The Effects of Prison Visits From Community Volunteers on Offender Recidivism

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Abstract

Research has shown that prison visitation is associated with reduced recidivism. This study analyzes whether visits from community volunteers (CVs)—specifically clergy and mentors—had an impact on recidivism by examining 836 offenders released from Minnesota prisons. The results show that CV visits significantly reduced all three measures of reoffending but had no impact on technical violation revocations. The salutary effect on recidivism grew as the proportion of CV visits to all visits increased. The findings suggest CV visits should be conceptualized as a programming resource to be used with higher risk offenders who lack social support.

Keywords

social support, prison, recidivism, visitation, prisoner reentry

Background

We know certain factors contribute to inmate rehabilitation and recidivism reduction for prisoners and ex-prisoners. The question of whether treatment programs are effective in reducing recidivism was addressed in Robert

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Martinson's widely cited study, What Works? Questions and Answers About Prison Reform. This study, or at least many of the subsequent interpretations of it, seemed to emphatically answer this question in the negative—nothing works (Martinson, 1974). However, subsequent research has more accurately answered the question this way—some programs do reduce recidivism for some offenders, in some settings (Sherman et al., 1997). Over the last several decades, there have been a number of studies systematically evaluating the effectiveness of various correctional treatment programs to reduce recidivism. These research reviews draw very similar conclusions about what is effective in reducing recidivism following release from prison (Aos, Phipps, Barnoski, & Lieb, 2001; Cullen, 2002; Gaes, Flanagan, Motiuk, & Stewart, 1999; Lawrence, Mears, Dublin, & Travis, 2002; MacKenzie & Hickman, 1998).

In a study of the Penitentiary of New Mexico from 1956 to 1980, Colvin (2007) found that the growth of legitimate social support activities (related to education and other rehabilitation programs) made available to prisoners from 1968 to 1975 created hope and positive change within the prison, which led to the most significant reductions in levels of violence and escapes in the prison's history. However, a new administration and change in governing philosophy from a social support model to more of a coercive model in late 1975 and early 1976, led to an unprecedented rise of deviance characterized by growing levels of inmate-on-inmate violence. Colvin argues that the drop in social support and the rise of inconsistent coercion was responsible for increasing violence and escapes and other forms of disruptive behavior that ultimately led to the 1980 prison riot in which 34 inmates were killed by other inmates. Colvin's findings are generally consistent with the work of breakdown theorists, postulating that collective action results from social disorganization and increased levels of discontent. According to Useem (1985), data on the 1980 New Mexico prison riot provide support for key aspects of this model.

Overall, the rehabilitation programs that are most effective include at least one of the following components: (a) academic skills training (e.g., adult basic education), (b) vocational skills training (e.g., acquiring and maintaining employment), (c) cognitive skills programs (e.g., goal setting, problem solving, and self-control), and (d) drug abuse treatment. It should be noted, however, that the amount of recidivism reduction when compared with prisoners not receiving the same intervention tends to be rather small (Petersilia, 2003). Unfortunately, most evaluations of correctional programs are under-funded, which makes interpretation of the results less definitive. For example, some research only reports on program completers without consideration of matched

or comparison groups. Such research presents serious challenges to both validity and reliability. In sum, there is research evidence that some programs can reduce recidivism, but these reductions tend to be quite modest.

Moreover, in recent years, economic woes have led to significant cuts in correctional budgets, and as safe and secure custody is generally the paramount concern for correctional authorities, treatment programs tend to be among the first areas to be eliminated (Cullen & Gilbert, 2012). This unfortunate reality means correctional decision makers must think creatively about how to provide programs that are effective in preparing prisoners for release—as evidenced by recidivism reduction—without adding to correctional budgets that may be shrinking for some time. To cut social supports within prison environments when research confirms they can help reduce recidivism is clearly problematic. Recognizing this dilemma, it is incumbent to determine, for example, if volunteer-based programs can also be effective in reducing recidivism, but without adding new costs. This important topic is addressed more fully by Johnson (2013) in a chapter titled "The Faith-Based Prison," which examines the role and efficacy of faith-motivated volunteers and faith-based programs within the prison.

The Present Study

In this study, we follow up on the study by Duwe and Clark (2013), conducting a more rigorous assessment of the effects of community volunteers (CVs)—namely, clergy and mentors—on recidivism. Duwe and Clark (2013) analyzed recidivism outcomes among 16,420 offenders released from Minnesota prisons between 2003 and 2007. Of the 10,053 offenders who were visited in prison, 418 (2.5% of the total) received a visit from a CV. Following Mears, Cochran, Siennick, and Bales (2012), we attempted to control for observable selection bias by using propensity score matching (PSM) to individually match the 418 offenders who received a CV visit with 418 offenders from the comparison group pool ($N = 9,635$) who, despite receiving visits in prison, were not visited by a community volunteer.

In the next section, we review prior research on prisoner visitation, volunteering, mentoring, and social support, and how these factors are often linked to faith-motivated individuals or religious programs, and ultimately, recidivism reduction. After describing the study's data and method, we present the statistical analyses. In analyzing the data, we used Cox regression to determine whether CV visits had an impact on recidivism. We conclude by discussing the implications of the findings for correctional policy and practice.

Literature Review

Major criminological theories have long emphasized the importance of pro-social sources of support as a protective factor against crime. Social control theory suggests, for example, that an individual's attachment, or bond, to a conventional lifestyle inhibits criminal behavior (Hirschi, 1969), whereas general strain theory implies that social support can reduce recidivism by helping ease the stresses related to reentry (Agnew, 1992). Differential association theory holds that desistance from crime is more likely when the strength of an individual's pro-social bonds outweighs the influence from anti-social relationships (Sutherland, 1947). And life course theorists posit that the release from prison is a potential turning point in the lives of offenders in which attachment to supportive friends and family members could provide them both the opportunity and incentive to desist from crime (Horney, Osgood, & Marshall, 1995). Sampson and Laub (1993; Laub & Sampson, 2003) make essentially the same argument for the role of social support in changing the behavioral trajectory of chronic delinquents.

