The Association Between Idleness and Post-Release Employment, Recidivism and Mortality

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Research Summary

The existing literature has yet to examine the system-wide effects of idleness and participation in prison-based work and programming on multiple post-release outcomes. Using a sample of more than 77,000 releases from Minnesota prisons between 2010 and 2021, we examined the relationship between participation in prison labor and programming on post-release employment, recidivism and mortality. The findings suggest that how people spend their time in prison significantly affects their chances of finding a job, their likelihood of recidivism, and how long they live following release from prison. As involvement in work and/or programming increased, the people released from prison were more likely to find employment while also having a reduced risk for recidivism and mortality.

Introduction

After decades of research on correctional programs and practices, corrections workers should now be more certain than ever on what works for best managing incarcerated populations (Andrews & Bonta, 2010; Duriez et al., 2018; Smith, Gendreau, & Schwartz, 2009). The National Institute of Justice's crimesolutions.gov website provides a clearinghouse of correctional interventions, including program descriptions, summaries of related research, and evidence ratings based on whether the programs are effective at changing targeted outcomes (e.g., recidivism, employment, desistance from drugs and alcohol). There are now more than 500 corrections-based interventions rated as "effective" or "promising" based on one or more scientific evaluations (National Institute of Justice, n.d.).

These efforts have been supported by the federal and state governments. An analysis of the extent to which states use research and evaluation to inform policies, laws, and budgets found that 43 states use at least a modest level of evidence to inform government practice (Pew-MacArthur Results First Initiative, 2017). Over the past few decades, federal grant programs that fund state and local criminal justice initiatives have required that grantees incorporate evidence-based practices and outcome evaluations into their proposals (Duriez et al., 2018). More recently, the First Step Act was signed into law in 2018, requiring the Federal Bureau of Prisons to not only incorporate more evidence-based practices, but to also evaluate their efforts (Federal Bureau of Prisons, n.d.).

Despite these developments, many individuals leave prison without participating in any evidence-based programs (Duwe & Clark, 2017a). Even among individuals

fortunate enough to engage in some programming or work activities, they spend an average of three to four hours engaged in those activities, leaving the rest of the day unstructured (Batchelder & Pippert 2002; Bureau of Justice Statistics 2004; Steiner & Wooldredge 2008).

Research on best practices in corrections is built upon thousands of published studies of stand-alone interventions that occupy only a fraction of a person's time in prison. Few evaluations have considered the entirety of a person's time spent in prison, and how time spent affects multiple post-release outcomes. Much of this research has been focused on how time spent in restrictive housing or supermax prisons affects recidivism (Butler et al., 2017; Clark & Duwe, 2019; Lovell, Johnson, & Cain, 2007; Mears & Bales, 2009), employment (Wildemann & Andersen, 2020a), and mortality (Wildemann & Andersen, 2020b). Other research has examined whether any participation in evidence-based interventions throughout the duration of incarceration affects recidivism (Duwe & Clark, 2017a) or employment (Duwe & Clark, 2017b).

Rather than focusing on single interventions and outcomes, the present study examined how time spent in programming and/or work activities during the entire length of incarceration affected three post-release outcomes: recidivism, employment, and mortality. How does time spent in constructive activities versus time spent idle affect multiple quality-of-life outcomes? Idle time in prison has long been recognized as a threat to institutional safety (Colvin, 1992; Huebner, 2003), but does it also undermine successful community reentry?

Literature Review

Beyond the prison context, the criminology literature has established that there is a relationship between unstructured activities and crime (Osgood et al., 1996). Unstructured time can facilitate increased exposure to anti-social associates, leading to greater acceptance of anti-social values and more opportunity to engage in anti-social behavior (Hoeben & Weerman, 2016). In the corrections literature, these concepts are typically linked to institutional safety. Past studies have found that institutions with fewer programs or opportunities to engage in work activities have increased levels of misconduct and violence (Colvin, 1992; Huebner, 2003). At the individual level, some studies suggest participation in fewer structured activities (and, therefore, more unstructured time available for recreation) is related to misconduct as well as victimization (Steiner & Wooldredge, 2014; Vuk & Doležal, 2019; Wooldredge, 1998). Thus, it may follow that the lack of participation in structured activities may also be related to reentry outcomes.

Idle Time and Post-Release Outcomes

While few studies have examined the relationship between idle status (i.e., non-participation in prison programming such as work, treatment, or education) and reentry, research on restrictive housing—where incarcerated people are likely to remain idle rather than participating in work, education, or treatment—can inform our understanding of how idleness may relate to reentry. This research, although limited, suggests time spent idle may worsen incarcerated people's post-release experiences.

Most of the research on the effect of idleness on recidivism outcomes has been focused on the effects of restrictive housing or time spent in supermax prisons. The

results of these studies have generally been mixed, finding both that restrictive housing increased the likelihood of recidivism or did not significantly impact this outcome. Lovell et al., (2007) found that individuals confined in supermax prisons were not more likely to reoffend compared to individuals who did not spend time in supermax facilities. Conversely, Mears and Bales (2009) found that individuals who spent time in supermax facilities were more likely to commit violent offenses compared to individuals who were not exposed to supermax facilities. Both of the above studies found that total time spent in supermax facilities did not significantly affect recidivism outcomes (Lovell et al., 2007; Mears & Bales, 2009). In a more recent study of time spent in restrictive housing, Clark and Duwe (2019) found that the percent of a person's incarceration time spent in restrictive housing increased the likelihood of being returned to prison for a technical violation, but did not increase the likelihood of rearrest, reconviction, or return to prison for a new offense. Conversely, a meta-analysis of studies that examined the effects of restrictive housing on recidivism found an overall modest positive effect on multiple recidivism outcomes (Luigi et al., 2022).

