 1; offenders known to have offended exclusively against a victim or victims within a single age group were assigned a value of 0.

Disciplinary History: this variable measures the number of formal disciplinary convictions that offenders received between their prison admission and prison release dates.

Length of Stay (LOS): the number of months between prison admission and release dates.

Prison-based treatment: offenders who entered prison-based sex offender treatment while incarcerated were assigned a value of 1, whereas untreated offenders received a value of 0.

Metro-Area: a rough proxy of urban and rural Minnesota, this variable measures the county to which an offender was released, dichotomizing it into either metro area (1) or Greater Minnesota (0). The seven metro area (i.e., Minneapolis, St. Paul, and surrounding suburbs) counties are Anoka, Carver, Dakota, Hennepin, Ramsey, Scott,

and Washington. The remaining 80 counties were coded as non-metro area or Greater Minnesota counties.

Length of Post-Release Supervision: the number of months between an offender's first release date and the end of post-release supervision; i.e., the sentence expiration or conditional release date, the greater of the two.

Type of Post-Release Supervision: three dichotomous dummy variables were created to measure the level of post-release supervision to which offenders were released. The three variables were intensive supervised release (ISR) (1 = ISR, 0 = non-ISR); supervised release (SR) (1 = SR, 0 = non-SR); and discharge (1 = discharge or no supervision, 0 = released to supervision). ISR is the variable that serves as the reference in the statistical analyses.

Supervised Release Revocations (SRRs): the number of times during an offender's sex crime sentence when he returned to prison as a supervised release violator for a technical violation.

Broad Community Notification: dichotomized as either (1) broad community notification or (0) no broad community notification, this variable measures whether offenders were given a Level III risk level assignment prior to their release from prison and, thus, were subjected to broad community notification.

MnSOST-R Score: this variable measures an offender's predicted risk to reoffend sexually, as reflected by the raw score from the Minnesota Sex Offender Screening Tool-Revised (MnSOST-R).

Release Year: measuring the year in which offenders were first released from prison for the instant offense, this variable is included to control for any unobserved differences between the five different release year cohorts from 2000-2004.

Dependent Variable

Recidivism, the outcome variable, was measured nine different ways in this study. It was first operationalized as a: 1) rearrest, 2) reconviction, or 3) reincarceration in a Minnesota correctional facility (MCF) for a new offense following an offender's first release from prison. Recidivism was further distinguished by the type of crime, grouping reoffenses into the following three categories: 1) sex offense, 2) FTR offense, and 3) any offense. This

study thus includes the following nine measures of recidivism: sex crime rearrest, sex crime reconviction, sex crime reincarceration, FTR rearrest, FTR reconviction, FTR reincarceration, any crime rearrest, any crime reconviction, and any crime reincarceration.

Arrest, conviction and incarceration data were collected on offenders through December 31, 2007. The minimum follow-up period, then, was three years, while the maximum was seven years. Data on arrests (misdemeanor, gross misdemeanor, and felony) and convictions (misdemeanor, gross misdemeanor, and felony) were obtained electronically from the BCA, whereas incarceration data were derived from the DOC's COMS database. Consequently, a limitation with these data is that they measure only arrests, convictions, or incarcerations that took place in the state of Minnesota. Moreover, as with any recidivism study, official criminal history data will likely underestimate the actual extent to which the sex offenders examined here reoffended.

An arrest, conviction, and/or incarceration was considered a recidivism event only if it pertained to an offense that had taken place following release. There were a few offenders who returned to prison for a "new" sex offense that had been committed prior to the beginning of their previous prison term; e.g., an offender who was incarcerated from 1997 to 2000 (the beginning of the at-risk period) returns to prison in 2002 for an offense committed in 1995. In these instances, the offenses were not considered recidivism events but the time that offenders served in prison was deducted from their at-risk period.