Within corrections, the risk–needs–responsivity model also highlights the importance of social support. Indeed, anti-social peers have been identified as a major criminogenic need (Gendreau, Little, & Goggin, 1996). Existing research has shown, for example, that offenders who maintain anti-social associates are more likely to recidivate (Andrews, Bonta, & Wormith, 2006). Moreover, research on Minnesota prisoners indicates the risk of recidivism is significantly higher for male inmates who are identified as active members of a security threat group (i.e., an active gang affiliation; Duwe, 2014).

Findings from recent studies also suggest that pro-social support is critical in helping offenders make a successful transition from prison to the community. Beginning in Canada in the early 1990s, Circles of Support and Accountability (CoSA) have been used to help high-risk sex offenders successfully transition from prison to the community. By surrounding each Core Member (i.e., sex offender) with four to six community volunteers who provide pro-social support and help the offender remain accountable, evaluations of the CoSA model have shown that it significantly decreases reoffending (Duwe, 2013; Wilson, Cortoni, & McWhinnie, 2009). Moreover, results from the evaluation of the CoSA program in Minnesota revealed that it reduces costs by nearly US$12,000 per participant, yielding a return of US$1.82 for every dollar spent on the program (Duwe, 2013). Findings from evaluations of the InnerChange Freedom Initiative (IFI), a faith-based reentry program, show that it not only reduces costs by more than US$8,000 per participant (Duwe & Johnson, 2013) but also that the beneficial recidivism outcomes may be due, in part, to the continuum of mentoring support some offenders received in both the institution and the community (Duwe & King, 2013).

A number of studies within the last 5 years have explored the relationship between prison visitation and outcomes such as institutional misconduct and post-release recidivism. Examining a cohort of offenders incarcerated in Florida prisons between 2000 and 2002, Cochran (2012) found that prison visitation, especially consistent visitation, was associated with fewer disciplinary reports. In another study that looked at the relationship between visitation and institutional misconduct among Florida prisoners, Siennick, Mears, and Bales (2013) found that disciplinary infractions declined prior to visits, increased immediately after visits, and then gradually declined to average levels.

Research on prisoners in Florida (Bales & Mears, 2008; Cochran, 2014; Mears et al., 2012), Minnesota (Duwe & Clark, 2013), and Canada (Derkzen, Gobeil, & Gileno, 2009) have found that visitation is associated with reduced recidivism. More specifically, the findings from these studies suggest that offenders who are visited more often in prison are less likely to recidivate. Although Cochran (2014) found lower recidivism rates for offenders who were visited early during their incarceration, the findings from the Bales and Mears (2008) and Duwe and Clark (2013) studies suggest that visits occurring closer to an offender's release from prison were more important in reducing recidivism. Duwe and Clark (2013) also found that the more individual offenders had visitors, the lower the risk of recidivism.

Several of these studies also examined whether some offender–visitor relationships were especially beneficial in decreasing recidivism. The results from two of the Florida studies suggest that visits from spouses or significant others were associated with better recidivism outcomes (Bales & Mears, 2008; Mears et al., 2012). In both studies, offender–visitor relationship contained eight categories: parent, spouse, significant other, child, relative, friend, and other. In their study on visitation with Minnesota prisoners, Duwe and Clark (2013) analyzed the effects of visitor type on recidivism in greater detail by examining 16 offender–visitor relationship categories. They found that visits from siblings, in-laws, fathers, clergy, and, to a lesser extent, mentors were the most beneficial in reducing the risk of recidivism. In contrast, visits from ex-spouses significantly increased the risk of recidivism in several of the models they estimated.

Although recent research suggests increased prison visitation is associated with positive recidivism outcomes, the findings also indicate that many offenders are not visited at all in prison. For example, the rate of unvisited offenders has varied from a low of 39% (Duwe & Clark, 2013) to a high of 58% (Bales & Mears, 2008). A number of reasons have been offered as to why many offenders are not visited, including administrative policies that discourage visitation, limited times available for visiting, and long distances between offenders' home communities and the correctional facilities where

they are incarcerated. As Duwe and Clark (2013) point out, however, by the time offenders reach prison, many have lost the trust of loved ones and ruined important personal relationships, often due to their chemical abuse and dependency. Therefore, after some offenders enter prison, their friends and family members have little or no interest in visiting them.

Considering that visits from friends and family members may not be a viable option for many offenders, the findings from the Duwe and Clark (2013) study regarding the effects of clergy and mentor visits may be especially promising. In their explanation of why clergy visits, in particular, were especially helpful in lowering recidivism, Duwe and Clark (2013) reason that clergy may be able to give offenders effective counsel and support because they often receive training in helping individuals through difficult life circumstances. Moreover, as the findings from the InnerChange program evaluations suggest (Duwe & Johnson, 2013; Duwe & King, 2013), mentors can facilitate successful reentry, especially when they provide offenders with a continuum of support from prison to the community.

Similarly, Johnson (2011, p. 113) found evidence that prisoners in the Texas InnerChange program who were matched with mentors were significantly less likely to be rearrested or reincarcerated following release from prison than inmates who did not receive mentors. In the Texas InnerChange evaluation, qualitative interviews with former prisoners and their mentors confirmed that the mentoring relationship brought a level of support and social connectedness that otherwise was missing in the lives of ex-prisoners without mentors (Johnson, 2011, pp. 133-144). Within Minnesota, mentors who visit offenders in prison are associated not only with faith-based programs such as InnerChange but also with community service agencies that are not necessarily faith-based. For example, in the Twin Cities (i.e., Minneapolis and St. Paul) metropolitan area, organizations like Amicus—which recently merged with Volunteers of America-Minnesota—have provided volunteers with opportunities to mentor offenders in prison since the 1960s.

In their discussion of ways to foster greater visitation within correctional facilities, Bales and Mears (2008) recommend that community service agencies and organizations should be encouraged to visit inmates. The results from the Duwe and Clark (2013) study suggest more encouragement may be needed considering that less than 3% of the offenders they examined received visits from community volunteers such as clergy or mentors. Although community volunteer visitation appears to be an area in which there is a lot of room for improvement, the evidence on the effectiveness of these visits is based on the results from an observational study. Similar to much of the recent literature on prisoner visitation, Duwe and Clark (2013) did not use an

experimental or quasi-experimental design. The aforementioned study by Mears and colleagues (2012) is the only notable exception to the observational studies commonly found in the prisoner visitation literature. More specifically, Mears et al. (2012) used a quasi-experimental design in which they relied on PSM to control for observable selection bias.