Restrictive housing has also been linked to poorer employment outcomes. In a study of Danish prisons, Wildeman and Andersen (2020) found those who were placed in disciplinary segregation were less likely to have formal employment than those who were found guilty of rule violations but were allowed to remain in the general population, where work, education, or programming are more accessible. This association between restrictive housing and employment could be due, in part, to the lower participation in visitation among those who spend time in restrictive housing (Anderson et al., 2022), which may in turn harm one's chances of finding work (Fahmy et al., 2022).

Time spent in restrictive housing has also been linked to mortality after release from prison. Brinkley-Rubinstein et al.'s examination of people released from North Carolina prisons (2019) showed the odds of death were 24% more likely among those who spent any time in restrictive housing. Similarly, Wildeman and Anderson (2020) found those who spent time in solitary confinement while incarcerated in Danish prisons had increased mortality rates, especially when examining deaths due to unnatural causes.

Taken together, the research suggests that time spent in restrictive housing may worsen reentry outcomes. However, the experience of restrictive housing is likely very different than the experience of idle time. The stress of isolation and deprivation of contact with others may cause different outcomes than the experience of boredom. Still, although restrictive housing is an extreme form of idleness, this literature suggests there could be a link between time spent on idle status and one's experiences during reentry.

Constructive Time and Post-Release Outcomes

Although there has been little research on the relationship between idle time and post-release outcomes, there is a much larger body of literature on the opposite. Participation in work, education, or treatment programming has been linked to lower recidivism, higher odds of finding employment, and better health; especially when considering the proportion of one's incarceration spent in these activities.

Recidivism. Most research on use of time during incarceration and recidivism has been focused on specific interventions that target criminogenic needs (i.e., individual characteristics associated with increased risk of recidivism). These interventions include substance use disorder treatment (Bahr, Masters, & Taylor, 2012; Belenko, Hiller, & Hamilton, 2013; Mitchell, Wilson, & MacKenzie, 2007), cognitive behavioral

interventions (Andrews & Bonta, 2010; Landenberger & Lipsey, 2005; Nesovic, 2003; Smith et al., 2009), and education programs (Aos, Miller, & Drake, 2006; Davis et al., 2013; Nur & Nguyen, 2023; Wilson, Gallagher, & MacKenzie, 2000), among several other interventions. Overall, the results have shown that well-designed programs that target criminogenic needs can have at least modest recidivism reduction benefits (Duriez et al., 2018).

Evaluations of substance use disorder (SUD) treatment have found that increased treatment time lower the risk of recidivism, but only up to a point (Duwe, 2010; Wexler et al., 1990). While SUD treatment improved recidivism outcomes for participants who had been in the program for less than a year, it did not reduce reoffending for those who were in the program longer than 12 months, which is when, according to Wexler et al. (1990), they may have become disillusioned and reduced their involvement in the program.

The findings from evaluations of cognitive-behavioral therapy (CBT) programs, which have generally examined durations shorter than those for the SUD treatment evaluations discussed above, indicate that greater dosages are associated with better recidivism outcomes (Lipsey, Landenberger, & Wilson, 2007). In their study of 620 justice-involved individuals, Bourgon and Armstrong (2005) examined recidivism outcomes among four different groups—1) untreated, 2) 5 weeks/100 hours of treatment, 3) 10 weeks/200 hours, and 4) 15 weeks/300 hours. Bourgon and Armstrong (2005) found that as the dosage of CBT increased, recidivism decreased. Similarly, in their study on 13,676 individuals who participated in a variety of treatment programs, Lowenkamp, Latessa, and Holsinger (2006) reported better recidivism outcomes for higher-risk

individuals when they received more treatment. Gentry Sperber, Latessa, and Makarios (2013) also found that higher dosages of treatment yielded better recidivism outcomes among higher-risk individuals from Ohio.

Much of the existing literature on correctional treatment dosage has measured it as the number of hours, days, or weeks that individuals participate in a single intervention. Duwe and Clark (2017a) explored the dosage-recidivism relationship with another measure—the number of correctional interventions in which incarcerated people had participated. Examining more than 55,000 individuals released from Minnesota prisons, Duwe and Clark (2017a) found that participation in effective interventions significantly reduced recidivism, and the size of the reduction was greater for individuals who were involved in multiple effective interventions. Participation in one or two evidence-based programs while incarcerated decreased the odds of recidivism by 12 percent and 26 percent, respectively.

Research on the effects of involvement in prison work programs or industry on recidivism has been more mixed, generally finding that work programs have a negligible effect on recidivism. In a meta-analysis of prison-based education and work programs, Wilson et al., (2000) found that work programs generally reduced the likelihood of recidivism. However, these recidivism reduction benefits were very small, and the supporting research was methodologically weak. In a more recent methodologically rigorous study that employed propensity score matching to create comparable treatment and control groups, Duwe and McNeeley (2020) found that involvement in prison work programs had a very small, non-significant overall effect on recidivism. But when they examined the extent to which individuals participated in prison labor, the best outcomes

were observed for those who spent a greater proportion of their overall confinement time working a job in prison. As the percentage of prison time spent working increased, Duwe and McNeeley (2021) found significant improvements in prison misconduct, post-prison employment, and several measures of recidivism.

Employment. Some studies indicate that participation in structured activities while incarcerated can also improve employment once released. First, some employment programs have been found to improve post-release employment outcomes (Duwe & Clark, 2014; Steurer et al., 2001; Tyler & Kling, 2007). For example, those who participated in Minnesota's EMPLOY program had 83% higher odds of finding employment, while the odds of finding employment were nearly four times higher among those who completed the program (McNeeley, 2022a). Second, prison jobs have been shown to improve post-release employment outcomes. For example, in a multistate study, Visher et al. (2011) found that individuals who had prison work experience reported more time employed since their release from prison. Another study showed that those who spent a larger portion of their sentence working a prison industry job had better employment outcomes, including earning higher wages (Duwe & McNeeley, 2020). Finally, other programs, including substance abuse treatment, therapeutic communities, and cognitive-behavioral therapy, have also been found to improve employment and earnings among formerly incarcerated people (e.g., Duwe & Clark, 2017; Jensen et al., 2020; Prendergast et al., 2004; Welsh & Zajac, 2013).