PROPENSITY SCORE MATCHING

In an attempt to identify comparison groups of offenders without instant or prior FTR offenses, propensity score matching (PSM) was used. PSM is a method that estimates the conditional probability of selection to a particular group given a vector of observed covariates (Rosenbaum & Rubin, 1984). The predicted probability of selection, or propensity score, is typically generated by estimating a logistic regression model in which selection (0 = no selection; 1 = selection) is the dependent variable while the predictor variables consist of those that theoretically have an impact on the selection process. Once estimated, the propensity scores are then used to match individuals between groups. A

"greedy" matching procedure was used that employed a without replacement method in which FTR offenders were matched to non-FTR offenders who had the closest propensity score (i.e., "nearest neighbor") within a caliper (i.e., range of propensity scores) of 0.10. By simultaneously "balancing" multiple covariates on the basis of a single composite score, PSM minimizes observed differences between groups.

Instant FTR Offense

Propensity scores were computed for the 126 offenders with FTR as their instant offense and the remaining 1,435 offenders by estimating a logistic regression model in which the dependent variable was Instant FTR offense (i.e., the 126 offenders incarcerated for FTR were assigned a value of "1" while the remaining 1,435 untreated offenders in the comparison group pool received a value of "0"). The predictors were the 21 control variables used in the statistical analyses. After obtaining propensity scores on the 1,561 offenders, the greedy matching procedure was used to match 126 offenders without an FTR offense with the 126 FTR offenders.

As shown in Table 1, the covariate and propensity score means for both groups prior to matching ("unmatched sample") and after matching ("matched sample") are presented. In addition to tests of statistical significance ("t test p value"), a measure ("Bias") developed by Rosenbaum and Rubin (1985) is provided that quantifies the amount of bias between the matched and unmatched samples (i.e., standardized mean difference between samples),

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

where $\overline{X}_t$ and S_t^2 represent the sample mean and variance for the FTR offenders and $\overline{X}_c$ and S_c^2 represent the sample mean and variance for the non-FTR offenders. If the value of this statistic exceeds 20, the covariate is considered to be unbalanced (Rosenbaum and Rubin, 1985).

Table 1. Propensity Score Matching and Covariate Balance for Instant FTR Offense

Variable	*Sample*	*FTR Mean*	*No FTR Mean*	*Bias Value*	*Bias Reduction (%)*	*t test p Value*
Propensity Score	Unmatched	0.41	0.08	148.93		0.00
	Matched	0.41	0.39	9.69	-93.50%	0.34
Minority	Unmatched	52.38%	42.65%	15.92		0.04
	Matched	52.38%	50.00%	3.88	-75.65%	0.71
Age at Release (years)	Unmatched	34.39	34.82	3.75		0.67
	Matched	34.39	34.77	3.29	-12.29%	0.76
GED or High School	Unmatched	74.60%	83.14%	16.70		0.02
	Matched	74.60%	75.40%	1.49	-91.09%	0.89
Supervision Failures	Unmatched	1.73	0.78	48.90		0.00
	Matched	1.73	1.63	4.93	-89.93%	0.62
Prior Sex Crimes	Unmatched	0.83	0.90	6.90		0.34
	Matched	0.83	0.87	3.18	-53.98%	0.75
Prior Felonies	Unmatched	2.66	1.70	41.49		0.00
	Matched	2.66	2.73	2.80	-93.26%	0.79
Public Location	Unmatched	20.63%	17.77%	5.87		0.42
	Matched	20.63%	19.84%	1.60	-72.70%	0.88
Stranger Victims	Unmatched	18.25%	21.67%	7.05		0.37
	Matched	18.25%	18.25%	0.00	-100.00%	1.00
Use of Force	Unmatched	69.05%	76.79%	14.04		0.05
	Matched	69.05%	71.43%	4.22	-69.93%	0.68
Multiple Age Groups	Unmatched	13.49%	21.88%	18.61		0.03
	Matched	13.49%	15.08%	3.72	-80.02%	0.72
Discipline	Unmatched	1.25	1.70	13.68		0.12
	Matched	1.25	1.26	0.28	-97.94%	0.98
LOS (months)	Unmatched	7.82	33.09	107.14		0.00
	Matched	7.82	8.26	7.93	-92.60%	0.46
Prison-Based Treatment	Unmatched	3.17%	24.46%	60.58		0.00
	Matched	3.17%	5.56%	9.94	-83.60%	0.36
Released to Metro	Unmatched	53.17%	51.29%	3.07		0.69
	Matched	53.17%	50.00%	5.17	68.16%	0.62
Supervision (months)	Unmatched	14.73	53.72	110.30		0.00
	Matched	14.73	15.65	3.41	-96.91%	0.74
Supervised Release	Unmatched	72.22%	49.27%	40.12		0.00
	Matched	72.22%	75.40%	5.84	-85.45%	0.57
Discharge	Unmatched	1.59%	1.11%	3.24		0.63
	Matched	1.59%	1.59%	0.00	-100.00%	1.00
Community Notification	Unmatched	12.70%	12.61%	0.21		0.98
	Matched	12.70%	9.52%	8.06	3765.48%	0.43
MnSOST	Unmatched	-0.04	0.01	4.51		0.57
	Matched	-0.04	0.02	5.50	21.92%	0.59
Release Year	Unmatched	2003.02	2002.51	39.07		0.00
	Matched	2003.02	2002.94	6.34	-83.76%	0.54
SRRs	Unmatched	0.94	1.08	10.79		0.21
	Matched	0.94	0.94	0.00	-100.00%	1.00

