DIGGING DEEPER: EXPLORING THE VALUE OF PRISON-BASED DOG HANDLER PROGRAMS

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ABSTRACT

As U.S. correctional systems continue to rollout evidence-based programs and practices, the question of the utility for "complementary" programs that do not directly address recidivism reduction remains generally in question. Survey results have shown that across the country most prisons have a variety of programming efforts, including some form of prison-based animal program (PAP), although the purpose and outcomes associated with such programs is largely unexplored. This research attempts to address a gap in the literature by evaluating the intermediate outcomes associated with the operation of a prison-based dog handler program within prisons across Washington State. We hypothesize that participation in the dog-handler program will result in in-program and post-program reductions in the rates of serious and violent infractions, inmate filed grievances and sanctions imposed on inmates. Using propensity score matching to identify a matched comparison group, we compared 1,001 inmates in a pre-test, post-entry design, aimed at measuring change across the four outcomes. Results indicated that inmates exposed to the dog handler program experienced statistically significant improvement in three of four areas. The implications for these findings and the need for further research are explored.

Introduction

As part of the Washington State Department of Corrections (WADOC) *Sustainability in Prisons Project*, the majority of Washington prisons offer a dog training and/or adoption program. The programs aim to build offender accountability and skills, while providing a needed service to the community. The program, along with other sustainable programs such as horticulture and endangered species restoration programs, are considered "complementary" programs to an array of evidence-based offender change programming efforts that have recently been adopted under legislative mandate. Program operations vary by facility, but include training and developing service dogs to assist those with disabilities (Cedar Creek, Monroe, Mission Creek and Washington Corrections Center), as well as working with troubled dogs to make them adoption ready. The dog adoption program is available in six male facilities across the state.

Washington prisons are not alone in their use of prison-based animal programs (PAPs). Furst (2006) identified 71 different programs operating in 36 U.S. states, although the types of programs vary and include dog handler programs, equine programs, general livestock management and even domestic cat programs. Despite the prolific use of these programs, very little is known about the impact of programs on offender behavior while in the institution, or if positive effects do exist, if they extend beyond the prison walls in the form of recidivism reduction. Research to date has been limited by small sample sizes, reliance on internal file data and anecdotal stories, and the use of surveys to measure inmate and staff perceptions of the various programs (Furst, 2006; Bachi, 2013)

The purpose of this outcome evaluation is to determine if WADOC inmates that participate in the various dog-handling programs experience fewer infractions, less grievances and improved behavior across the facilities. Using record data of 1,001 inmates in a matched treatment and control group design, this research aims to address the question of whether operation of the dog programs

creates a safer and healthier prison environment among the participant inmates, as compared to those inmates that do not participate in the program.

Literature Review:

The idea of creating and operating prison based animal training and companion programs originates from the medical field where animal-assisted therapy (AAT) programs are widely utilized to address a myriad of health issues such as depression, abuse, and aging disorders (Furst, 2006). The use of the AAT is considered therapeutic, and in some cases is even used as part of a clinical technique. Animals are known to have a calming effect, and it is not uncommon to see dogs and cats in nursing homes, hospitals, and increasingly in places of work and even elementary schools (as visiting pets).

In the prison environment the introduction and training of animals (primarily dogs) is generally not offered as a therapeutic milieu, but rather as a community service and to assist prisoners with social reintegration (Mulcahy & McLaughlin, 2013). Commonly referred to as prison-based animal programs (PAPs), such efforts are generally concentrated around dog-training/handling programs, taming of wild horses, farm animals and even domestic cats.

Furst (2006) and Bachi (2013) maintain that through the eyes of correctional administrators, PAPs serve multiple purposes. It is believed that PAPs provide some level of rehabilitation function for inmates, some programs generate revenue for the prison (e.g. the taming and eventual sale of horses), the programs build ties to the community, inmates learn a valuable vocational skill, and such programs may lead to healthier prison environments (Deaton, 2005). Although not developed as a therapeutic intervention, early results of PAPs, most often collected through survey results or directly through researcher observation, revealed an increase in offender self-esteem, displays of greater patience and compassion, and increased levels of responsibility and even autonomy (Cushing &Williams, 1995; Harbolt & Ward, 1991).