Data and Method

We used a retrospective quasi-experimental design to determine whether CV visits had an impact on recidivism. The population for this study consisted of 16,420 Minnesota prisoners released between 2003 and 2007. Of these offenders, there were 10,053 (61%) who were visited at least once while incarcerated. Among the visited offenders, 418 (2.5% of all offenders) were visited in prison by a community volunteer prior to release. The comparison group pool for this study consists of the 9,635 offenders who were visited in prison but did not receive a visit from a community volunteer. As discussed later, we used PSM to individually match the 418 offenders who received community volunteer visits with 418 offenders from the larger comparison group pool ($N = 9,635$).

Dependent Variable

Because there is no single "best" measure of recidivism, we used the following four measures in this study: (a) rearrest, (b) reconviction, (c) reincarceration for a new sentence, and (d) revocation for a technical violation. Combined, these four measures provide comprehensive coverage of rule-breaking behavior, per official data, that varied widely in both the severity of the misbehavior and the penalties that were meted out. It is worth emphasizing, however, that the first three recidivism variables strictly measure new criminal offenses. Rearrest is the most sensitive measure of reoffending as it includes not only instances in which offenders were charged and convicted for new crimes (misdemeanor, gross misdemeanor, and felony) but also those in which charges were later dropped due to insufficient evidence. Reconviction is a middle-of-the-road measure insofar as it includes cases in which offenders were arrested and convicted for a new misdemeanor, gross misdemeanor, or felony offense. New offense reincarceration is the most conservative measure of reoffending because it contains only felony-level reoffenses in which the offender was reconvicted and sentenced to prison (instead of probation or a local jail term).

Compared with the three reoffending measures (rearrest, reconviction, and new offense reincarceration), technical violation revocations (the fourth

measure) represent a broader measure of rule-breaking behavior. Offenders can have their supervision revoked for violating the conditions of their supervised release. Because these violations can include activity that may not be criminal in nature (e.g., use of alcohol, failing a community-based treatment program, failure to maintain agent contact, failure to follow curfew, etc.), technical violation revocations do not necessarily measure reoffending. As Duwe and Clark (2013) point out, however, technical violation revocations in Minnesota are still costly to taxpayers, averaging approximately US$9,000 per revocation.

Recidivism data were collected on offenders through June 30, 2010. Because the offenders in this study were released between January 2003 and December 2007, the follow-up time ranged from 2.5 years to 6.5 years with an average of 4.5 years. Data on arrests and convictions were obtained electronically from the Minnesota Bureau of Criminal Apprehension. Reincarceration and revocation data were derived from the Correctional Operations Management System (COMS) database maintained by the Minnesota Department of Corrections (MnDOC). The main limitation with using these data is that they measure only arrests, convictions, or incarcerations that took place in Minnesota, although it is worth noting that interstate recidivism is relatively low (Langan & Levin, 2002). As a result, the findings presented later likely underestimate the true recidivism rates for the offenders examined here.

To accurately measure the total amount of time offenders were actually at risk to reoffend (i.e., "street time"), it was necessary to account for supervised release revocations in the recidivism analyses. More specifically, for the three recidivism variables that strictly measure new criminal offenses (rearrest, reconviction, and new offense reincarceration), it was necessary to deduct the amount of time they spent in prison for technical violation revocations from their total at-risk period. Failure to deduct time spent in prison as a supervised release violator would artificially increase the length of the at-risk periods for these offenders. Therefore, to achieve a more accurate measure of "street time," the time that an offender spent in prison as a supervised release violator was subtracted from his at-risk period, but only if it preceded a rearrest, a reconviction, a reincarceration for a new offense, or if the offender did not recidivate prior to July 1, 2010.

Independent Variables

The main objective of this study is to evaluate the relationship between CV visits and recidivism. As a result, the 418 offenders who received CV visits were assigned a value of "1," whereas the offenders in the comparison group

were given a value of "0." Similar to the prior Minnesota visitation study by Duwe and Clark (2013), we developed several additional measures of CV visitation. We created variables that measured the total number of CV visits as well as the proportion of CV visits relative to all visits.

We also created a variable to measure the effects of more recent CV visits. Like Duwe and Clark (2013), we assigned a value to each CV visit an offender received on the basis of the following formula: 1 − (Number of days between the visit date and the offender's release date / Number of days incarcerated). The recency value assigned to a visit therefore ranges from a low of 0 (*not recent*) to a high of 1 (*very recent*). An offender visited on the first (i.e., oldest) day of his confinement would receive a recency value of 0, whereas a visit on the last day (i.e., most recent) would garner a recency value of 1. The recency values for each visit were then summed and divided by the number of days an offender was incarcerated to form a CV visit recency score for each offender.

The independent, or control, variables included in the statistical models were those that were not only available in the COMS database but also might have an impact on recidivism and receiving a visit from a community volunteer. Table 1 describes the covariates used in the statistical models. Although the comparison group pool consists only of offenders who were visited in prison, we included total number of visits and total number of unique, individual visitors as covariates in the statistical models. In doing so, we attempted to further isolate the effects of community volunteer visits on recidivism by controlling for factors that may influence whether offenders received these types of visits.

Because visits from community volunteers contain those from clergy, we included offenders' self-reported religious affiliation as a covariate in the statistical models. Our analyses also contain several measures commonly associated with recidivism risk, including the offender's race, age, number of prior supervision failures, and prior convictions. Prior research has shown that admission type (new commit), county of commitment (metro), and length of stay are significant predictors of recidivism for Minnesota prisoners (Duwe, 2010; Duwe & Clark, 2013), which is why they were included in this study.

In addition to including factors that increase the likelihood of recidivism, we accounted for factors that have been shown to lower recidivism risk, such as participation in chemical dependency treatment (Duwe, 2010), sex offender treatment (Duwe & Goldman, 2009), the IFI—a faith-based reentry program (Duwe & King, 2013), the Challenge Incarceration Program (CIP)—a correctional boot camp program (Duwe & Kerschner, 2008), and work release (Duwe, 2015).