Unmatched FTR N = 126
Unmatched Non-FTR N = 1,435
Matched FTR N = 126
Matched Non-FTR N = 126

The data in Table 1 reveal several statistically significant differences between sex offenders incarcerated for FTR and those imprisoned for other crimes—mostly sex offenses. Specifically, the unmatched means show that FTR offenders are significantly more likely to be a minority, have prior supervision failures, have more prior felonies, and have shorter lengths of stay (LOS) in prison. Given the shorter LOSs, which is largely due to the fact that the lengths of FTR sentences are generally less than those for sex crimes, FTR offenders are less likely to have participated in treatment, have shorter periods of post-release supervision, and are less likely to be released to intensive supervision. In addition, FTR offenders are significantly less likely to have a GED or high school degree, to have used force in the sex offense(s) for which they were required to register, and to have victimized multiple age groups. Overall, the data suggest that although FTR offenders may have less serious or extensive sexual offending histories than the other sex offenders examined here, they still have longer criminal histories.

The matching procedure reduced the bias in propensity scores between FTR and non-FTR offenders by 94 percent. Whereas the p value for propensity score was 0.00 in the unmatched sample, it was 0.34 in the matched sample. In the unmatched sample, there were seven covariates that were significantly imbalanced (i.e., the difference between the treatment refusers and those not offered treatment was significant at the .05 level and the bias values exceeded 20). But in the sample that individually matched 126 FTR offenders with 126 non-FTR offenders, covariate balance was achieved insofar as there were no covariates with bias values greater than 20 or with significant differences between the FTR and non-FTR offenders.

Any FTR Offense

Similar to the approach described above with FTR instant offense, propensity scores for the 170 offenders with a history of any FTR offense and the remaining 1,391 non-FTR offenders were calculated by estimating a logistic regression model in which the dependent variable was history of an FTR offense (i.e., the 170 any FTR offenders were assigned a value of “1” while the 1,391 offenders in the comparison group pool received a value of “0”). The predictors were the 21 control variables used in the statistical analyses. After obtaining