It is important to note that PAPs are not a new or trendy correctional programming effort. Strimple (2003) traced dog-based programs and interventions back to 1919 in an eastern state prison. In her national survey of state correctional administrators, Furst (2006) found that the first documented PAP program (livestock care) began in Wisconsin in 1885, with several other programs built throughout the early 1900's. A strong surge in PAPs took hold over the past few decades however, with 48 programs established since 1990 (Furst, 2006). The proliferation of the programs can be contributed to multiple factors, include the relative inexpensive nature of the programs and the highlighting of such programs on cable television (Animal Planet). It can even be argued that the PAP movement began in earnest in Washington state, when Kathy Quinn and Dr. Leo Bustad (of the Washington State University Veterinary School) began a dog training program at the Washington Corrections Center for Women (WCCW) in Gig Harbor, WA in the 1980's (Strimple, 2003). Although the stories were anecdotal, female inmates reported experiencing stronger self-esteem and learned marketable skills. Quinn and Bustad expanded the program across 17 different institutions based on the results at WCCW.

While recent research has found that many state correctional facilities offer prison-based animal programs, outcomes of these programs have rarely been measured, and those programs that have been evaluated tend to rely more heavily on qualitative methods (Furst, 2006). A recent review of the relevant outcome literature on PAPs found only 19 studies that completed quantitative and/or mixed methods approaches to evaluate program outcomes. The research designs on all projects varied considerably, and suffered from small sample sizes, lack of comparison groups and questionable methodological designs (Bachi, 2013; Mulcahy & McLaughlin, 2013). Of the evaluations of PAPs that have been completed, outcome measures can generally be grouped into the following: measuring recidivism (five studies), measuring changes in disciplinary behaviors (five

studies), emotional/psychological effects (14 studies) and sociobehavioral effects (11 studies) (Bachi, 2013; Mulcahy & McLaughlin, 2013).

Studies of the impact of participation in PAP's on prison-based disciplinary behaviors, such as infractions and grievances, have been minimal and hampered by small study sizes and limited controls. For example, Fournier et al (2007), found a statistically significant reduction in institutional fractions for the dog handlers (treatment) vs. a control group, but with a limited sample of 48 males. The number of institutional infractions as a base rate was very low, and both groups improved from baseline to post-program.

Other research focused on measuring changes in disciplinary behaviors have been mixed, and have lacked official record data in order to draw solid conclusions. Analysis of two separate dog programs conducted by Furst (2007) of both males (n=14) and females (n=15) did not include official record data, and instead provided testimonials by prison administration officials who reported only anecdotal assessments of program success.

One of the earliest evaluations of a PAP was conducted by Moneymaker and Strimple (1991), and included measuring behavior change in 98 male inmates involved with a pet-keeping/vocational training program. In this study the researchers were concerned with levels of participation, rates of termination from the program, work release participation and self-reported indicators such as abstinence from drugs and alcohol. While the authors found high levels of participation and low levels of parole violations, the findings must be interpreted with caution, as no comparison group was utilized and data collection methods were not reported.

Bachi (2013) argues that given the methodologically weak research completed in this area, coupled with the fact that programs continue to expand, "studies should be replicated with larger sample sizes to further clarify the effects of PAPs on rates of disciplinary misconduct" (pg. 60). This research seeks to address a gap in the literature by conducting an evaluation of the WADOC dog

handler program participants against a matched comparison group (n=1,001) across four core behavior domains. To the best of our knowledge, this is the largest study to date on the intermediate effects of PAPs.

Washington DOC Dog Handler Program

The Washington State Department of Corrections (WADOC) is responsible for an average of 16,000 inmates across 12 prisons throughout Washington. Under legislative and administration directive, the WADOC embarked on an aggressive agenda to build evidence-based programs and practices throughout the prison and community settings and to utilize outside evaluators to not only guide the reform process but to measure program outcomes as well. Throughout this effort, the WADOC has maintained that even in light of the evidence-based practices push, there is a role and purpose for what they consider "complementary programs." One such example is the (WADOC) *Sustainability in Prisons Project*, which allows inmates to participate in science and nature programs in the prison environment (http://www.doc.wa.gov/sustainability/) through partnerships with volunteers and local universities. Through this program inmates have the opportunity to participate in a range of programs, including green prisons, raising endangered species (frogs and butterflies), propagating rare native plants, and dog training/adoption programs. At this time, the majority of Washington prisons offer a dog training and/or adoption program. The dog programs aim to build offender accountability and skills, while providing a needed service to the community. The purpose of the program is not therapeutic in nature. In other words, the assignment of a dog to an inmate is not intended to have therapeutic benefit, but rather for the inmate to provide targeted training, grooming, and general care of animal. Program operations vary by facility, but include training and developing service dogs to assist those with disabilities (Cedar Creek, Monroe, Mission Creek and Washington Corrections Center), as well as working with troubled dogs to make them adoption

ready. For purposes of this study, we included both the service dog and adoption programs in our analyses.