However, this literature is mixed in that other work has shown null associations between prison programming and post-release employment (e.g., Jensen et al., 2020; McNeeley, 2023; Moore et al., 2018; Ramakers et al., 2015). Importantly, many of these

studies used binary measures to capture participation in programming. Therefore, it is possible that the relationship between in-prison programming and post-release employment depends on dosage.

Mortality. A growing body of literature has focused on the health of formerly incarcerated people during reentry, including mortality. This work suggests some types of legitimate prison activities may reduce risk for mortality. For example, a study of people released from Norwegian prisons (Bukten et al., 2022) found higher mortality rates among those housed in high-security units; the authors suggested this relationship may be due to restricted activities in these units. Given that mortality is typically associated with educational attainment (e.g., Centers for Disease Control and Prevention, 2017; Masters et al., 2012; Olshanksy et al., 2012), substance use (Chang et al., 2015; Tverborgvik et al., 2023), and employment (Aram et al., 2020; Tverborgvik et al., 2023), we would expect participation in work or programming while incarcerated to be negatively associated with mortality. However, few mortality-focused studies have included program participation. Lize and colleagues (2015) found that receiving addiction treatment in prison reduced the odds of suicide but not homicide. In contrast, McNeeley et al. (2023) found no relationship between mortality and participation in programs. As with the programming-employment research, these studies have relied on binary measures of program participation; it is possible that incorporating measures of dosage may reveal a more nuanced relationship between programming and mortality.

The Current Study

The literature reviewed above suggests idleness (i.e., non-participation in structured prison activities such as work, education, or other programming) is associated

with negative incarceration experiences and poor reentry outcomes; on the other hand, participation in such activities is associated with positive reentry experiences. Therefore, this study tests whether the amount of time spent idle while incarcerated is related to post-release outcomes including recidivism, employment, and mortality. In doing so, this study is the first, to our knowledge, to simultaneously evaluate these three post-release outcomes. Moreover, by examining the total amount of confinement time in which individuals were involved in structured activities such as prison labor, education classes, programming and treatment, we use a broader, more comprehensive measure of dosage than prior research.

Data and Method

The sample for this study consisted of 77,625 releases from Minnesota prisons between January 1, 2010, and December 31, 2021. Due to limitations described below with the employment data, we limited our sample to people admitted to prison on or after January 1, 2006, who were also released from prison during the 2010-2021 period. Because some people were released multiple times during the 12-year period, our sample contained 41,724 unique individuals.

Outcome Measures

As noted above, our three outcome measures are post-release employment, recidivism, and mortality. To measure employment, both prior to admission and after release from prison, we obtained state unemployment insurance (UI) data from the Minnesota Department of Employment and Economic Development (DEED). These data contain individual-level labor information, including hours worked and wages earned, reported by employers to DEED.

While the DEED data capture critical employment information on individuals, there are several caveats with these data. First, the DEED data do not include any labor (or compensation for that labor) not reported to DEED, which can occur in situations where employees are paid "under the table" for their work. Second, because the DEED data are compiled on a quarterly basis, information is not available on the specific date(s) when former prisoners entered and/or exited a job. Finally, the first year for which individual-level DEED data are currently available on incarcerated individuals is 2005. Given the impact of pre-prison employment on post-release employment outcomes (Duwe and Clark, 2017b), we limited our sample to individuals admitted to prison on or after January 1, 2006. Using the DEED data, we measured whether individuals obtained employment (dichotomized as "1" for employment and "0" for unemployment) during the year prior to prison admission and for the year after release.

In this study, we defined recidivism as a reconviction for any criminal offense following release from prison. We collected recidivism data through December 31, 2022. We obtained electronic data on convictions from the Minnesota Bureau of Criminal Apprehension. The main limitation with using these data is that they measure only reconvictions that took place in Minnesota. Because subjects in this study were released between January 2010 and December 2022, the follow-up time for recidivism ranged from 1-12 years.

We obtained mortality data from the Minnesota Department of Health for the individuals in our sample through the end of October 2022. We created three outcome variables with the mortality data. First, all-cause mortality measures whether an individual died following their release from prison, regardless of manner or cause of

death (coded as 1) or survived until the end of the follow-up period (coded as 0). Second, unnatural deaths indicate whether the individual died of homicide, suicide, or accident (see Graham, 2003; coded as 1) or survived until the end of the follow-up period (coded as 0), with natural or undetermined causes of death excluded from the analysis. Finally, natural deaths indicate whether the person died of natural causes such as age or disease (coded as 1) or survived until the end of the follow-up period (coded as 0). For the mortality analyses, we included only the most recent release from prison when individuals in our sample were released multiple times during the 2010-2021 period.

Participation in Prison Labor and Programming

Although much is often made about the impact of program volunteerism on recidivism outcomes, prior research on sex offender and substance use disorder (SUD) treatment has shown that mandatory interventions can be just as effective as voluntary programming (Anglin, Brecht, & Maddahian, 1989; Grady, Edwards, Pettus-Davis, & Abramson, 2012; Knight, Hiller, Broome, & Simpson, 2000; McSweeney, Stevens, Hunt, & Turnbull, 2007; Mitchell et al., 2007). Moreover, similar results have been observed for people released from Minnesota prisons, the population we examine in this study. In their evaluation of 23 prison-based interventions, which covered a broad array of programs and services beyond SUD and sex offender treatment, Duwe and Clark (2017a) found that voluntary programs were no more effective than those which were mandatory or coercive.