Table 2. Propensity Score Matching and Covariate Balance for Any FTR Offense

Variable	*Sample*	*Any FTR Mean*	*No FTR Mean*	*Bias (%)*	*Bias Reduction*	*t test p Value*
Propensity Score	Unmatched	0.37	0.08	120.45		0.00
	Matched	0.37	0.32	18.27	-84.84%	0.02
Minority	Unmatched	51.76%	42.42%	15.30		0.02
	Matched	51.76%	43.53%	13.45	-12.08%	0.13
Age at Release (years)	Unmatched	33.65	34.92	11.07		0.15
	Matched	33.65	32.96	6.17	-44.23%	0.50
GED or High School	Unmatched	76.47%	83.18%	13.39		0.03
	Matched	76.47%	80.00%	6.90	-48.44%	0.43
Supervision Failures	Unmatched	1.61	0.76	46.54		0.00
	Matched	1.61	1.44	8.56	-81.60%	0.32
Prior Sex Crimes	Unmatched	0.86	0.90	4.40		0.50
	Matched	0.86	0.82	4.31	-1.99%	0.62
Prior Felonies	Unmatched	2.67	1.67	44.11		0.00
	Matched	2.67	2.54	5.15	-88.33%	0.57
Public Location	Unmatched	19.41%	17.83%	3.30		0.61
	Matched	19.41%	17.65%	3.68	11.54%	0.68
Stranger Victims	Unmatched	18.82%	21.71%	5.91		0.39
	Matched	18.82%	17.65%	2.47	-58.20%	0.78
Use of Force	Unmatched	66.47%	77.35%	19.49		0.00
	Matched	66.47%	65.29%	2.02	-89.62%	0.82
Multiple Age Groups	Unmatched	17.65%	21.64%	8.31		0.23
	Matched	17.65%	15.88%	3.82	-54.00%	0.66
Discipline	Unmatched	1.33	1.71	11.36		0.14
	Matched	1.33	1.34	0.20	-98.21%	0.98
LOS (months)	Unmatched	9.12	33.74	101.95		0.00
	Matched	9.12	9.21	1.25	-98.77%	0.89
Prison-Based Treatment	Unmatched	4.12%	25.02%	57.19		0.00
	Matched	4.12%	7.06%	10.91	-80.93%	0.24
Released to Metro	Unmatched	51.76%	51.40%	0.59		0.93
	Matched	51.76%	48.24%	5.75	871.96%	0.52
Supervision (months)	Unmatched	22.08	54.05	74.89		0.00
	Matched	22.08	26.00	10.05	-86.58%	0.25
Supervised Release	Unmatched	70.00%	48.81%	36.54		0.00
	Matched	70.00%	72.35%	4.21	-88.47%	0.63
Discharge	Unmatched	1.18%	1.15%	0.20		0.98
	Matched	1.18%	1.76%	4.12	1970.37%	0.65
Community Notification	Unmatched	12.94%	12.58%	0.88		0.89
	Matched	12.94%	11.76%	2.89	229.30%	0.74
MnSOST	Unmatched	0.00	0.01	0.56		0.93
	Matched	0.00	-0.04	3.25	480.67%	0.71
Release Year	Unmatched	2002.95	2002.51	33.85		0.00
	Matched	2002.95	2002.82	9.51	-71.89%	0.29
SRRs	Unmatched	0.94	1.09	10.86		0.14
	Matched	0.94	0.90	2.69	-75.18%	0.76

Unmatched Any FTR N = 170
Unmatched Non-FTR N = 1,391
Matched Any FTR N = 170
Matched Non-FTR N = 170

propensity scores for the 1,561 offenders, the greedy matching procedure was used to individually match 170 non-FTR offenders with the 170 who had a history of an FTR offense.

The data presented in Table 2 are, with one exception, similar to that shown in Table 1. Although there was a statistically significant difference for multiple age groups in Table 1, the difference between the unmatched samples was not statistically significant in Table 2. The matching procedure reduced the bias in propensity scores between any FTR and non-FTR offenders by 85 percent. Again, in the unmatched sample, seven of the covariates had bias values greater than 20. In the matched sample, however, the covariates were balanced to the extent that all bias values are less than 20 and there are no statistically significant differences in covariates between the any FTR and non-FTR offenders.