Inmates must complete an application to be part of either program. To be eligible, an inmate must have been major infraction (violent, serious) free for the prior six months to application and have had no Class A infraction in the prior two years. Class A infractions include crimes that would be considered serious criminal acts, or felonies. Inmate applicants are subject to medical, mental health and sex offender screening processes to ensure goodness of fit for the program.

Once selected for the program inmates work with volunteer dog trainers from the community that come into the various facilities to teach basic introductory skills such as leash handling, sit/down/stay commands, bail out moves, proper feeding/grooming, and dog interaction and observation behaviors. All dog handlers are assigned reading materials (e.g. "Don't Shoot the Dog") and attend classroom-based trainings whereby they complete twenty separate modules. Topics vary from understanding breeds, to dog attention seeking, aggression towards other dogs and how a dog learns. The inmates maintain journals and inventory sheets as well, and receive $45 a month once they have passed all their skills and knowledge testing. More seasoned dog handlers can obtain "mentor" status at a rate of $50 per month. Mentors must also be major infraction free, successfully trained and supervised at least three dogs, and pass a knowledge/skills test.

In 2013, Administrators from the WADOC initiated contact with WSU Researchers at the Institute for Criminal Justice to explore the possibility of evaluation of the dog programs. This, in part, was driven by need to understand if the programs were effective in addressing their targeted intermediate outcomes of reducing general, serious and violent infractions among inmates, as well as grievances filed by inmates.

Methods

Sampling Frame

Data were acquired from the WADOC administrative database to evaluate the effect of inmate participation in the dog-handling program. According to WADOC records there were a total 597 participants across all facilities that participated in the program. In order to measure the impact of program participation, a comparison group was selected from inmates that were not in the program, but were matched on similar pre-intervention characteristics.

When the "gold standard" of randomized assignment to a correctional program is not available, any and all possible efforts should be made to eliminate selection bias. To address this, Propensity Score Modeling (PSM) was utilized to balance the two study groups on all available measures that possess the potential to systematically bias study findings. PSM is a statistical method that allows one to simulate randomization by balancing the two study groups on pre-intervention characteristics. The first step in identifying the comparison group was determining the mean (average) time from admission to prison and treatment start date for dog training participants. This was an average of 1,583 days. All eligible inmates were incarcerated for at least this duration for the comparison were selected. Key individual indicators were gathered from the Offender Needs Assessment (ONA) interview conducted at prison admission and reassessed periodically. Inmates that did not possess an ONA were also not eligible for study inclusion. The selection yielded a potential of 7,002 comparison group members total.

To control for differences between the treatment and comparison groups, inmates were matched based on their similarities to the treatment group prior to their study entrance date. Specifically, comparison group members that were similar to the treatment participants were selected and included in the study, while unmatched or dissimilar cases were excluded. The match was based

on 40 variables gathered from needs assessment and demographic data, as well as incarceration length, custody level, and pre-intervention, baseline measures of the outcome variables.

Prior to matching, dog program participants differed from the comparison group pool on 30 of the 40 dimensions (75%), justifying the need for matching as there were substantial differences between the two groups. To examine the sensitivity and specificity of the model a Receiver Operating Characteristics (ROC) curve was computed for the multivariate propensity score predicting treatment group assignment. The Area Under the Curve (AUC) estimate was .819, indicating the model and its covariates were collectively strong predictors of group assignment.

Using a matching caliper of .25 as a common support boundary for selecting an adequate match for each program participant, 113 of the 597 initial participants could not be matched with a similar comparison group member, resulting in 18.9% loss which was necessary in order to sufficiently match the two groups. Following the match, there were 484 treatment group members and 517 comparison group members. Post-match, the two groups significantly differed on only 2 of the 40 dimensions (5%), which is the proportion anticipated to be significant based on accepted levels of chance. AUC estimates of the matched model were .503 (CI = .467 – .539), suggesting the included measures no longer predicted group assignment. The results of the match are presented in Table A1 of Appendix.

