THE EFFECT OF DRUG TREATMENT ON INMATE

MISCONDUCT IN FEDERAL PRISONS

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ABSTRACT

This paper employs a large sample to empirically evaluate the Federal Bureau of Prisons' substance abuse treatment program's effectiveness in reducing prisoner misconduct. Results show that program graduates are 74 percent less likely to engage in misconduct over a 14-month period than a comparison group. This benefit is shared by male and female inmates alike. The substantial magnitude of the effect shows that prison-based substance abuse treatment programs provide an effective management tool to correctional administrators.

INTRODUCTION

Prison inmate misconduct is a serious concern for correctional managers and administrators. Inmate misconduct disrupts the order of the institution, endangers the lives of both inmates and staff, and results in considerable economic costs (Lovell & Jemelka, 1996). But there is little research to date asking the practical question of what programs, if any, reduce the incidence of misconduct. This paper addresses this question by exploring whether the Federal Bureau of Prisons' residential drug treatment program reduces inmate misconduct. It is hoped that these results will be useful to corrections professionals as well as to the wider audience of social scientists interested in this important topic.

Before discussing prior research, readers should understand the nature of prisoner misconduct. Misconduct is defined here as an infraction of a law or administrative rule by a prison inmate. Examples of common offenses include refusing to work, smoking in an area where it is prohibited, and refusing a direct order from staff. Serious misconduct such as committing an assault or using drugs is relatively rare (less than 10 percent). If found guilty, inmates face a variety of sanctions ranging in seriousness from a loss of recreation privileges to a loss of time off for good behavior. Despite these penalties, the majority of federal prisoners in our sample have committed at least one misconduct during the course of their incarceration. With this background in mind, we turn now to review prior misconduct research to identify those factors which have been found to be predictive of misconduct. Any attempt at understanding the effect of prison programs on misconduct must control for such factors.

Prior research has demonstrated that the frequency of misconduct is highest early in the

sentence, typically reaching its peak six to nine months into the sentence, then falling steadily

with the passage of time (Maguire, 1992; Toch, Adams, & Grant, 1989; Wright, 1991; Zamble,

1992).   Inmate misconduct rates, particularly for individuals with short sentences, fit an inverted

U-shaped curve (Flanagan, 1980). Besides the passage of time, a number of other factors have

been shown to correlate with misconduct.   Most of these other factors are from cross-sectional

research. Two of these factors are age and sentence length (Brown & Spevacek, 1971; Flanagan,

1980; Flanagan, 1983; Goetting & Howson, 1986; Myers & Levy, 1978). Being young and

having a longer sentence are correlated with higher rates of misconduct. The positive correlation

between sentence length and misconduct seems obvious since inmates with longer sentences

have more opportunity to commit misconduct than inmates with short sentences. However,

when the frequency distributions of misconduct over time are compared for inmates with short

and long sentences, the positive correlation between sentence length and misconduct persists

even when opportunity — that is, time at risk for misconduct — is controlled.

Some researchers have also found that race and criminal history are correlated with

misconduct (Myers & Levy, 1978; Toch, Adams, & Greene, 1987; Wright, 1989). However, the

existence of a relationship and the nature of the relationship to misconduct is not consistent

across studies.

Research examining the relationship between gender and misconduct has looked not only

at correlates of misconduct but also the type of misconduct. While the correlates of misconduct

appear to be the same for men and women, the nature of the misconduct does not. Published

research shows that female inmates commit infractions less frequently and that the type of

infraction is less serious in nature than that committed by male inmates (Craddock, 1996; Faily &

Roundtree, 1979; Harer & Langan, 2000; Ruback & Carr, 1984). This observation has

interesting implications for the argument that drug treatment programs which were originally

designed for male inmates are inappropriate for female inmates (Langan & Pelissier, 2000;

Miller, 1984; Wellisch, Anglin, & Prendergast, 1991). If so, then the drug program examined

here may differentially impact men and women's misconduct, even though the correlates of

misconduct do not differ. Of course, this discussion begs the question of whether programs do,

in fact, have an effect on misconduct.