ANALYSIS

In analyzing recidivism, survival analysis models are preferable in that they utilize time-dependent data, which are important in determining not only whether offenders recidivate but also when they recidivate. As a result, the statistical technique used was a Cox regression model, which utilizes both "status" and "time" variables in estimating the impact of the independent variables on recidivism. For the analyses presented here, the "status" variable was one of the nine recidivism variables mentioned above; e.g., sex crime rearrest, FTR reconviction, any crime reincarceration, etc. The "time" variable, on the other hand, measured the amount of time (in days) from the date of release until the date of first rearrest, reconviction, reincarceration, or December 31, 2007, for those who did not recidivate.

To accurately measure the total amount of time an offender was actually at risk to reoffend (i.e., "street time"), it was necessary to account for instances in which an offender was not at risk to recidivate following release from prison. Failure to do so would bias the findings by artificially increasing the lengths of offender at-risk periods. Accordingly, the time offenders spent in prison as supervised release violators was subtracted from their total at-risk period as long as it 1) preceded a reincarceration for a new offense, or 2) occurred prior to January 1, 2008 (the end of the follow-up period) for those who did not recidivate. In addition, when

recidivism was defined as a sex reoffense, time spent in prison was deducted for offenders reincarcerated for other non-sex reoffenses. Similarly, reincarceration time for non-FTR reoffenses was subtracted from the at-risk period when recidivism was defined as an FTR offense.

Cox regression models were estimated for each of the nine recidivism measures for both FTR variables (instant FTR and any FTR). However, because the reconviction and reincarceration results were substantively similar to those for rearrest for all three reoffense types, only the findings for rearrest are presented since it is the most sensitive recidivism measure. In addition, to determine whether there are certain types of offenders for whom the risk of recidivism varies, interaction models were estimated for each measure of recidivism. Similar to stepwise regression, all first-order interactions with the two FTR measures were examined and non-significant terms removed until only the significant interactions remained in the model.

RESULTS

In Table 3, recidivism rates are broken out not only by the type of reoffense but also by the two FTR measures. The results show that both Instant and Any FTR offenders had significantly higher rates of FTR recidivism than offenders in the non-FTR comparison groups. Both Instant and Any FTR offenders also had higher rates of general recidivism than their non-FTR counterparts. Although this difference was statistically significant for the Any FTR comparison, it was not significant for the Instant FTR comparison. Finally, Instant and Any FTR offenders had higher sexual recidivism rates, but these differences were not statistically significant at the .05 level.

Table 3. Recidivism Rates by FTR

Recidivism	*FTR Rearrest*	*Sex Rearrest*	*Any Rearrest*	*N*
Instant FTR Offense	45.2%	13.5%	78.6%	126
No FTR (Instant Offense)	31.0%	10.3%	71.4%	126
Any FTR Offense	40.6%	12.4%	76.5%	170
No FTR	24.1%	9.4%	66.5%	170

The results presented in Table 3 suggest that either an instant or prior FTR offense may significantly increase the risk of FTR, sexual, and general recidivism. It is possible, however, that the recidivism differences between the FTR and non-FTR sex offenders are due to other factors such as time at risk, prior criminal history, or discipline history. To statistically control for the impact of these other factors on reoffending, Cox regression models were estimated for each measure of recidivism across both FTR measures. In particular, the first model, Instant FTR offense, compared the 126 FTR offenders with the 126 non-FTR offenders in the comparison group. The second model, Any FTR, compared the 170 offenders with any FTR conviction with the 170 non-FTR offenders.