Sensitivity Tests

Due to the loss of treatment group participants due to lack of an adequate match with the comparison pool sensitivity tests were completed for the 113 dog program participants who were not selected, contrasted with the 484 retained participants. The results of the comparisons can be found in Table A2 of the Appendix. The retained participants differed from the dropped participants on 45% of the 40 bivariate measures, suggesting substantial differences between the two groups.

Examining the measures the two groups differed on indicates that those dropped from the model appear to be lower risk inmates than the inmates that were successfully matched. Retained subjects are higher custody at admission (a lower custody score/number under WADOC supervision indicates a higher security rating) and commit more serious and violent infractions. However, the dropped inmates appear to score higher on drug related needs items.

The finding indicates a selection bias for inclusion in the dog training programs which results in participants who are systematically different from the WADOC inmate population at large. It may be that inmates who self-select into the program are simply lower-risk offenders to begin with. Therefore their removal from subsequent models to get a better match is desirable, and makes those retained more representative of Washington inmates in general.

Measures

Four outcome measures were captured and analyzed to assess the impact of the intervention. These measures, reported as rates, included the following: (1) serious infractions, (2) violent infractions, (3) grievances filed, and (4) number of sanctions imposed. Serious infractions are coded internally by the WADOC, and tend to be infractions that are more aggressive (destroying property, inciting riot, possession of a weapon).

Data on the above measures were collected to assess pre-program behavior, as well as post-entry behavior across the four outcomes. For the comparison group, an enrollment date was replaced with a fixed 1,583 day follow-up. All four outcomes were analyzed as a rate based on exposure time before and after the intervention date. That is, outcomes are measured as the number of events over the number of months incarcerated after the intervention date.

Analytic Plan

Because the Washington inmates studied can reside within the same institutions, possible dependency may exist within each facility. That is, because inmates may share the same prison

environment, their propensity to engage in misconduct might be correlated due to this shared setting. If there is such clustering within facilities without being accounted for, any treatment effect may be due to differences between the facilities, and not due to the treatment itself. To account for this possible bias, random effects regression models were selected to test each of the four outcome measures. For each model, the outcome is regressed on treatment group member status, once with and once without a random effect parameter included representing the categorical facility each inmate may reside at.

Additionally, because the outcome measures are operationalized as rates, they are not sufficiently normal enough for a traditional parametric approach. Rate measures tend to be highly skewed towards higher values, with lower frequencies of events being more common. Outcomes are therefore rank transformed before inclusion in each linear regression. Such transformations are termed the rank transformation (RT) approach, and make the data amenable to a traditional linear regression model (Conover & Iman, 1981; Iman & Conover, 1979). The final model used would be a rank regression, a type of generalized linear model that serves as a nonparametric test.

Results

Serious Infractions

Table 1 contains the results of the two regression models assessing the impact the dog handler program has on serious infractions following the intervention date. Model I is a standard linear regression, whereas Model II contains an added random effect that captures any unexplained heterogeneity due to a shared environment in each facility. The two models were compared with an analysis of deviance goodness-of-fit test. Model II demonstrated a significant improvement over Model I by including the random effect for the institution ($\chi^2 = 28.74$, $p < .001$). Model II is therefore the preferred model.

[Table 1 about here]

Referring to Model II, dog program participation was found to significantly and negatively predict serious infraction rates (B = -0.21, p = .002), suggesting that membership in the program is associated with fewer serious infractions. It should also be noted that the effect size is larger in the random effects model, suggesting that dog handler participants may be situated in facilities with higher serious infraction rates.

Violent Infractions

Table 2 presents the violent infraction models, testing the impact treatment had on violent infractions with and without a random effect for facility. Analysis of deviance goodness-of-fit tests indicated that Model II was an improvement over Model I with inclusion of a random effect (χ^2 = 4.276, p = .039). Referring to Model II, the effect of treatment participation was significant and in the same direction as that found for serious infractions (B = -0.238, p < .001). Program participation is associated with fewer violent infractions during follow up.

[Table 2 about here]

Grievances Filed

Table 3 contains the results of the number of grievances filed by inmates. Analysis of deviance tests indicated that Model II was a significant improvement over Model I (χ^2 = 15.189, p < .001). Referring to Model II, treatment is a significant predictor of grievances (B = -0.179, p = .007). Those in the dog handler's program appear to file fewer grievances posttest.