Most prior research on misconduct has ignored the question of program effects, although

a few studies focusing on some other topic such as prison crowding have included program

participation as a control (e.g., Gaes & McGuire, 1985). Our search of the literature identified

only two studies focusing specifically on the impact of programs on misconduct. The first

looked at the relationship between rule infraction and participation in a set of programs which

allowed inmates to have more frequent and more intimate contact with family members and

friends than was ordinarily permitted (McCain & McNally, 1982). McCain and McNally

hypothesized that these programs would provide an incentive to refrain from engaging in

misconduct. They failed to find support for this hypothesis in their data. The second study

examined the relationship between participation in prison industries and rule infractions

(Maguire, 1992). Maguire proposed that the chief mechanism by which prison industries might

suppress rule infractions was by reducing time spent idle. She interpreted her results as

providing limited support for the ability of prison industries to reduce misconduct. Taken

together, these two studies do not offer much hope that programs can affect misconduct. But

readers should note that prior research on federal inmates found evidence suggesting that

participation in a similar prison-based drug treatment program reduces misconduct among maximum security penitentiary inmates (Innes, 1997).

With the proliferation of drug treatment programs in the Federal Bureau of Prisons and state prison systems, researchers are provided with the opportunity to look at the effects of such programs on in-prison behavior such as misconduct. If prison-based programs intended to affect post-release behaviors also affect in-prison behaviors then these programs should be acknowledged for providing an effective inmate management tool for correctional administrators.

PROGRAM DESCRIPTION

The program examined here is the Federal Bureau of Prisons' drug and alcohol treatment program (DAP). This relapse-prevention based residential program was implemented at a few select prisons in the late 1980's. The drug and alcohol treatment program (DAP) subsequently gained administrative and political support enabling a rapid expansion to 42 federal prisons by 1998. The purpose of the program has never been explicitly related to the reduction of misconduct. Rather, the program's goal is to reduce both post-release substance use and recidivism. But it makes sense that changes the inmate makes, both cognitively and emotionally, during the treatment process would have an impact on his or her behavior before release from prison. And there are several reasons for supposing that this voluntary program may effect such a change in inmates. First, the program is quite intense, and this intensity is maintained for some time, as the program typically lasts about nine months. Second, the underlying philosophy of the treatment program asserts that individuals must assume personal responsibility for their behavior.

Thus, while individuals completing the drug treatment program are expected to assume

responsibility for decisions related to substance use and criminal behavior after release, they are

also taught to practice this general philosophy of personal responsibility while still incarcerated

(see Pelissier et al., 1998 for further details on the DAP).

DATA AND METHODOLOGY

Prior research has found that the frequency of misconduct is a U-shaped curve, spiking

early, then gradually dropping throughout the remainder of the sentence. The presumed decline

of misconduct over time is important to our analysis because it implies that misconduct rates

after graduation from the substance abuse treatment program will be lower than those before

program enrollment even if the program has no effect. Addressing this issue requires a design

which can disentangle the effects of the passage of time from program effects. To this end, the

sample consists of two groups: subjects who completed treatment and comparison subjects who

did not participate in the DAP program. The impact of the treatment program can be isolated

from the effects of time by determining whether treatment subjects experienced a greater decline

in misconduct after graduation than comparison subjects.

Of course the comparison subjects do not have a graduation (from the program) date

because they did not participate in the program. This problem is overcome by assigning a faux

graduation date to comparison subjects through a two-step procedure. First, comparison and

treatment subjects are matched on term length. Second, the comparison subjects are assigned a

faux graduation date that would allow them to have the same length of time before and after

graduation as their corresponding treatment subject. For example, a treatment subject who

served a total of 24 months would be matched with one or more comparison subjects who also

served a total of 24 months. If this treatment subject graduated from the program ten months

prior to release from prison, then the matched comparison subjects were assigned a faux

graduation date which was ten months prior to their release. Twelve percent of the treatment

graduates were dropped from the study because there was no matching comparison subject. An

analysis of possible bias revealed that being male, having a short sentence and having no history

of violence increased the likelihood of being dropped. The following analysis compares

misconduct occurring between graduation and release, for treatment and comparison subjects.

The average length of this period is 14 months.