Due to the lack of an observed relationship between volunteerism and program effectiveness, especially for Minnesota's prison population, we did not distinguish whether programming and/or work was mandatory or voluntary. Instead, we created two

variables that broadly measured any participation in programming and/or work in prison, which included education classes, treatment (e.g., substance use disorder and sex offender), programming (e.g., correctional boot camp, faith-based, employment, and cognitive-behavioral interventions), and prison labor. Accordingly, we operationalized idle time as the absence of involvement in structured programs, classes, services, and activities, which is consistent with how it is measured by the Minnesota Department of Corrections (MnDOC) in its annual performance reports (Minnesota Department of Corrections, 2023). The first variable measured the total amount of time that individuals were involved in programing and work. To make the results from the statistical analyses easier to interpret, we rounded the number of days involved in programming and work to the nearest month. The second variable measured the proportion of prison time that was spent in programming and work relative to the total amount of confinement time. For example, if an individual was confined for 300 days and was involved in programming and/or work for 200 of those days, then the value for this variable would be 67 percent.

Control Variables

In an effort to isolate the impact of programming and work on the three post-release outcomes, we included a number of control variables that are either known or hypothesized to have an impact on employment, recidivism or mortality. The data source for these control measures (aside from pre-incarceration employment and prior criminal convictions) was the MnDOC's management information system. As mentioned above, we measured whether individuals were employed, per the UI data, in the year prior to their prison admission. Because educational achievement has been linked to both employment and recidivism outcomes (Duwe & Clark, 2017b; Lockwood et al., 2012), we created an

ordinal variable that measured whether individuals had less than a secondary degree, a secondary degree, or a post-secondary degree or certificate.

We accounted for criminal history, the strongest predictor of recidivism (Caudy, Durso, & Taxman, 2013), by including variables measuring the total number of criminal convictions and admissions to prison. We also included measures for gang (i.e., security threat group or STG) involvement, prison misconduct, prison admission type (new court commitment versus probation and parole violators), offense type, commitment county (Twin Cities metro area versus Greater Minnesota), length of stay in prison, and whether individuals were discharged or released to community supervision because prior studies have indicated these variables are significant predictors of recidivism for people released from Minnesota prisons (Duwe, 2021; Duwe & Clark, 2013).

To control for the effects of mental and physical health conditions that may have an impact on the post-release outcomes, especially mortality, we included variables that measured the number of mental health concerns and diagnoses recorded by MnDOC staff, the number of physical illnesses and disabilities recorded by staff, the number of health encounters in prison, and the body mass index (BMI) for each individual in our sample. We also included a binary variable for gender that measured whether the individual was female (coded as 0) or male (coded as 1). Race/ethnicity was a series of binary variables indicating whether the individual was White (reference group), Asian, Black, Hispanic or Latino, or Native American. In addition to measuring age (in years) at the time of release from prison, we included a variable for marital status (1 = married; 0 = unmarried).

Analytic Strategy

We estimated several different statistical models to examine the impact of programming and labor participation on the post-release outcomes. For post-release employment, we estimated a logistic regression model in which obtaining employment within one year after release was the binary dependent variable while the independent variables were those described above.

For the analyses focusing on recidivism and mortality, we used a competing-risk regression model. Because mortality prevents the occurrence of recidivism, we estimated a competing-risk regression model, using the Fine and Gray (1999) method, in which recidivism was the failure variable while all-cause deaths was the competing event variable. For the analyses focusing on unnatural deaths, natural death was the competing event variable while unnatural death was the failure variable. Likewise, unnatural death was the competing event variable while natural death was the failure variable in the analyses that examined natural deaths.

Results

As shown in Table 1, which describes our sample, the vast majority of releases from prison were men, approximately half were Non-Hispanic White, and 35 was the average age at release. A little more than 40 percent were committed to prison from the Twin Cities metro area, 10 percent were married, and nearly 40 percent were sentenced directly to prison. The individuals in the release sample had, on average, 14 criminal convictions, 3 prison admissions, and almost 4 misconduct convictions while in prison. Approximately two-thirds of the sample did not have any noted mental health concerns, while more than 80 percent did not have any physical health concerns or disabilities.

Almost one-third of the sample was serving time for a violent offense, roughly one-fourth had a noted STG affiliation, and more than 90 percent were released from prison to correctional supervision.

Table 1. Sample Descriptive Statistics

Predictors	*Predictor Description*	*Mean*	*SD*
Programming/Work (Months)	Number of months involved in work and/or programming	10.510	19.989
Programming/Work (Proportion)	Proportion of prison involved in work and/or programming	0.529	0.344
Employment Year Before Prison	Employed in the year prior to admission to prison	0.386	0.487
Gender (Males)	Males = 1; Females = 0	0.906	0.292
White	Non-Hispanic White = 1; Other = 0	0.497	0.500
Black	Non-Hispanic Black = 1; Other = 0	0.316	0.465
Native American	Non-Hispanic Native American = 1; Other = 0	0.117	0.321
Hispanic	Hispanic = 1; Non-Hispanic = 0	0.049	0.216
Asian	Non-Hispanic Asian = 1; Other = 0	0.021	0.145
Age at Release	Age (in years) at Release	35.023	10.224
Married	Married = 1; Unmarried = 0	0.103	0.303
Total Convictions	Total Criminal Convictions	14.438	12.029
Prison Admissions	Number of admissions to prison	3.252	2.856
New Commit	Admitted to prison as a new court commitment	0.380	0.485
Twin Cities Metro Area	County of commitment from the Twin Cities metro area	0.394	0.489
Person Offense	Serving sentence for a violent/person offense	0.276	0.447
Sex Offense	Serving sentence for a sex offense	0.101	0.301
Drug Offense	Serving sentence for a drug offense	0.240	0.427
Property Offense	Serving sentence for a property offense	0.161	0.368
DWI Offense	Serving sentence for driving while intoxicated (DWI)	0.076	0.265
Education Level at Intake	Education Level at Intake	1.720	0.546
Less than Secondary Degree	Less than a secondary degree = 1	0.333	
Secondary Degree	High school degree or GED = 2	0.619	
Post-Secondary Degree	Post-secondary degree/certificate = 3	0.048	
Body Mass Index	Body mass index	28.583	5.368
Number of Health Concerns	Number of physical health concerns	0.228	0.536
Number of Health Encounters	Number of health service encounters in prison	23.086	34.837
Mental Health Criteria	Mental health criteria, ranging from 0-7	0.558	0.916
STG Affiliation	Security Threat Group (STG) = 1; Other = 0	0.264	0.441
Misconduct Convictions	Number of prison misconduct convictions	3.260	10.539
Length of Stay (Months)	Length of stay in prison (months)	13.306	16.217
Unsupervised Release	Released from prison without any community supervision	0.082	0.275
Post-Release Employment 1 Year	Employment within first year after release from prison	0.432	0.495
Post-Release Reconviction	Reconviction following release from prison	0.619	0.486
Post-Release Death	Deceased after release from prison	0.060	0.237
N (Releases)		77,736	
N (Individuals)		41,787	