[Table 3 about here]

Sanctions Imposed

Table 4 presents the sanctions imposed on inmates models. Model II, the random effects model, was found to be a significant improvement over Model I (χ^2 = 5.889, p = .015). However, treatment participation did not significantly predict the number of sanctions received by inmates (*B*

= -0.099, $p = .137$). While the effect size is in the same direction as that of previous models, the effect is small.

[Table 4 about here]

Discussion

Our findings provide strong support for the utility of the PAP in the prevention of prison-based intermediate outcomes. Specifically, significant reductions in three of the four outcomes examined (serious infractions, violent infractions, and grievances filed) were observed. Reductions were also identified in the fourth outcome, sanctions imposed, but the test failed to reach significance. Given the rigorous methods used to collect and analyze the data (i.e. PSM and random effects modeling) it would be difficult to argue that the provision of this program is anything but a promising practice; however, additional confirmation with further study testing sites will be needed to bear that out.

One argument that some would maintain diminishes the impact of our findings was the lack of outcomes with regard to offender recidivism. Given that the program's intent and location, we focused on what the field refers to as "intermediate outcomes" or those not directly related to recidivism. Although recidivism reduction and rehabilitation are common goals of prison-based programs, that is not typically the *only* intent. Evidence of reducing negative/unwanted behavior is a goal of all correctional programs and evidence of effectiveness must not hinge on a simple assessment of recidivism alone.

Infractions, and to a lesser extent grievances, are important outcomes for inmates and correctional staff. The term "intermediate outcome" suggests that the outcome may impact the ultimate goal, recidivism, or it may not. However, we argue that serious and violent infractions have a cost with regard to staff and inmate safety, case management, and will often be criteria for program prioritization for those treatments and services deemed to have a more direct influence on

recidivism.   Reducing serious infractions and grievances by over 10%, as was found in this research, allows for a strong pool of inmates to be considered for further interventions and supports post dog handler programming.

Furthermore, as prisons often backload offender programming (providing interventions in the months just prior to release), programs such as PAP can be important provisions along the continuum of care. While we are not suggesting that a animal care/training program should take the place of cognitive behavioral therapy or substance abuse treatment, certainly there is a place for evidenced-based programs that are intent on improving inmate conduct and safety as a result.

Additionally, prison is a difficult place to learn and not every skill can be instructed in a classroom setting. There are many domains that are outlined for rehabilitation which simply do not have evidence-based, prison-provided interventions to plug in (Wooditch, Tang & Taxman, 2014). In addition, some established programs may be supplemented by those that focus on intermediate outcomes such as these. Skills, such as learning empathy, dealing with others, forming relationships with family and pro-social peers is a difficult concept to fully teach in a classroom setting. However, an inmate's time spent training and being responsible for an animal may be the perquisite or booster needed to enhance program effectiveness and increase responsivity. Given the positive indicators PAP has had on intermediate outcomes related to violence and anti-social behavior, it is hard to argue against the success achieved.

Finally, skills learned should improve offender employability. Participants are responsible for training and maintenance of these animals. Now not every participant will obtain employment in this specific industry, but those in the community will be aware of what these programs offer and an inmate's resume will be bolstered by the skills attained. Obviously additional follow-up is needed in the community to identify the long-term impact of the program and if skills learned translate into greater employment viability.

Limitations

Although relatively comprehensive in our review, there were a few notable limitations. First, our focus was on the intermediate outcomes of infractions and grievances. Minimal attempts to track the impact of animal care programs on recidivism (Moneymaker & Stimple, 1991) have been completed, and Mulchany & McLaughlin (2013) argue that any new attempt at establishing a PAP within a prison should entail an extensive outcome evaluation design from inception.   This is a future goal of the project but one that was not feasible at the time of completion. With that said, prior studies attempts to examine the direct impact of similar programs on recidivism were fought with methodological and sample limitations which will be avoided in future research. We intend to support te positive findings here through further examinations of reconvictions and reentry employment of participants once requisite data can be gathered.