Table 1. Logistic Regression Model for CV Visit Selection.

Predictors	Predictor description	Coefficient	SE
Number of visitors	Total number of individual visitors	0.057**	0.011
Number of visits	Total number of visits during current prison term	0.002**	0.000
Male	Male = 1; Female = 0	−1.155**	0.148
Minority	Minority = 1; White = 0	0.090	0.123
Age at release (years)	Offender age in years at time of release from prison	0.031**	0.006
Prior supervision failures	Number of prior revocations while under correctional supervision	0.033	0.064
Prior convictions	Number of prior felony convictions, excluding index conviction(s)	−0.003	0.019
Religious affiliation	Offender self-reported religious affiliation; no preference is the reference		
Christian	Christian = 1; other = 0	0.665**	0.144
Non-Christian	Non-Christian = 1; other = 0	0.297	0.244
Metro commit	Twin Cities metropolitan area = 1; Greater Minnesota = 0	−0.007	0.118
Admission type	Type of admission to prison; new court commitment serves as the reference		
Probation violator	Probation violator = 1; other = 0	−0.134	0.143
Release violator	Release violator = 1; other = 0	0.266	0.271
Offense type	Person offense serves as the reference		
Criminal sexual conduct	Sex offense = 1; non-sex offense = 0	0.018	0.211
Property	Property offense = 1; non-property offense = 0	0.056	0.184
Drugs	Drug offense = 1; non-drug offense = 0	−0.352*	0.176
Felony Driving While Intoxicated (DWI)	Felony DWI offense = 1; non-felony DWI offense = 0	−0.442	0.384
Other	Other offense = 1; non-other offense = 0	−0.114	0.200
Length of stay (months)	Number of months between prison admission and release dates	0.007**	0.002
Institutional discipline	Number of discipline convictions in prison during current term	0.011**	0.004
Chemical dependency Treatment	Entered chemical dependency treatment in prison = 1; other = 0	0.528**	0.135
Sex offender treatment	Entered sex offender treatment in prison = 1; other = 0	0.789**	0.250
InnerChange	Entered the IFI = 1; other = 0	2.363**	0.213
Supervision type	Supervised release serves as the reference		
ISR	ISR = 1; non-ISR = 0	0.162	0.151
Work release	Work release = 1; non-work release = 0	0.004	0.151
CIP	CIP = 1; non-CIP = 0	−0.574*	0.288

(continued)

Table 1. (continued)

Predictors	Predictor description	Coefficient	*SE*
Discharge	Discharge = 1; released to correctional supervision = 0	−0.562	0.402
Release year	Year in which first released from prison for instant offense	−0.241	0.042
Constant		479.142**	84.147
N		10,053	
Log-likelihood		2,869.580	
Nagelkerke R^2		.201	

Note. CV = community volunteer; ISR = intensive supervised release; IFI = InnerChange Freedom Initiative; CIP = Challenge Incarceration Program.
*$p < .05$. **$p < .01$.

PSM

PSM is a method that estimates the conditional probability of selection to a particular treatment or group, given a vector of observed covariates (Rosenbaum & Rubin, 1985). 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 who entered treatment with those who did not. Thus, an advantage with using PSM is that it can simultaneously "balance" multiple covariates on the basis of a single composite score.

In matching offenders who received CV visits with those who did not on the conditional probability of receiving CV visits, PSM reduces selection bias by creating a counterfactual estimate of what would have happened to the CV visit offenders had they not received these visits. PSM has several limitations, however, that are worth noting. First, and foremost, because propensity scores are based on observed covariates, PSM is not robust against "hidden bias" from unmeasured variables that are associated with both the assignment to treatment and the outcome variable. Second, there must be substantial overlap among propensity scores between the two groups for PSM to be effective (Shadish, Cook, & Campbell, 2002); otherwise, the matching process will yield incomplete or inexact matches. Finally, as Rubin (1997) points out, PSM tends to work best with large samples.

Although somewhat limited by the data available, an attempt was made to address potential concerns over unobserved bias by including as many theoretically relevant covariates (27) as possible in the propensity score

model. In addition, this study later demonstrates there was substantial over-lap in propensity scores between the treated and untreated offenders. Furthermore, the sample size limitation was addressed by assembling a large number of cases ($N = 10,053$) on which to conduct the propensity score analyses.

Matching Offenders on CV Visits

Propensity scores were calculated for the 418 CV visit participants and the 9,635 non-participants in the comparison group pool by estimating a logistic regression model in which the dependent variable was receiving a CV visit. The predictors were the 27 control variables used in the statistical analyses (see Table 1). The results show a number of factors that predicted whether offenders were visited by CVs.

In Table 1, we see that the odds of receiving a CV visit were significantly greater for offenders who had a greater number of different individual visitors as well as total number of visits. Female and older offenders were more likely to receive CV visits. Compared with offenders with no stated religious preference, those with a Christian affiliation were more likely to receive a CV visit. Compared with person offenders, those incarcerated for a drug offense were less likely to receive a visit. Longer lengths of stay, discipline convictions, and an earlier release year were associated with greater odds of receiving a CV visit. Offenders were more likely to receive a CV visit when they participated in chemical dependency (CD) treatment, sex offender treatment, or InnerChange. They were less likely, however, if they participated in CIP.

As shown in Table 2, the difference in mean propensity score between CV visit offenders and comparison group offenders was statistically significant at the .01 level. Still, there was substantial overlap in propensity scores. Indeed, the vast majority of offenders in both groups (93% for CV and 94% for the comparison group) had propensity scores less than 0.50.

After obtaining propensity scores for the 10,053 offenders, a "greedy" matching procedure that utilized a without replacement method was used to match the offenders who received CV visits with those who did not. CV visit offenders were matched to comparison group offenders who had the closest propensity score (i.e., "nearest neighbor") within a caliper (i.e., range of propensity scores) of 0.05. Matches were found for all 418 CV visit offenders. Table 2 presents the covariate and propensity score means for both groups prior to matching ("total") and after matching ("matched"). In addition to tests of statistical significance ("*t* test *p* value"), Table 2 provides a measure ("Bias") developed by Rosenbaum and Rubin (1985) that quantifies the

Table 2. Propensity Score Matching and Covariate Balance for CV Visits.