Treatment subjects were selected to participate in this research because they had

volunteered for, and subsequently graduated from the DAP. About 60% of DAP participants

graduated. Treatment subjects had graduated from one of 20 programs between June 1992 and

August 1996 at minimum, low and medium security institutions. Comparison subjects were

selected during the same time period from a pool of inmates who qualified for the treatment

program by having a sentence length of 18 months or longer, and who also voluntarily completed

a brief survey in which they admitted to a history of substance abuse. The comparison group

consists of inmates who were eligible for treatment and had treatment available, but chose not to

volunteer for treatment. The sample used for the analyses consists of 600 treatment and 451

comparison men, and 98 treatment and 112 comparison women.

Logistic regression is used to predict our dependent measure of whether or not an inmate

engaged in misconduct after graduation. The independent variable of greatest interest is whether

or not the subject graduated from the substance abuse treatment program. We also include an interaction term for gender and treatment to address the concern that treatment programs which were originally designed for male inmates fail to meet the special needs of female inmates. Other independent variables are included because prior research has shown them to be correlates of misconduct. These include age at the time of graduation, race, severity of offense for which inmate is currently incarcerated, history of previous commitment, sentence length, history of violence, and the rate of misconduct prior to graduation. A variable measuring the length of time between graduation and release from prison is also included. This control is necessary despite the fact that subjects were matched on term length because differences in the amount of time after graduation results in differences in time at risk for misconduct.

Selection bias is a common problem in program evaluation research. Selection bias may occur where subjects are not randomly assigned to treatment and comparison groups. Since random assignment was not an option available to us, the inmates who volunteered for the DAP may differ from the comparison group in their likelihood of engaging in misconduct. We use the propensity score technique to disentangle the effects of the DAP from inherent group differences (Rosenbaum & Rubin, 1983; Rubin, 1997). Our propensity score was developed using predictors of treatment volunteerism and represents the probability of volunteering for and entering in-prison drug treatment. This propensity score is then used as a covariate in the analyses of treatment effects. Although the propensity score is used as if it were the only confounding covariate, it in fact represents a set of confounding covariates. These covariates include background factors as well as attitudinal measures such as motivation for change (Details about the models used to create the propensity score are available from the authors).

RESULTS

Descriptions and coding for all variables in the logistic regression model are displayed in

Table 1. The results of the logistic regression on misconduct are presented in Table 2. The

bottom part of Table 2 provides a number of indicators of the fit of the model. Taken together,

the concordant pairs, Sommer's D, and Hosmer-Lemeshow goodness of fit statistics show that

the model is appropriate for these data.

{Tables 1 & 2 about here}

The variable indicating whether the subject was a treatment program graduate is

statistically significant, and the negative sign indicates that graduation from substance abuse

treatment is correlated with a reduction in misconduct. Subtracting one from the odds ratio gives

the percent difference in the probability of having a misconduct after graduation. These results

show that the probability of having a misconduct for substance abuse treatment program

graduates is reduced by 74 percent. The coefficient for the gender-treatment interaction term is

not statistically significant, indicating the program's benefit is shared by males and females alike.

Our results for age and prior misconduct are consistent with prior research. Older

individuals are less likely to engage in misconduct after graduation such that a one-year

difference in age is associated with a five percent decrease in the likelihood of misconduct. In

addition, individuals with higher rates of misconduct before graduation are more likely to engage

in misconduct after graduation. Also significant is the variable representing the number of months incarcerated after graduation. This variable is included to control for opportunity. It simply shows that the more time subjects spend in prison after graduation the greater the likelihood of misconduct. None of the other predictors are statistically significantly correlated with misconduct.

DISCUSSION

Knowledge of whether programs can reduce prisoner misconduct is invaluable to the safe and orderly management of prisons. This study sought to contribute to this knowledge by examining the effectiveness of the Federal Bureau of Prisons' substance abuse treatment program in reducing misconduct. Results show that program graduates had a significant reduction in misconduct when compared with inmates who did not participate in the program. In the period between graduation from the program and release from prison - averaging 14 months - program graduates were 74% less likely to engage in misconduct than the comparison group. Our results also show that this benefit was realized by both men and women. We conclude that these results provide compelling evidence that substance abuse treatment programs can foster a safer, more orderly prison environment by reducing the incidence of misconduct among both male and female inmates.