Notes: SD = Standard Deviation; GED = General Educational Development

Two-thirds of our sample had at least a secondary degree at the time of admission to prison, and 38 percent had been employed, according to the UI data, during the year prior to admission. At 43 percent, the first-year employment rate following release was higher, which is consistent with existing research (Duwe & Clark, 2017b; Lalonde & Cho, 2008). The reconviction rate was 61percent among the 77,625 releases, while the post-release mortality rate among the 41,724 individuals was 6 percent, with about 60 percent attributable to unnatural causes.

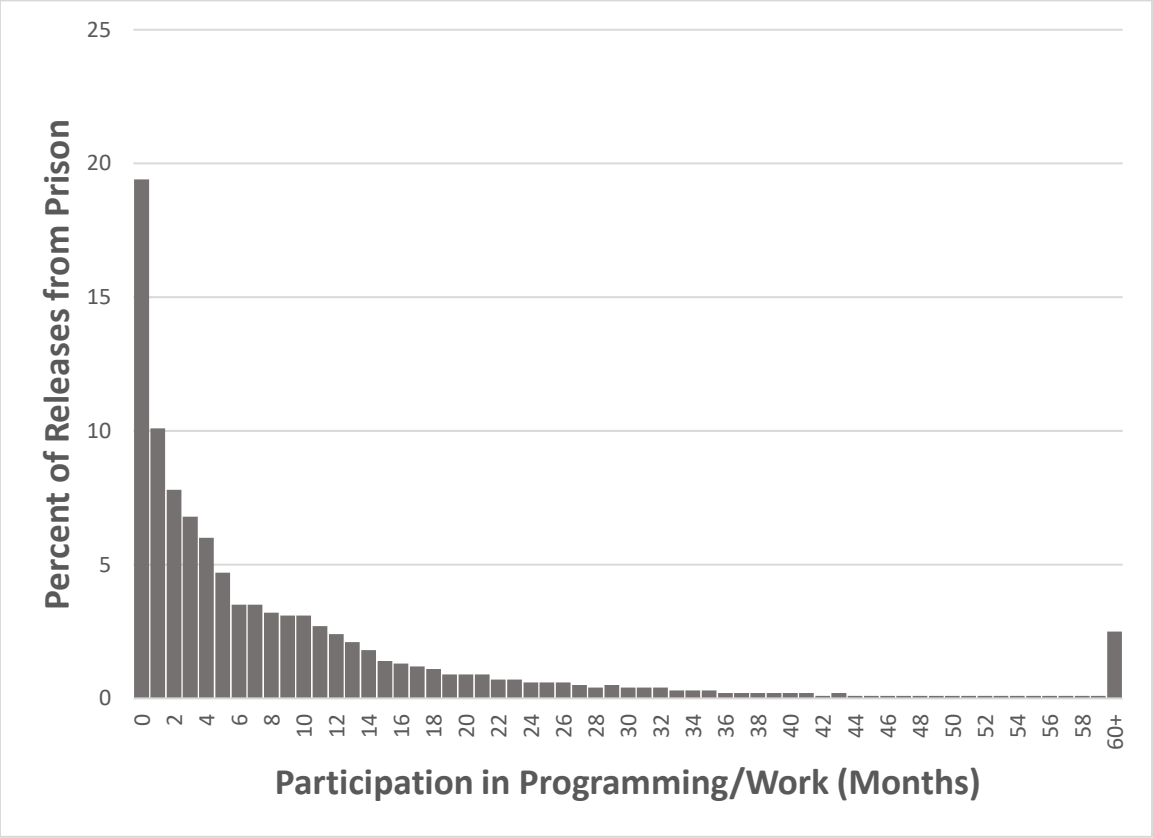

Figure 1. Number of Months Participating in Programming and/or Work

The average length of stay in prison was 15 months. On average, people in prison spent a little more than 10 months in programming and/or work. Meanwhile, the average

proportion of confinement time spent in programming and/or work was 52 percent. As shown in Figures 1 and 2, neither measure of programming and/or work was normally distributed.