Whenever a statistical technique like PSM is used over a more traditional method like random assignment, it comes with limitations. The first is obviously the unobserved bias that is not accounted for through our pre-intervention measures. We feel the variety and compressive nature of our measures limits the impact of this technical drawback of the PSM method. An issue of greater concern is with regard to the removal of nearly 150 treatment participants in which a comparison subject match was not found. What is a somewhat positive result of our sensitivity analysis is that those removed were notably lower risk. Therefore, it would seem that their removal prevented an evaluation of the "best of the best" inmates, or what is known in the field as "creaming". However, based on our findings it is likely that, at least at the selection process, there may be a bias to provide the opportunity to participate to those of lower risk. Their inadvertent removal from our analysis provides an evaluation sample that is more representative of the general population but one might also question if the "worst of the worst" were allowed to participate would the same results have

been obtained? If it is the case then our findings may not support the general use of the PAP to all levels of inmate risk. Further research is needed with higher risk populations to confirm (or refute) this point.

To reduce the likelihood that findings were as a result of the prison facility environment, we utilized random effects modeling. This form of multilevel regression techniques allowed us to control for the effect of individuals being nested within the facility they reside. The result of this technique is a sort of "general accounting" of the facility-level variance, in which the analyses do not indicate specificities about what makes a given facility more (or less) likely to produce violations or grievances. Although not feasible for the current study, future prison-based evaluations conducted using state-level data sources should make an effort to examine predictors at the facility-level that may contribute to violations and/or program responsivity.

Summary and Future Directions

The intent of the dog-handler programs across multiple WADOC institutions is to build offender accountability and skills, while providing a needed service to the community. This research was not focused on the training of the offender and skill adoption, but rather sought to address whether or not the program created a safer environment in the prison via stronger inmate accountability to their dogs and the institution as a whole.

As the findings above highlight, the program has clearly succeeded in building a higher-level of accountability, as witnessed by the statistically significant decreases in infractions, grievances and sanctions among the dog-handlers. The program lends to a safer and healthier prison environment in those pods and facilities where the programs are offered, at least among this selected population. Further research should include targeting measures of psychosocial changes (via survey assessment) in participants, as well as following the treatment and control group post release to measure for

potential recidivism reductions.

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Tables

Table A1
Match Results (*n* = 1,001)

		Before Matching				After Matching			
		Comparison %/M	Dog Program %/M	χ^2/t-test p value	STD % Diff	Comparison %/M	Dog Program %/M	χ^2/t-test p value	STD % Diff
Measure		92.14	7.86			51.65	48.35		
Custody at admission	≤ 37	55.46	37.86	< .001	45.05	42.55	41.74	.966	1.41
	> 37	34.74	39.36			38.88	39.46		
	> 47	9.78	22.78			18.57	18.8		
Custody post intervention	≤ 37	9.09	16.75	< .001	23.29	10.44	10.12	.41	3.95
	> 37	6.38	5.53			6.19	4.34		
	> 47	84.81	77.72			83.37	85.54		
White		69.98	81.74	< .001	25.89	77.56	79.34	.545	4.32
Never expelled/quit school		26.89	27.3	.866	0.93	28.43	27.27	.735	2.59
Never employed		12.51	6.2	< .001	19.42	9.48	6.61	.122	10.5
No problems while employed		39.23	44.22	.019	10.2	41.01	43.18	.527	4.41
Barriers to employment		36.46	33.5	.161	6.16	32.88	34.71	.586	3.87
Financial issues	Saves money	5.09	3.35	.007	13	3.29	3.93	.822	1.44
	No issues	11.95	8.71			9.09	8.47		
	Problems managing money	82.94	87.94			87.62	87.6		
No employee health insurance		71.12	79.4	< .001	18.38	76.79	77.27	.915	1.15
Friends	Friends willing to help	15.41	14.41	.002	9.84	11.22	14.67	.456	8.69
	Pro social friends	8.84	7.71			9.09	8.26		
	No friends	20.72	17.42			17.99	17.36		
	Unstable relationships	11.61	8.21			9.67	9.5		
	Antisocial friends	41.66	50.08			50.68	47.73		
Occupants of residence	Minor children	19.02	15.91	.067	10.57	17.6	14.88	.485	1.54
	Lives alone	29.45	26.97			25.34	27.89		
	Other	20.44	21.61			19.54	22.11		
	Mother	14.78	18.09			17.8	17.98		
	No current residence	16.31	17.42			19.73	17.15		
Current partner is a positive influence		14.97	26.97	< .001	32.81	23.79	23.35	.928	1.54
Family is a positive influence		29.48	48.58	< .001	41.3	45.65	42.77	.394	5.79
No minor children		66.22	55.28	< .001	23	59.19	57.44	.619	3.55
No current contact with minor child		9.97	12.56	.052	8.58	10.64	11.98	.567	4.25
Alcohol problems ever		64.71	68.01	.115	6.91	67.7	69.01	.706	2.81
Drug problems ever		65.85	79.9	< .001	29.86	78.14	76.65	.626	3.56
Alcohol problems in the last 6 months		26.59	23.45	.104	7.13	20.89	24.59	.187	8.82
Drug problems in the last 6 months		28.62	38.36	< .001	21.38	34.24	34.71	.927	0.99
Means for supporting drug habits	None	24.58	15.08	< .001	26.98	15.86	17.56	.742	2.87