Variable	Sample	CV visit M	Comparison M	Bias (Percent)	Bias reduction (Percent)	t test p value
Propensity score	Total	15.30%	3.67%	61.73		.00
	Matched	15.30%	14.74%	2.53	−95.90	.65
Visitors	Total	8.36	4.87	44.62		.00
	Matched	8.36	7.91	5.14	−88.48	.35
Visits	Total	150.08	54.36	42.73		.00
	Matched	150.08	151.30	0.44	−98.96	.94
Male	Total	78.71%	90.21%	24.98		.00
	Matched	78.71%	75.84%	5.63	−77.46	.32
Minority	Total	40.43%	41.03%	1		.81
	Matched	40.43%	44.02%	5.95	496.28	.29
Age at release (years)	Total	36.96	32.77	34.59		.00
	Matched	36.96	36.29	5.43	−84.31	.34
Prior supervision failures	Total	0.69	0.77	6.21		.15
	Matched	0.69	0.69	0	−100.00	.97
Prior convictions	Total	2.14	2.38	6.21		.12
	Matched	2.14	2.29	3.87	−37.65	.50
Christian	Total	77.51%	60.38%	31.57		.00
	Matched	77.51%	78.23%	1.41	−95.53	.80
Non-Christian	Total	6.46%	9.06%	8.14		.07
	Matched	6.46%	7.42%	3.11	−61.84	.59
Metro	Total	58.13%	51.07%	11.62		.01
	Matched	58.13%	60.05%	3.18	−72.62	.57
Probation violator	Total	24.64%	32.99%	15.33		.00
	Matched	24.64%	23.44%	2.28	−85.10	.69
Release violator	Total	5.98%	6.03%	0.17		.97
	Matched	5.98%	6.7%	2.43	1,315.10	.67
Criminal sexual conduct	Total	16.99%	11.5%	12.53		.00
	Matched	16.99%	18.9%	4.09	−67.35	.47
Property	Total	17.94%	19.49%	3.26		.43
	Matched	17.94%	18.9%	2.02	−37.86	.72
Drugs	Total	22.01%	31.48%	17.90		.00
	Matched	22.01%	21.05%	1.90	−89.39	.74
Felony DWI	Total	2.15%	3.69%	7.80		.10
	Matched	2.15%	1.91%	1.37	−82.38	.81
Other	Total	10.53%	12.04%	3.94		.35
	Matched	10.53%	11.24%	1.87	−52.49	.74
Metro	Total	42.85	24.43	41.05		.00
	Matched	42.85	39.53	6.55	−84.05	.25
Length of stay (months)	Total	8.64	4.95	16.18		.00
	Matched	8.64	9.18	2.08	−87.17	.71
Chemical dependency treatment	Total	30.87%	20.36%	19.35		.00
	Matched	30.87%	32.78%	3.35	−82.67	.55

(continued)

Table 2. (continued)

Variable	Sample	CV visit M	Comparison M	Bias (Percent)	Bias reduction (Percent)	t test p value
Sex offender	Total	9.33%	2.61%	21.52		.00
treatment	Matched	9.33%	9.57%	0.67	−96.89	.91
InnerChange	Total	12.44%	1.05%	33.73		.00
	Matched	12.44%	10.29%	5.45	−83.84	.33
ISR	Total	27.51%	20.8%	12.62		.00
	Matched	27.51%	29.43%	3.48	−72.42	.54
CIP	Total	25.36%	18.18%	13.96		.00
	Matched	25.36%	22.25%	5.91	−57.64	.29
Work release	Total	4.78%	8.46%	12.66		.01
	Matched	4.78%	5.5%	2.68	−78.80	.64
Discharge	Total	1.91%	2.92%	5.56		.23
	Matched	1.91%	2.39%	2.75	−50.57	.63
Release year	Total	2004.77	2004.93	9.08		.02
	Matched	2004.77	2004.66	6.28	−30.85	.26

Note. Total CV = 418; Total Comparison Group Pool = 9,635; Matched CV = 418; Matched Comparison = 418. CV = community volunteer; ISR = intensive supervised release; CIP = Challenge Incarceration Program.

amount of bias between the treatment and comparison samples (i.e., standardized mean difference between samples),

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

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

As shown in Table 2, the matching procedure reduced the bias in propensity scores between the CV visit and comparison group offenders by 96%. Whereas the *p* value was .0 in the unmatched sample, it was .65 in the matched sample. In the unmatched sample, there were eight covariates that were significantly imbalanced (i.e., the bias values exceeded 20). But in the matched sample, covariate balance was achieved given that no covariates had bias values greater than 20.

Analysis

In this study, recidivism is a dichotomous dependent variable, which implies that multivariate statistical techniques such as logistic regression or Cox regression would be most appropriate. There are a few advantages, however, to using Cox regression, a type of survival analysis, in this study. First, in contrast to logistic regression, which assumes the length of at-risk periods are the same for all offenders, Cox regression can handle censored observations and, thus, is more appropriate for situations in which the length of the follow-up period varies among offenders. Given that the follow-up period ranges from 2.5 to 6.5 years in this study, Cox regression does not waste data by having to limit the at-risk period to 2.5 years for all offenders (i.e., the minimum follow-up period shared by each offender in this study). Second, compared with logistic regression, Cox regression provides more detail because it uses time-dependent data, which are important in determining not only whether offenders recidivate but also when they recidivate.

In estimating the impact of the independent variables on recidivism, Cox regression uses both "time" and "status" variables. For the analyses presented here, the "time" variable measures the amount of time from the date of release until the date of first rearrest, reconviction, reincarceration, technical violation revocation, or December 31, 2010, for those who did not recidivate. The "status" variable, meanwhile, measures whether an offender recidivated (rearrest, reconviction, reincarceration for a new crime, and technical violation revocation) during the period in which she or he was at risk to recidivate. In the analyses presented below, Cox regression models were estimated for each of the four recidivism measures.