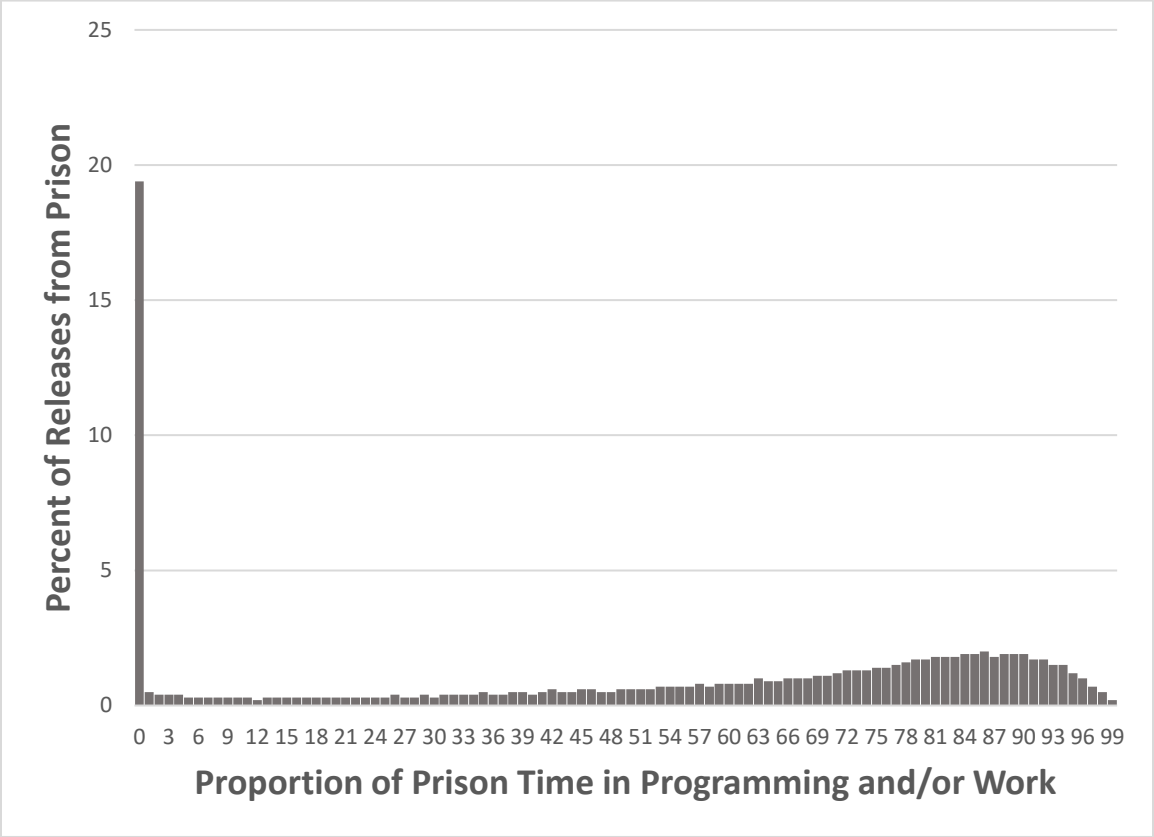

Figure 2. Proportion of Prison Time Participating in Programming and/or Work

Although the average time in programming and/or work was more than 10 months, the median was 4 months. As Figure 1 reveals, 19 percent of the releases were idle during their confinement, and 50 percent spent less than four months in programming and/or work. Likewise, although 64 percent was the median for proportion of time in programming/work, Figure 2 shows that 19 percent were idle. Further, a little more than one-fourth of releases were involved in programming/work for less than 20 percent of their confinement time, while it was less than 50 percent for almost two-fifths of the sample.

Effects of Programming/Work on Post-Release Employment, Recidivism and Mortality

The results from the four statistical models, which are presented in Table 2, show that the amount of time in programming/work was significantly associated with better post-release employment, recidivism and mortality outcomes. The findings suggest that an additional five months spent in programming/work increased the odds of finding a job within

Table 2. Regression Models Predicting Post-Release Employment, Recidivism and Mortality

Predictors	*Employment*[1]		*Recidivism*[2]		*Natural Deaths*[2]		*Unnatural Deaths*[2]	
	SE	OR	SE	SHR	SE	SHR	SE	SHR
Programming/Work (Months)	0.002	1.007**	0.001	0.992**	0.006	1.012	0.006	0.986*
Programming/Work (Proportion)	0.000	1.003**	0.000	0.999**	0.001	0.997**	0.001	0.999
Prior Employment	0.016	3.036**	0.009	0.975**	0.059	0.756**	0.053	0.948
Gender (Males)	0.029	0.989	0.022	1.236**	0.105	0.907	0.088	1.011
Black	0.020	0.936**	0.013	1.084**	0.062	0.700**	0.052	0.790**
Native American	0.027	0.659**	0.018	1.148**	0.139	1.327**	0.109	1.406**
Hispanic	0.037	0.763**	0.020	0.809**	0.115	0.572**	0.085	0.500**
Asian	0.055	0.661**	0.035	1.071*	0.352	1.324	0.119	0.455**
Age at Release	0.001	0.982**	0.001	0.969**	0.004	1.090**	0.003	0.999
Married	0.026	0.941*	0.015	0.967*	0.082	0.821*	0.078	0.858
Total Convictions	0.001	1.001	0.001	1.017**	0.003	0.997	0.002	1.016**
Prison Admissions	0.004	1.025**	0.002	1.042**	0.014	1.028	0.012	1.031**
New Court Commitment	0.018	0.944**	0.011	0.957**	0.074	0.924	0.054	0.863*
Twin Cities Metro Area	0.017	1.238**	0.010	0.923**	0.069	0.918	0.075	1.347**
Person Offense	0.025	0.976	0.014	1.042**	0.132	1.126	0.085	1.013
Sex Offense	0.033	1.279**	0.011	0.570**	0.124	0.807	0.074	0.475**
Drug Offense	0.026	1.035	0.015	1.062**	0.117	1.001	0.087	0.997
Property Offense	0.028	0.825**	0.019	1.196**	0.138	1.100	0.097	1.044
DWI Offense	0.036	1.080*	0.020	0.952*	0.201	1.562**	0.124	1.021
Education Level at Intake	0.015	1.210**	0.009	0.973**	0.050	0.869*	0.055	1.149**
Body Mass Index	0.001	1.002	0.001	1.005**	0.006	1.025**	0.005	1.005
Number of Health Concerns	0.016	0.832**	0.010	1.058**	0.061	1.512**	0.052	1.200**
Number of Health Encounters	0.000	0.999*	0.000	0.997**	0.000	1.003**	0.001	1.000
Mental Health Criteria	0.009	0.895**	0.006	1.041**	0.035	0.979	0.033	1.141**
STG Affiliation	0.020	1.039	0.013	1.095**	0.094	0.869	0.085	1.224**
Misconduct Convictions	0.001	0.992**	0.000	1.006**	0.003	1.006	0.003	1.000
Length of Stay (Months)	0.002	1.001	0.001	0.996**	0.005	0.980**	0.004	1.009
Unsupervised Release	0.032	0.601**	0.022	1.176*	0.087	0.750*	0.089	1.005
Constant	0.066	0.558**						
N	77,625		77,625		41,724		41,724	