FTR Recidivism

The results from both models indicate that, controlling for other factors, an FTR conviction significantly increased the hazard ratio for a new FTR offense. That is, sex offenders with an instant or prior FTR recidivated faster and more often than non-FTR offenders. As a result, sex offenders with an FTR conviction did not survive as long in the community without committing a new FTR offense. An FTR conviction increased the hazard ratio for rearrest by 54 percent in the Instant FTR model, whereas an FTR conviction increased it by 57 percent in the Any FTR model.

Interactions between the controls and the two FTR measures (instant and any) were tested, but none of the interaction terms were statistically significant. The results from both models, however, showed a reduced risk of FTR rearrest for offenders with either a GED or high school diploma. A GED or high school diploma reduced the hazard ratio by 43 percent in the Instant FTR model and by 39 percent in the Any FTR model. In addition, the findings from both models indicate that the risk of FTR rearrest was significantly higher for offenders released to the urban metro area. Supervised release revocations significantly reduced the hazard ratio in the Instant FTR model but did not have a statistically significant effect in the Any FTR model. Meanwhile, the risk of FTR recidivism was significantly greater in the Any FTR model for minorities, offenders with institutional disciplinary infractions, and offenders with shorter periods of post-release supervision.

Table 4. Cox Regression Models: Time to FTR Recidivism

	FTR Rearrest			
	Instant FTR		Any FTR	
	Hazard Ratio	SE	Hazard Ratio	SE
Instant FTR	1.543*	0.216		
Any FTR			1.577*	0.208
Minority	1.252	0.245	1.647*	0.227
Age at Release (years)	0.982	0.016	0.987	0.015
GED or High School Diploma	0.566*	0.235	0.613*	0.222
Prior Supervision Failures	1.097	0.072	1.136	0.067
Prior Sex Crimes	1.086	0.158	1.167	0.149
Prior Felonies	1.039	0.057	1.024	0.053
Public Location	0.765	0.310	0.967	0.273
Stranger Victims	0.967	0.329	1.120	0.290
Use of Force	0.894	0.264	0.744	0.233
Multiple Age Groups	0.552	0.419	0.618	0.368
Institutional Discipline	1.078	0.045	1.080*	0.039
Length of Stay (months)	0.989	0.029	0.982	0.022
Prison-Based treatment	0.501	0.759	1.021	0.560
Released to Metro	2.012**	0.244	1.935**	0.217
Supervision Length (months)	0.990	0.008	0.983**	0.006
Supervised Release	1.655	0.431	1.378	0.335
Discharge	3.909	0.795	1.935	0.793
Community Notification	2.567	0.499	1.421	0.427
MnSOST-R Score	1.153	0.193	1.118	0.172
Release Year	1.071	0.111	1.140	0.099
Supervised Release Revocations	0.705*	0.169	0.827	0.145
N	252		340	

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

Sexual Recidivism

The results in Table 5 show that neither FTR measure had a statistically significant effect on rearrest for a new sex offense. The effects were in the positive direction, but the FTR coefficients were not statistically significant in either the Instant (p = 0.50) or the Any FTR (p = 0.35) models. The only variable that had a statistically significant effect in either model was MnSOST-R score, which was a significant predictor in the Any FTR model. More specifically, a one-unit increase in MnSOST-R score was associated with a 94 percent increase in the hazard ratio for sex offense rearrest.