Results

Offenders in both the CV and comparison groups received, on average, roughly 150 visits while incarcerated. The average number of visits per month was 3.5 for CV visit offenders and 3.8 for comparison group offenders. Among the 418 offenders who received CV visits, the average number of these visits was a little more than 10. The average percentage of CV visits relative to all visits was 19.2%.

Recidivism rates are presented in Table 3 for the 418 offenders who received CV visits, the 418 offenders in the matched comparison group, and the 9,635 offenders in the comparison group pool. The results show that the CV visit offenders had lower rates of reoffending than either the matched comparison group or the comparison group pool. Regarding technical violation revocations, the matched comparison group had the highest rate while the CV visit group had a rate that was similar to the comparison group pool.

Table 3. Recidivism Rates for CV and Comparison Group Offenders.

Recidivism	CV	Comparison	Comparison group pool
Rearrest	52.6%	62.7%	65.5%
Reconviction	39.0%	46.2%	50.5%
New offense reincarceration	16.5%	24.6%	25.3%
Technical violation revocation	39.5%	41.2%	39.1%
N	418	418	9,635

Note. CV = community volunteer.

Although these findings suggest CV visits may have an impact on recidivism, especially for the three measures of reoffending, the observed recidivism differences between the CV visits offenders and those in the comparison group may be due to other factors such as time at risk, the timing of CV visits, and proportion of CV visits relative to all visits. To statistically control for the impact of these other factors on reoffending, we estimated Cox regression models for each visitation measure across the four measures of recidivism. To determine model fit, we tested the assumption that the hazards are proportional and for nonlinearity in the relationships between the log hazard and covariates. Inspection of the residuals revealed that each of the Cox regression models we estimated in this study adequately fit the data.

The Impact of CV Visits on Recidivism

Because CV visit offenders reoffended less often and slower than the offenders in the comparison group, they survived longer in the community without committing a new offense. For example, the median survival times when looking at rearrest were 35.5 months for offenders who received CV visits (18.4 months for recidivists and 59.4 months for non-recidivists) and 30.6 months for the comparison group (14.7 months for recidivists and 59.5 months for non-recidivists). For reconviction, median survival times were 41.8 months for CV visit offenders (19.3 months for recidivists and 56.2 months for non-recidivists) and 37.2 months for those in the comparison group (16.8 months for recidivists and 54.1 months for non-recidivists). Median survival times for new offense reincarceration were 54.5 months for CV visit offenders (29 months for recidivists and 59.3 months for non-recidivists) and 54.7 months for comparison group offenders (27.3 months for recidivists and 61.9 months for non-recidivists). Last, for technical violation revocations, median survival times were 41.5 months for CV visit

Table 4. Cox Regression: Impact of Any CV Visit on the Hazard of Recidivism.

	Rearrest		Reconviction		Reincarceration		Revocation	
	Hazard ratio	SE	Hazard ratio	SE	Hazard ratio	SE	Hazard ratio	SE
CV visit	0.752**	0.094	0.800*	0.111	0.688*	0.166	1.045	0.111
Visitors	0.986	0.010	0.983	0.013	0.971	0.021	0.969*	0.012
Visits	1.000	0.000	1.000	0.000	1.000	0.001	1.000	0.000
Male	1.421**	0.130	1.915**	0.153	1.999**	0.241	1.600**	0.168
Minority	0.945	0.107	0.934	0.126	1.142	0.186	0.956	0.126
Age at release (years)	0.964**	0.006	0.968**	0.007	0.964**	0.011	0.974**	0.007
Prior supervision failures	1.092	0.049	1.132**	0.046	1.111	0.061	1.041	0.055
Prior convictions	1.125**	0.014	1.120**	0.014	1.215**	0.016	1.072**	0.017
Religious affiliation								
Christian	0.865	0.124	0.789	0.142	0.924	0.214	0.883	0.151
Non-Christian	1.051	0.205	0.838	0.236	1.058	0.313	1.143	0.234
Metro	1.230	0.111	0.907	0.127	0.883	0.192	1.321*	0.129
Admission type								
Probation violator	1.007	0.118	0.932	0.133	0.863	0.196	0.937	0.149
Release violator	1.068	0.203	0.856	0.229	0.683	0.321	0.888	0.252
Offense type								
Criminal sexual conduct	0.734	0.194	0.517*	0.259	0.669	0.362	1.673*	0.203
Property	1.192	0.151	1.378	0.169	0.985	0.246	1.178	0.186
Drug	1.174	0.155	1.202	0.178	0.866	0.267	0.817	0.201
Felony DWI	1.118	0.391	0.961	0.485	1.157	0.761	1.648	0.400
Other	1.040	0.164	0.883	0.192	1.113	0.269	0.865	0.209
Length of stay	0.997	0.002	0.994*	0.003	0.987**	0.005	0.996*	0.002
Institutional discipline	1.001	0.002	1.005	0.003	1.010*	0.004	1.012**	0.002
Chemical dependency treatment	1.022	0.121	1.032	0.140	1.245	0.206	1.088	0.141
Sex offender treatment	0.549*	0.283	0.602	0.384	0.478	0.657	0.637	0.259
InnerChange	0.976	0.171	1.045	0.207	1.664	0.299	1.364	0.184
Supervision type								
ISR	0.883	0.132	0.876	0.158	1.004	0.227	1.851**	0.154
Work release	0.930	0.130	0.802	0.151	0.797	0.233	1.551**	0.166
CIP	0.601	0.282	0.443*	0.343	0.367	0.644	1.755	0.334
Discharge	1.214	0.316	1.332	0.355	2.865*	0.441		
Release year	0.977	0.039	0.902*	0.048	0.909	0.075	1.023	0.045
N	836		836		836		818	

Note. CV = community volunteer; ISR = intensive supervised release; CIP = Challenge Incarceration Program.
*p < .05. **p < .01.

offenders (6.5 months for recidivists and 63.6 months for non-recidivists) and 44.9 months for those in the comparison group (6.5 months for recidivists and 64.3 months for non-recidivists).

The results from the Cox regression models in Table 4 indicate that, controlling for the effects of the other independent variables in the statistical

model, receiving at least one CV visit significantly reduced the hazard ratio for the three recidivism measures that strictly measured new criminal offenses (rearrest, reconviction, and reincarceration for a new offense). CV visits did not have a significant effect, however, on technical violation revocations. In particular, CV visits decreased the hazard by 25% for rearrest, 20% for reconvictions, and 31% for reincarcerations for a new crime.