Notes: SE = Standard Error; OR = Odds Ratio; SHR = Sub-distribution Hazard Ratio; DWI = Driving While Intoxicated; STG = Security Threat Group

[1] Logistic Regression

[2] Competing-Risk Regression

** $p < .01$

* $p < .05$

the first year of release by 3.5 percent, decreased the hazard of reconviction by 4 percent, and lowered the risk of unnatural death by 7 percent.

Although our absolute measure of time spent in programming/work did not have a significant effect on the risk of natural death, our relative measure had a significant effect on this outcome as well as those for post-release employment and recidivism. A 10-percentage point increase in the proportion of confinement time involved in programming/work increased the likelihood of securing post-release employment by 3 percent, reduced the hazard of reconviction by 1 percent, and lowered the risk of natural death by 3 percent. The proportion of confinement time spent in work and programming did not have a significant effect on the risk of unnatural deaths.

Comparison of Post-Release Outcomes

Aside from involvement in programming/work, there were only a few variables that yielded positive results for all three outcomes. Educational achievement increased the odds of post-release employment, and it lowered the risk of recidivism. It had opposite effects, however, for natural and unnatural deaths. That is, although greater educational achievement lowered the risk of natural death, it was associated with an elevated risk for unnatural death.

Despite not having a significant effect on unnatural deaths, pre-prison employment was associated with better employment, recidivism, and natural mortality outcomes. While the benefits of prior work experience are not surprising, these results may also reflect better mental and physical health for individuals who have been connected to the labor market. Indeed, mental and physical health concerns observed during imprisonment had negative effects, for the most part, on all three post-release outcomes. Whereas physical health concerns increased the risk for both types of post-release mortality, those for mental health only had an impact on

unnatural deaths, which is likely due to the association with suicides and fatal drug overdoses.

The total number of convictions, prison admissions and a reported gang affiliation significantly increased the risk of recidivism and unnatural deaths. Given that unnatural deaths include victims of homicide, this finding may also reflect the overlap between offending and victimization that has long been observed within the literature (Sampson & Lauritsen, 1990). Because victims and offenders share similar characteristics and engage in many of the same behaviors, maintaining a deviant lifestyle, which is reflected in the increased risk for recidivism, is also associated with an elevated risk for violent victimization.

The employment and recidivism outcomes were significantly worse for people identifying as Black, Native American, and Asian in comparison to Non-Hispanic White individuals. Yet, consistent with prior research (Binswanger et al., 2013; Pizzicato et al., 2018; Rosen et al., 2008; Spaulding et al., 2011; Testa et al., 2018), post-release mortality risk was significantly lower among Black, Hispanic, and Asian people than among Non-Hispanic White individuals. Native American people had significantly worse outcomes for all of the post-release measures, which is likely tied to other disparities that have been observed among the indigenous population. Prior research on individuals identifying as Native American has documented higher rates of violence and substance abuse (Beauvais, 1997; Perry, 2004); lower levels of educational attainment, employment and income (Liebert, 2018); and lower rates of physical activity, health care participation (e.g., cancer screenings), having a personal doctor or health care provider, and forming a health plan (e.g., Adakai et al., 2018; Cobb et al., 2014).

Other predictors had mixed results for the outcome measures. For example, although marriage was a buffer against recidivism and mortality risk, it was also associated with reduced odds for post-release employment. Similarly, people committed from the Twin Cities metro area had better results for recidivism and employment but had a greater risk for unnatural death. People who were younger at the time of release were more likely to not only obtain post-release employment but also to recidivate. On the other hand, older individuals at the time of release had a greater risk of natural death.

While it is well-known that people in prison for sex offenses have a relatively lower risk for general recidivism (Durose & Antenangeli, 2021), our results indicated they also had better post-release employment and unnatural mortality outcomes. Their reduced risk for general reoffending may be due, at least in part, to less criminal history (Alper & Durose, 2019). A shorter history of criminal offending may be indicative of a more conventional, less risky lifestyle that translates to better post-release employment and mortality outcomes.

Conclusion

The findings reported here suggest that what people do, or do not do, while they are confined in prison has significant implications not only for whether they recidivate or find employment after getting released, but also how long they live. While idleness has been found to increase the risk of violent and frequent prison misconduct (Duwe, 2020), involvement in rehabilitative programming and prison work has been shown to reduce the risk of violent victimization in prison (McNeeley, 2022b). The results shown above suggest the extent to which people are involved in work and programming while they are incarcerated can also have longer-lasting effects following their release from prison.

Nearly one-fifth of the individuals in our sample did not work or participate in any programming while they were incarcerated. The findings suggest that if these individuals had been involved in work/programming for even half of their confinement time, which was close to the overall average, it would have increased their odds for post-release employment by 15 percent, decreased their risk for recidivism by 5 percent, and lowered their risk for natural death by 15 percent. Alternatively, if these individuals had been involved in work/programming for only four months, which was the median for the sample, it would have improved the outcomes by 3 percent for employment, 3 percent for recidivism, and 6 percent for unnatural death.