This study has a number of advantages. First, the sample size is large and diverse - as subjects are drawn from 20 minimum, low and medium security prisons across the nation. Second, a sufficient number of women are included to allow for an examination of whether the

program benefits only men, or whether the program benefits both men and women. Third, our

finding of a program effect is greatly strengthened by the fact that we employed a propensity

score technique to address the problem of selection bias often faced in evaluation research.

Finally, the examination of a program directed at a population of substance abusers

speaks to contemporary concerns about the role of treatment in addressing the nation's serious

drug problem. Indeed, the findings are all the more remarkable because they show that

rehabilitation need not be relegated to juveniles or first offenders, but that it is also tenable for a

population of adult offenders. This argument becomes even more compelling when considered

in the context of the larger project to evaluate the Bureau's drug treatment program. Researchers

using these data have found the Bureau's program has beneficial effects after subjects are

released from prison, including reductions in both recidivism and drug use (Pelissier et al., 1998).

Taken together, the results of these studies strongly suggest the correctional community look to

the potential benefits of a well designed and implemented drug treatment program.

REFERENCES

Brown, B. S., & Spevacek, J. D. (1971). Disciplinary offenses and offenders at two differing correctional institutions. Correctional Psychiatry and Journal of Social Therapy, 17, 48-56.

Craddock, A. (1996). A comparative study of male and female prison misconduct careers. The Prison Journal, 76(1), 60-80.

Faily, A., & Roundtree, G. A. (1979). A study of aggressions and rule violations in a female prison population. Journal of Offender Counseling, Services & Rehabilitation, 4(1), 81-87.

Flanagan, T. J. (1980). Time served and institutional misconduct: patterns of involvement in disciplinary infractions among long-term and short-term inmates. Journal of Criminal Justice, 8, 357-367.

Flanagan, T. J. (1983). Correlates of institutional misconduct among state prisoners. Criminology, 21(1), 29-39.

Gaes, G., & McGuire, W. J. (1985). Prison violence: the contribution of crowding versus other determinants of prison assault rates. Journal of Research in Crime and Delinquency, 22(1), 41-65.

Goetting, A., & Howson, R. M. (1986). Correlates of prisoner misconduct. Journal of Quantitative Criminology, 2(1), 49-67.

Harer, M. D., & Langan, N. P. (2000). Gender Differences in Predictors of Prison Violence: Assessing the Predictive Validity of a Risk Classification System (Unpublished

Manuscript). Washington, DC: Federal Bureau of Prisons.

Innes, C. (1997). Patterns of misconduct in the federal prison system. Criminal Justice
Review, 22, 157.

Langan, N. P., & Pelissier, B. M. (2000). Gender Differences among Federal Prisoners in
Drug Treatment (Unpublished Manuscript). Washington, DC: Federal Bureau of Prisons.

Lovell, D., & Jemelka, R. (1996). When inmates misbehave: the cost of discipline. Prison
Journal, 76(2), 165-179.

Maguire, K. (1992). Prison Industry: The Effect of Participation on Inmate Disciplinary
Adjustment. , State University of New York, Albany.

McCain, J. A., & McNally, R. B. (1982). Social programs and correctional control in a
maximum security environment: the case of Attica. Journal of Offender Counseling, Services &
Rehabilitation, 103-110.

Miller, R. E. (1984). Nationwide profile of female inmate substance involvement. Journal
of Psychoactive Drugs, 16(4), 319-326.

Myers, L. B., & Levy, G. W. (1978). Description and prediction of the intractable inmate.
Journal of Research in Crime and Delinquency, 15, 214-228.

Pelissier, B. M., Gaes, G. G., Camp, S. C., Wallace, S. B., O'Neil, J. A., & Saylor, W. G.
(1998). TRIAD Drug Treatment Evaluation Project: Six-Month Interim Report . Washington,
D.C.

Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in
observational studies for causal effects. Biometrika, 70, 41-55.