The results also showed the hazard ratio was significantly greater for males (all four measures), younger offenders (all four measures), prior supervision failures (reconvictions), prior convictions (all four measures), offenders committed from the Twin Cities' metro area (technical violation revocations), sex offenders (technical violation revocations), shorter lengths of stay in prison (three measures), institutional discipline convictions (two measures), offenders released to work release and intensive supervision (technical violation revocations), and inmates who were released to no supervision (reincarceration for a new offense). The risk (hazard) of recidivism was significantly lower, however, for offenders with more individual visitors (technical violation revocations), sex offenders (reconvictions), sex offender treatment (rearrests), CIP participants (reconvictions), and offenders with earlier release years (reconvictions).

We estimated Cox regression models for each of the four recidivism measures to determine whether the total number of CV visits significantly decreased recidivism. The results were not statistically significant in any of the four models. In Table 5, we present the results that examined the impact of the timing of CV visits on the four recidivism measures. The findings indicate that more recent CV visits had a significant effect on only one of the four recidivism measures, decreasing the hazard for reconviction. The hazard ratios for rearrest and reincarceration for a new offense were not statistically significant, but they approached statistical significance ($p < .10$) and were in the expected negative direction.

In Table 6, we present the results from the Cox regression models that estimated the impact of the proportion of CV visits relative to all visits that offenders received. Here, we see that proportion of CV visits significantly decreased the hazard by 50% for rearrest, 40% for reconviction, and 83% for new offense reincarceration. Put another way, the greater the proportion of CV visits, the lower the risk of reoffending. Proportion of CV visits did not have a significant effect, however, on technical violation revocations.

Conclusion

The study finds visits from CVs reduced the risk of recidivism by 25% for rearrest, 20% for reconviction, and 31% for new offense reincarceration.

Table 5. Cox Regression: Impact of Recent CV Visit on the Hazard of Recidivism.

	Rearrest		Reconviction		Reincarceration		Revocation	
	Hazard ratio	SE	Hazard ratio	SE	Hazard ratio	SE	Hazard ratio	SE
CV visit	0.705	0.201	0.604*	0.235	0.510	0.399	0.936	0.235
Visitors	0.982	0.010	0.979	0.013	0.966	0.022	0.969*	0.012
Visits	1.000	0.000	1.000	0.000	1.000	0.001	1.000	0.000
Male	1.372*	0.130	1.873**	0.153	1.911**	0.241	1.595**	0.169
Minority	0.960	0.108	0.931	0.127	1.139	0.189	0.954	0.126
Age at release (years)	0.963**	0.006	0.967**	0.007	0.962**	0.011	0.974**	0.007
Prior supervision failures	1.095	0.049	1.128*	0.047	1.117	0.061	1.040	0.055
Prior convictions	1.129**	0.014	1.124**	0.014	1.220**	0.017	1.073**	0.017
Religious affiliation								
Christian	0.859	0.124	0.780	0.142	0.937	0.214	0.882	0.151
Non-Christian	0.998	0.206	0.799	0.236	0.972	0.313	1.138	0.234
Metro	1.234	0.113	0.927	0.128	0.916	0.195	1.321*	0.129
Admission type								
Probation violator	1.000	0.117	0.927	0.133	0.858	0.196	0.941	0.149
Release violator	1.064	0.203	0.884	0.228	0.714	0.319	0.891	0.252
Offense type								
Criminal sexual conduct	0.738	0.193	0.522*	0.258	0.668	0.360	1.665*	0.204
Property	1.211	0.151	1.422*	0.169	1.011	0.247	1.173	0.186
Drug	1.165	0.155	1.212	0.178	0.872	0.266	0.817	0.201
Felony DWI	1.173	0.392	1.031	0.485	1.257	0.760	1.658	0.400
Other	1.042	0.164	0.883	0.192	1.101	0.270	0.862	0.210
Length of stay	0.997	0.002	0.993*	0.003	0.987**	0.005	0.996*	0.002
Institutional discipline	1.001	0.002	1.005	0.003	1.010*	0.004	1.012**	0.002
Chemical dependency treatment	1.016	0.121	1.023	0.140	1.263	0.205	1.085	0.140
Sex offender treatment	0.562*	0.282	0.612	0.383	0.485	0.654	0.639	0.259
InnerChange	0.987	0.171	1.068	0.207	1.697	0.299	1.363	0.184
Supervision type								
ISR	0.898	0.132	0.893	0.157	1.026	0.227	1.843**	0.153
Work release	0.937	0.130	0.807	0.151	0.794	0.235	1.556**	0.166
CIP	0.619	0.281	0.454*	0.342	0.385	0.643	1.747	0.334
Discharge	1.255	0.316	1.344	0.357	2.896*	0.444		
Release year	0.976	0.039	0.894*	0.048	0.903	0.075	1.023	0.045
N	836		836		836		818	

Note. CV = community volunteer; ISR = intensive supervised release; CIP = Challenge Incarceration Program.
*$p < .05$. **$p < .01$.

CV visits did not have a significant impact on technical violation revocations in any of the models that were estimated. The total number of CV visits did not have a significant effect on any of the recidivism measures, although the results show some support for the notion that visits closer to an offender's release date are more important in decreasing reoffending. For example, more recent CV visits significantly lowered the hazard for reconviction by

Table 6. Cox Regression: Impact of Proportion of CV Visits on the Hazard of Recidivism.