Table 5. Cox Regression Models: Time to Sex Offense Recidivism

	Sex Offense Rearrest			
	Instant FTR		Any FTR	
	Hazard Ratio	SE	Hazard Ratio	SE
Instant FTR	1.288	0.383		
Any FTR			1.375	0.341
Minority	1.064	0.441	1.021	0.374
Age at Release (years)	0.966	0.026	1.011	0.021
GED or High School Diploma	1.023	0.469	1.090	0.449
Prior Supervision Failures	0.853	0.159	0.876	0.142
Prior Sex Crimes	0.851	0.272	0.918	0.259
Prior Felonies	1.053	0.120	0.935	0.111
Public Location	1.280	0.507	1.017	0.438
Stranger Victims	1.021	0.554	0.637	0.499
Use of Force	0.547	0.446	0.660	0.381
Multiple Age Groups	0.943	0.624	0.564	0.568
Institutional Discipline	1.009	0.093	1.087	0.072
Length of Stay (months)	1.024	0.043	0.999	0.034
Prison-Based treatment	0.737	1.129	1.167	0.689
Released to Metro	0.931	0.424	0.997	0.347
Supervision Length (months)	1.006	0.009	1.000	0.005
Supervised Release	0.578	0.583	0.597	0.410
Discharge	0.491	1.361	0.761	1.204
Community Notification	1.395	0.755	0.709	0.594
MnSOST-R Score	1.339	0.322	1.944*	0.282
Release Year	0.801	0.196	0.864	0.167
Supervised Release Revocations	0.824	0.221	0.833	0.189
N	252		340	

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

General Recidivism

Similar to sexual recidivism, neither FTR measure had a statistically significant effect on general recidivism. Although both FTR coefficients were in the positive direction, neither the Instant FTR (p = 0.39) nor the Any FTR (p = 0.14) variables were statistically significant. Prior felonies significantly increased the hazard ratio for a rearrest in both models, whereas a supervised release revocation significantly decreased it in both models. Younger offenders had a significantly greater risk of rearrest in the Instant FTR model, while institutional discipline and MnSOST-R score were associated with an elevated risk in the Any FTR model.

Table 6. Cox Regression Models: Time to General Recidivism

	Any Rearrest			
	Instant FTR		Any FTR	
	Hazard Ratio	SE	Hazard Ratio	SE
Instant FTR	1.136	0.149		
Any FTR			1.217	0.133
Minority	1.148	0.167	1.220	0.143
Age at Release (years)	0.975*	0.010	0.985	0.009
GED or High School Diploma	0.789	0.177	0.936	0.164
Prior Supervision Failures	1.055	0.052	1.094	0.048
Prior Sex Crimes	0.961	0.117	0.944	0.105
Prior Felonies	1.098*	0.041	1.099**	0.036
Public Location	0.714	0.231	1.006	0.192
Stranger Victims	1.001	0.231	0.836	0.201
Use of Force	0.956	0.185	1.030	0.151
Multiple Age Groups	0.760	0.275	0.626	0.243
Institutional Discipline	1.086	0.037	1.114**	0.030
Length of Stay (months)	0.992	0.021	0.990	0.013
Prison-Based treatment	0.491	0.479	0.623	0.362
Released to Metro	1.336	0.168	1.305	0.139
Supervision Length (months)	1.002	0.004	0.996	0.003
Supervised Release	1.396	0.270	1.174	0.190
Discharge	1.102	0.638	1.233	0.527
Community Notification	1.434	0.363	0.775	0.287
MnSOST-R Score	1.210	0.138	1.296*	0.115
Release Year	0.938	0.081	0.921	0.065
Supervised Release Revocations	0.703**	0.120	0.706**	0.108
N	252		340	

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

CONCLUSION

The results showed that FTR offenders were significantly different from other sex offenders in a number of ways. Similar to Levenson and colleagues (2009), this study found that registration noncompliant offenders were more likely to be a minority and to have longer criminal histories (i.e., more prior supervision failures and more prior felonies). In addition, it was observed that, due to shorter prison sentences, FTR offenders had shorter periods of post-release supervision and were less likely to have participated in prison-based treatment than other sex offenders. Further, compared to other sex offenders, FTR offenders were less educated and were less likely to have used force or offended against victims from multiple age groups in the offense(s) for which they were required to register.

Having a current or prior FTR conviction, however, did not significantly increase the risk of sexual recidivism. Consistent with the results reported by Levenson et al. (2009), this finding does not support the notion that registration noncompliance elevates the risk of sexual reoffending. Yet, contrary to the results reported by Levenson and colleagues, this study did not find that an FTR conviction significantly increased the risk of general recidivism. It is worth reiterating, however, that this study included only those who had been imprisoned, whereas Levenson et al. examined all adults who were required to register. It is currently unclear whether the discrepant findings regarding general recidivism are due to this difference in populations studied.