Ruback, R. B., & Carr, T. S. (1984). Crowding in a woman's prison: attitudinal and

behavioral effects. Journal of Applied Social Psychology, 14(1), 57-68.

Rubin, D. B. (1997). Estimating the causal effects from large data sets using propensity scores. Annals of Internal Medicine, 127, 757-763.

Toch, H., Adams, K., & Grant, J. D. (1989). Coping: Maladaptation in Prisons. New Brunswick, NJ: Transaction.

Toch, H., Adams, K., & Greene, R. (1987). Ethnicity, disruptiveness, and emotional disorder among prison inmates. Criminal Justice and Behavior, 14(1), 93-109.

Wellisch, J., Anglin, M. D., & Prendergast, M. L. (1991). Drug Abuse Treatment for Women in the Criminal Justice System . UCLA Los Angeles, California: UCLA Drug Abuse Research Group.

Wright, K. N. (1989). Race and economic marginality in explaining prison adjustment. Journal of Research in Crime and Delinquency, 26(1), 67-89.

Wright, K. N. (1991). A study of individual, environmental, and interactive effects in explaining adjustment to prison. Justice Quarterly, 8(2), 217-242.

Zamble, E. (1992). Behavior and adaptation in long-term prison inmates: descriptive longitudinal results. Criminal Justice and Behavior, 19(4), 409-425.

AUTHORS' NOTES

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Table 1: Description of Variables in Logistic Regression

		(n = 1,261)	
Variable	Coding	Mean	SD
Misconduct after Graduation	(1=Yes, 0=No)	0.20	0.40
Received Treatment	(1=Received Drug Treatment, 0=Did Not)	0.55	0.50
Gender Is Male	(1=Male, 0=Female)	0.83	0.37
Gender-treatment Interaction	(Gender X Received Treatment)	0.48	0.50
Propensity for Entering Trtmnt	(Interval Level)	-0.25	1.20
Time Served in Years	(Interval Level)	33.69	19.04
Mths in Prison after Graduation	(Interval Level)	14.32	10.87
Age in Years at Graduation	(Interval Level)	36.12	8.72
Race Is Black	(1=Black, 0=White)	0.36	0.48
Race = Asian/Native American	(1=Asian or Native American, 0=White)	0.03	0.16
Prior Incarcerations	(0=None, 1=Little, 2=Much)	1.11	0.89
Severity Current Crime	(0=Low, 1=Medium, 2=High, 3=Maximum)	1.34	1.01
Prior Violence	(0=None, 1=Little, 2=Much)	0.66	0.84
Previous Misconduct - Low	(1=1 Misconduct or less per Year Prior to Graduation, 0=None)	0.21	0.41
Previous Misconduct - High	(1=More than 1 Misconduct per Year Prior to Graduation, 0=None)	0.14	0.35

Table 2: Coefficients, Standard Errors, and Odds Ratios from
Logistic Regression Predicting Misconduct

Variable	b	SE(b)	OR
	(n = 1,261)		
Intercept	-0.930	0.488	
Received Treatment	-1.362**	0.479	0.26
Gender Is Male	-0.222	0.290	0.80
Gender-treatment Interaction Term	0.816	0.484	2.26
Propensity for Entering Treatment	0.116	0.085	1.12
Time Served in Years	0.005	0.006	1.01
Months in Prison after Graduation	0.070**	0.009	1.07
Age in Years at Graduation	-0.051**	0.011	0.95
Race Is Black	0.049	0.170	1.05
Race Is Asian or Native American	-0.077	0.560	0.93
Prior Incarcerations	0.127	0.106	1.14
Severity of Current Crime	-0.046	0.089	0.94
Prior Violence	0.041	0.109	1.04
Previous Misconduct - Low	0.667**	0.201	1.95
Previous Misconduct - High	1.350**	0.216	3.86

-2 Log Likelihood
   Intercept Only   1255.891
   Intercept and Covariates   1021.700
Concordant Pairs   78.7%
Somer's D   0.577
Hosmer-Lemeshow
  Goodness-of-Fit   5.6661 with 8 DF (p=0.6846)
Area Under the ROC   0.788

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