Limitations

Because our study focused on idleness and programming/work within Minnesota, the findings may not be fully generalizable to prison systems across the U.S. While we examined recidivism and mortality for up to 12 years after release from prison for some individuals, which is a strength of our study, we did not have access to community-based data, such as housing stability and the availability of healthcare, that likely had some influence on the results reported here. Further, the employment data we used did not include labor in which individuals were paid "under the table" for their work. We also did not examine the quality of the programming/work in which people were involved while incarcerated. The findings from prior research indicate, however, that Minnesota's prison system contains a number of programs and interventions that improve post-release employment and recidivism outcomes for its incarcerated population (Duwe & Clark, 2017a; 2017b).

It is also possible the results observed here are due, at least in part, to individuals self-selecting to participate in programming and/or work. Due to resource limitations, however,

many individuals confined in Minnesota's prison system are never given the choice to work or participate in programming. Moreover, it is worth reiterating that prior research on Minnesota's prison population has shown that mandatory programs are just as effective as those that are voluntary (Duwe and Clark, 2017a). As discussed in more detail below, we suggest that correctional systems can achieve better post-release outcomes by not only ensuring that sufficient resources are available to those confined in prison but also by incentivizing participation in programming/work.

Policy Implications

Despite these limitations, the results hold important implications for correctional policy and practice. After all, the findings suggest that minimizing, if not eliminating, idleness is critical to achieving better outcomes. The policy solution is therefore seemingly simple—provide everyone confined in prison with opportunities to be involved in prison employment and programming. The reality, however, is more complicated.

Prison systems in the U.S. generally lack the funding, infrastructure, and resources to provide work and programming opportunities for nearly everyone who is incarcerated. To be sure, the U.S. spends an estimated $40 billion each year on its state and federal prison systems (Henrichson & Delaney, 2012), which is a massive public investment. Yet, relative to the size of the U.S. prison population, which numbers more than one million people on a given day (Carson, 2022), this investment may be insufficient.

But even if U.S. prison systems were adequately funded, correctional facilities often lack the physical space to deliver programming. Most prisons in the U.S. were built decades ago, and very few, if any, were designed to accommodate the delivery of programming. Instead, the design and operation of prisons have emphasized isolation, security, and control.

Moreover, providing programming to people confined in prison is contingent on having enough security staff available. Despite the decline in the nation's prison population since the late 2000s, correctional systems have struggled to achieve adequate staffing levels. The emergence of COVID-19 led not only to a sharp drop in the U.S. prison population (Carson, 2022), but also to severe staffing shortages for many state prison systems.

In addition to these long-standing barriers, prison systems often lack a broad incentive structure that effectively fosters greater participation in programming and/or work. For example, the 2018 First Step Act (FSA) sought to incentivize participation in programming for those in federal prison by offering early release time credits to individuals who complete risk-reduction interventions. While the preliminary evidence suggests FSA has been successful in motivating more individuals to participate in programming (National Institute of Justice, forthcoming), many people in federal prison will never be eligible for the early release incentive, per the statute, due to the type of offense they are serving.

Significantly reducing the warehousing problem would likely require not only a greater investment in programming and work opportunities for those in prison, but also major structural changes in how prison systems operate. To ensure that programming resources and staffing levels are more in line with the number of people confined in prison, it will likely be necessary to further reduce the size of prison populations. To this end, reforms in sentencing and supervision revocation policies would be needed to lower admissions to prison, whereas greater use of programming-based early release incentives would generate more releases while also helping address the warehousing problem. Smaller prison populations may help alleviate some of the problems associated with staff shortages, but prison systems would still need to invest more in staff recruitment and retention.

Moreover, to help address the lack of physical space and staff resources, prison systems should also consider relying more on programming delivered virtually through electronic devices such as tablets or kiosks. Just as tablets and kiosks have been used to facilitate video visits, this technology could also be used to deliver virtual programs, including education or treatment programming (Cortina, 2022; Duwe & McNeeley, 2021; Field, 2015). However, this technology has some limitations, including costs. The tablets themselves as well as in-tablet purchases are cost prohibitive to many incarcerated persons (Cortina, 2022; Finkel & Bertram, 2019). Greater access to technology can also introduce new security threats to institutions, including instances where incarcerated persons have learned to hack tablet systems (e.g., Boone, 2018). However, there may be greater risk in depriving incarcerated persons from access to technology as many will eventually be released to a society that is increasingly digital and reliant on smartphones (Jewkes & Johnston, 2009). Creating smaller prison systems with sufficient staffing levels and program resources would likely be beneficial not just for the incarcerated individuals, but also for staff. The evidence presented here suggests that prison can be criminogenic, and even harmful, for individuals living there with little or nothing to do. The available evidence also suggests that prison can be harmful for the staff who work in correctional facilities. Indeed, research has long shown that correctional officers experience a relatively high level of stress on the job (Dowden & Tellier, 2004), which leads to high rates of absenteeism, burnout and turnover (Brower, 2013). The stress that is seemingly inherent to work as a correctional officer has also been linked to a number of adverse mental and physical health outcomes, including higher rates of post-traumatic stress disorder (PTSD), depression, anxiety, substance abuse, sleep difficulty, and suicide (Brower, 2013). Given that research suggests that individuals who live and work

in prison share some of the same stresses and strains of the incarceration experience, it is reasonable to posit that staff who work in facilities with higher idle rates may be subject to increased stress and worse job and health outcomes.

To our knowledge, existing research has yet to examine whether these job and health-related outcomes for correctional officers vary according to the facility, or perhaps even housing unit, where they work. Do correctional officers who work in facilities, or housing units, that prioritize programming have better job and health outcomes than their counterparts who work in locations in which warehousing is more commonplace? What impact does the prevalence of programming and/or work opportunities have on the culture of a housing unit, facility or, more broadly, the entire system? Future research should begin exploring questions such as these, in addition to examining the system-wide effects of the prison experience on incarcerated populations. This line of research would address key gaps within the literature and, in doing so, significantly advance what is known about correctional theory, policy and practice.

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