	Legal income	24.65	21.44			24.56	23.35		
	Illegal income	50.77	63.48			59.57	59.09		
Prior treatment for drug use		34.98	53.94	< .001	39.39	51.06	49.59	.686	2.95
Never clean during recent 6 months		37.39	33.67	.078	7.7	34.24	34.09	1	0.31
Documented mental health problems		39.73	36.18	.097	7.26	34.82	36.36	.656	3.23
Mental health outpatient previously		12.07	14.41	.108	7.13	13.54	14.05	.887	1.48
Aggressive or violent behaviors in the community		82.79	77.89	.003	12.87	81.04	78.72	.402	5.8
Aggressive or violent behaviors while confined		35.13	22.95	< .001	25.69	27.85	25.62	.468	5.04
Acceptance of responsibility for behavior	Accepts responsibility	44.19	39.87	.029	9.99	45.07	42.36	.116	3.52
	Superficially accepts responsibility	4.28	3.18			1.55	3.51		
	Does not accept responsibility	51.53	56.95			53.38	54.13		
Needs individual living services		48.07	48.74	.785	1.34	49.13	49.38	.987	0.5
Total days incarcerated		4095.06	2104.08	< .001	82.37	2994.64	2430.39	< .001	26.92
Infraction rate pretest		0.142	0.126	.098	7.05	0.102	0.121	.085	-10.91
Serious infraction rate pretest		0.1192	0.046	< .001	33.9	0.066	0.056	.232	7.56
Grievance rate pretest		0.167	0.136	.01	7.94	0.112	0.148	.018	-15.09
Sanction rate pretest		0.159	0.112	< .001	18.84	0.110	0.117	.543	-3.85
Violent infraction rate pretest		0.013	0.006	< .001	28.68	0.008	0.007	.37	5.67
Age at admission		32.108	33.293	.008	10.63	33.021	33.272	.714	-2.32
Aggressive characteristics scale		2.182	1.686	< .001	28.68	1.839	1.764	.466	4.61
Aggressive motives scale		1.586	1.467	.004	12.22	1.489	1.473	.798	1.62
Antisocial attitudes motive scale		2.091	2.063	.434	3.33	2.023	2.039	.762	-1.91
Antisocial attitudes characteristics scale		1.870	1.564	< .001	15.03	1.688	1.626	.613	3.2
Recent impact scale		1.043	1.460	< .001	27.02	1.305	1.307	.983	.14

Table A2
Sensitivity Tests (*n* = 597)