Although an FTR conviction did not significantly increase the risk of sexual or general recidivism, it did increase the risk of recidivating with an FTR offense. In particular, an FTR conviction increased the risk of FTR recidivism by 54-58 percent. Given that past behavior is often the best predictor of future behavior, it is not surprising that an FTR conviction was one of the strongest predictors of future registration noncompliance.

The findings also suggest that although the risk of FTR recidivism was significantly lower for offenders who had their supervised release (i.e., parole) revoked for technical violations, it was significantly higher for minorities, offenders with institutional discipline convictions, offenders released to more urban locations, and those with shorter periods of post-release supervision. Perhaps the most notable finding from the FTR recidivism analyses was the impact that education appeared to have on reoffending. Indeed, the results showed that having either a GED or high school diploma at the time of release reduced the risk of FTR recidivism from 39-43 percent. Further, as noted above, offenders with either an instant or prior FTR conviction were significantly less likely to have a GED or high school diploma than other sex offenders. Thus, the lack of a GED of high school diploma was associated not only with a greater likelihood of having an FTR conviction prior to release from prison but was also linked with an elevated risk of registration noncompliance following release from prison.

While registration noncompliance may reflect general criminality, defiance, carelessness or apathy, as Levenson and colleagues have argued, the evidence presented here indicates that it might also reflect cognitive deficits. In addition, the impact that a GED or high school degree had on FTR offending suggests that providing undereducated sex offenders with educational programming may be an effective strategy to help reduce registration noncompliance. Although the provision of additional programming resources—either in the community or within the institution—can be costly, the incarceration of registration noncompliant offenders is even more costly. Yet, if providing more undereducated sex offenders with educational programming significantly decreased the rate of registration noncompliance, the benefits achieved by the reduction in FTR offending and, by extension, the number of prison beds used would likely outweigh costs incurred by an increase in educational programming resources. As other states may begin to experience prison population growth resulting from more stringent AWA requirements, the increased use of educational programming to reduce registration noncompliance could be an important consideration.

Although many correctional agencies, the DOC included, already provide offenders with educational programming options, it is worth noting that the completion of a GED or high school diploma may not be a viable goal for all undereducated sex offenders, particularly those who are severely cognitively impaired. Moreover, even for offenders with less serious impairments, the length of time under correctional supervision may be too brief for them to earn a degree. Still, at a minimum, the absence of a high school degree or GED could be used to identify those at greater risk of future registration noncompliance.

Despite the implications arising from the association between educational level and FTR offending, it remains to be seen whether these findings are unique to offenders released from prison or to Minnesota sex offenders. Considering that this study is believed to be only the third one that has investigated the relationship between registration noncompliance and recidivism, there is still much to be learned about the effects of FTR. For example, due to a lack of valid and reliable data, this study was unable to examine whether registration noncompliance is related to mental illness and, more narrowly, the failure to take prescribed

medication. Indeed, a history of mental illness could also be associated with the inability to obtain a GED, substance abuse, learning disorders or other psychological problems that impair decision-making and judgment, thereby increasing the risk of FTR offending. Moreover, the concentration of undereducated minorities from urban settings among FTR offenders raises the question about the extent to which homelessness may be associated with registration noncompliance. The higher rates of FTR among such offenders may be a function of a selective enforcement mechanism to the extent that homeless offenders with lengthy criminal histories and perhaps even a history of mental illness are subject to closer local police scrutiny, less capable of avoiding detection, and more likely to be arrested for FTR. Finally, future research would benefit by not only using sample sizes larger than the relatively small one used here but also by examining whether registration noncompliance is influenced by participation in community-based treatment, which this study was unable to analyze due to a lack of available community-based treatment data.

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