	Rearrest		Reconviction		Reincarceration		Revocation	
	Hazard ratio	SE	Hazard ratio	SE	Hazard ratio	SE	Hazard ratio	SE
CV visit	0.500**	0.258	0.396**	0.308	0.168**	0.502	1.048	0.270
Visitors	0.978*	0.010	0.974*	0.013	0.951*	0.023	0.970*	0.013
Visits	1.000	0.000	1.000	0.000	1.000	0.001	1.000	0.000
Male	1.389*	0.130	1.894**	0.153	1.872**	0.238	1.603**	0.168
Minority	0.962	0.108	0.921	0.126	1.063	0.188	0.955	0.126
Age at release (years)	0.964**	0.006	0.969**	0.007	0.965**	0.011	0.974**	0.007
Prior supervision failures	1.088	0.049	1.113*	0.048	1.066	0.064	1.042	0.055
Prior convictions	1.130**	0.015	1.130**	0.014	1.239**	0.018	1.072**	0.017
Religious affiliation								
Christian	0.865	0.124	0.780	0.142	0.891	0.214	0.883	0.151
Non-Christian	1.029	0.205	0.812	0.235	0.987	0.314	1.144	0.234
Metro	1.233	0.112	0.924	0.127	0.934	0.192	1.321	0.130
Admission type								
Probation violator	1.021	0.117	0.960	0.133	0.907	0.196	0.938	0.149
Release violator	1.070	0.202	0.882	0.229	0.703	0.318	0.885	0.252
Offense type								
Criminal sexual conduct	0.736	0.193	0.517*	0.258	0.677	0.361	1.671*	0.203
Property	1.182	0.151	1.365	0.169	0.949	0.250	1.178	0.186
Drug	1.129	0.154	1.176	0.177	0.915	0.265	0.819	0.202
Felony DWI	1.103	0.391	0.936	0.484	1.091	0.760	1.655	0.400
Other	1.020	0.165	0.858	0.193	1.083	0.272	0.865	0.210
Length of stay	0.997	0.002	0.994*	0.003	0.988**	0.005	0.996*	0.002
Institutional discipline	1.001	0.002	1.005	0.003	1.010**	0.004	1.012**	0.002
Chemical dependency treatment	1.025	0.121	1.030	0.140	1.281	0.205	1.086	0.140
Sex offender treatment	0.546*	0.282	0.595	0.384	0.461	0.655	0.638	0.259
InnerChange	0.989	0.171	1.067	0.206	1.773	0.298	1.360	0.184
Supervision type								
ISR	0.890	0.132	0.878	0.157	1.023	0.229	1.846**	0.154
Work release	0.929	0.130	0.791	0.151	0.786	0.234	1.553**	0.166
CIP	0.612	0.281	0.439*	0.341	0.340	0.641	1.756	0.334
Discharge	1.233	0.316	1.303	0.356	2.763*	0.443		
Release year	0.976	0.039	0.896*	0.048	0.896	0.075	1.023	0.045
N	836		836		836		818	

Note. CV = community volunteer; ISR = intensive supervised release; CIP = Challenge Incarceration Program.
*p < .05. **p < .01.

40%. The proportion of CV visits relative to all visits had a significant, negative association with the three measures of reoffending, reducing the hazard by 50% for rearrest, 40% for reconviction, and 83% for new offense reincarceration. As the proportion of CV visits increased, the risk of reoffending decreased.

The results are generally consistent with prior research on the importance of pro-social support in reducing recidivism risk. Although friends and family members provide offenders with much-needed support, there are also instances in which this support may not always be beneficial, as evidenced by the effects of ex-spouse visits (Duwe & Clark, 2013). With clergy and mentors, however, offenders are receiving social support that is arguably more beneficial to mitigating recidivism risk. Indeed, the increased effectiveness of CV visits in lowering recidivism is borne out by the findings regarding the proportion of CV visits. But these results may also speak to a higher quality of social support provided by community volunteers.

Whether the topic is local jails, juvenile detention facilities, or minimum to maximum security prisons (state or federal), these are all frequented by thousands of visitors and volunteers each year. It may be easy to understand why family members and friends might take the time to visit incarcerated loved ones. It is less obvious, however, why people choose to voluntarily spend time in prison working with convicted offenders they do not know, that is, until one considers the faith factor. The pervasiveness of religious programs within correctional institutions is undeniable. For example, beyond work, education, or vocational training, religious activities attract more participants than any other personal enhancement program offered inside a prison (Bureau of Justice Statistics, 1993). The bottom line is that faith-based communities tend to provide the bulk of community volunteers.

These realities also hold implications for correctional policy and practice. While the findings demonstrate the salutary effects of CV visits on recidivism, the results regarding the proportion of CV visits may be especially important for policy and practice. After all, the findings reported here imply that CV visits have greater public safety benefits for offenders who do not receive visits (or as many visits) from friends and family members. Existing research has shown that anti-social associates is a major criminogenic need. CV visits may help address this need, especially for offenders who appear to lack social support.

Currently, at least within Minnesota's prison system, visits from clergy and/or mentors are not considered a programming resource that should be delivered systematically in a way that adheres to the risk–needs–responsivity model. Rather, these visits tend to occur in the absence of any structure or larger, overall strategy. Given the findings from this study, however, CV visits should be construed as a programming resource on which correctional systems should try to capitalize. Consistent with the principles of effective correctional interventions, CV visits should be targeted toward offenders who have a higher risk of recidivism and who lack pro-social support. Such an approach would be feasible because, as shown earlier, less than 3% of the

prison population received a CV visit in prison prior to release. Moreover, reserving CV visits for the highest risk, highest need offenders would also help maximize the impact of these visits on recidivism.

While social support is important, research suggests that providing a continuum of support from prison to the community would produce even better recidivism outcomes. To this end, we believe that a continuum of social support from CVs should be the goal. That is, after receiving visits from a community volunteer in prison, the offender should continue meeting with the volunteer following his or her release from prison.

To promote more CV visitation and enhance the likelihood of a continuum of support, correctional systems should also consider recent innovations such as video visitation. The correctional facility at which an offender is incarcerated may not be close in proximity to the community where she or he will be released, which can make it difficult for friends and family to visit. But with video visitation, geographical distance is not an obstacle.

Instead, after paying a fee, friends and family members can visit an offender without having to travel to the facility where she or he is incarcerated. Yet, to help foster more visits and greater participation from clergy, mentors, and other volunteers, correctional systems should consider waiving video visitation fees for community volunteers. Such an arrangement could be especially beneficial for initially establishing social support for high-risk and -need offenders while they are incarcerated at correctional facilities that are long distances from the communities where they will be returning. And, then, to attain the continuum of social support that has been associated with improved recidivism outcomes, offenders can continue meeting with their community volunteers after their release from prison.

Declaration of Conflicting Interests

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