Measure		Dropped Participants %/M	Selected Participants %/M	χ^2/ t-test p value	STD % Diff
		18.93	81.07		
Custody at admission	≤ 37	21.24	41.74	< .001	54.3
	> 37	38.94	39.46		
	> 47	39.82	18.8		
Custody post intervention	≤ 37	45.13	10.12	< .001	100.71
	> 37	10.62	4.34		
	> 47	44.25	85.54		
White		92.04	79.34	0.003	32.84
Never expelled/quit school		27.43	27.27	1	0.36
Never employed		4.42	6.61	0.515	9.06
No problems while employed		48.67	43.18	0.341	11.05
Barriers to employment		28.32	34.71	0.236	13.53
Financial issues	Saves money	0.88	3.93	0.255	10.84
	No issues	9.73	8.47		
	Problems managing money	89.38	87.6		
No employee health insurance		88.5	77.27	0.012	27.73
Friends	Friends willing to help	13.27	14.67	0.067	15.92
	Pro social friends	5.31	8.26		
	No friends	0.88	2.48		
	Unstable relationships	17.7	17.36		
	Antisocial friends	2.65	9.5		
Occupants of residence	Minor children	60.18	47.73	0.565	1.94
	Lives alone	20.35	14.88		
	Other	23.01	27.89		
	Mother	18.58	17.98		
	No current residence	18.58	17.15		
Current partner is a positive influence		42.48	23.35	< .001	43.07
Family is a positive influence		73.45	42.77	< .001	61.34
No minor children		46.02	57.44	0.036	22.95
No current contact with minor child		15.04	11.98	0.468	9.23
Alcohol problems ever		63.72	69.01	0.33	11.33
Drug problems ever		93.81	76.65	< .001	42.76
Alcohol problems in the last 6 months		18.58	24.59	0.218	14.16
Drug problems in the last 6 months		53.98	34.71	< .001	39.6
Means for supporting drug habits	None	4.42	17.56	< .001	48.91
	Legal income	13.27	23.35		
	Illegal income	82.3	59.09		
Prior treatment for drug use		72.57	49.59	< .001	46.06
Never clean during recent 6 months		31.86	34.09	0.733	4.72
Documented mental health problems		35.4	36.36	0.933	2.01
Mental health outpatient previously		15.93	14.05	0.716	5.35
Aggressive or violent behaviors in the community		74.34	78.72	0.376	10.55

Aggressive or violent behaviors while confined		11.5	25.62	0.002	33.54
Acceptance of responsibility for behavior	Accepts responsibility	29.2	42.36	0.015	28.92
	Superficially accepts responsibility	1.77	3.51		
	Does not accept responsibility	69.03	54.13		
Needs individual living services		46.02	49.38	0.59	6.72
Total days incarcerated		706.41	2430.4	< .001	54.3
Infraction rate pretest		0.149	0.121	0.259	100.71
Serious infraction rate pretest		0.003	0.056	< .001	32.84
Grievance rate pretest		0.082	0.149	0.015	0.36
Sanction rate pretest		0.09	0.118	0.101	9.06
Violent infraction rate pretest		0	0.007	< .001	11.05
Age at admission		33.381	33.273	0.908	13.53
Aggressive characteristics scale		1.354	1.764	0.012	10.84
Aggressive motives scale		1.442	1.473	0.771	27.73
Antisocial attitudes motive scale		2.168	2.039	0.129	15.92
Antisocial attitudes characteristics scale		1.301	1.626	0.098	1.94
Recent impact scale		2.115	1.308	< .001	43.07

Table 1
Serious Infraction Models (*n* = 1,001)

	Model I				Model II			
Measure	*B*	*SE*	*t*	*p*	*B*	*SE*	*t*	*p*
Intercept	0.072	0.044	1.64	.101	0.047	0.071	0.663	.507
Dog Program Participant	-0.149	0.063	-2.361	0.018	-0.210	0.066	-3.182	.002
Current Facility								
Variance of Random Effects							0.037	
Analysis of Deviance Test							28.74	< .001

Table 2
Violent Infraction Models (*n* = 1,001)

	Model I				Model II			
Measure	*B*	*SE*	*t*	*p*	*B*	*SE*	*t*	*p*
Intercept	0.106	0.044	2.421	.016	0.094	0.055	1.704	.089
Dog Program Participant	-0.219	0.063	-3.482	< .001	-0.238	0.065	-3.655	< .001
Current Facility								
Variance of Random Effects							0.012	
Analysis of Deviance Test							4.276	.039

Table 3
Grievances Filed Models (*n* = 1,001)

	Model I				Model II			
Measure	*B*	*SE*	*t*	*p*	*B*	*SE*	*t*	*p*
Intercept	0.067	0.044	1.536	.125	0.064	0.066	0.964	.336
Dog Program Participant	-0.139	0.063	-2.208	.027	-0.179	0.066	-2.697	.007
Current Facility								
Variance of Random Effects							0.028	
Analysis of Deviance Test							15.189	< .001

Table 4
Sanctions Imposed Models (*n* = 1,001)

	Model I				Model II			
Measure	*B*	*SE*	*t*	*p*	*B*	*SE*	*t*	*p*
Intercept	0.032	0.044	0.735	.463	0.025	0.061	0.406	0.685
Dog Program Participant	-0.067	0.063	-1.057	.291	-0.099	0.066	-1.489	.137
Current Facility								
Variance of Random Effects							0.02	
Analysis of Deviance Test							5.889	.015