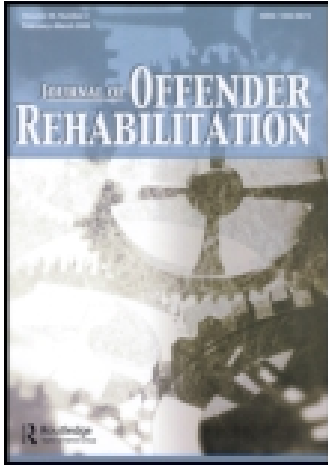


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Bible College Participation and Prison Misconduct: A Preliminary Analysis

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Bible College Participation and Prison Misconduct: A Preliminary Analysis

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We analyzed whether a Bible college program had an impact on prison misconduct by examining 230 offenders in the Texas prison system. Findings suggest participation in the Bible college significantly improved offender behavior, reducing misconduct by one discipline conviction per participant. The results also showed that participation significantly decreased the risk of incurring a discipline conviction, lowering it by 65 percent for minor misconduct, 80 percent for major misconduct, and 68 percent for any misconduct. The findings are consistent with existing research, which has generally found that participation in prison-based programming, including educational and faith-based programs, produces better misconduct outcomes.

KEYWORDS *Bible college, education, faith-based programming, misconduct, prison*

Religious adherents and faith-based practitioners have long proclaimed the belief that all offenders can be transformed. Some of the earliest prisons in America were based on the notion that crime was a moral and spiritual problem, and that prisoners needed religion to reform (Morris & Rothman,

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1998). Intensive religious instruction and training were therefore integral to some of America's earliest correctional facilities (McShane & Williams, 1996). It should not come as a surprise then, that today's prison vernacular and philosophy often draw from religious concepts or perspectives (e.g., corrections, penitentiary, solitary confinement, reform, and restorative justice).

Given the prominence of religion and faith within American correctional systems, religious services and faith-based programs have frequently been used to help improve offender behavior within the institution and in the community following their release from prison. Although a few studies have not found an association between religiosity and prison misconduct (Johnson, 1987; Pass, 1999), others have shown that increased religious involvement decreases disciplinary infractions (Kerley, Copes, Tewksbury, & Dabney, 2010; Kerley, Mathews, & Blanchard, 2005; O'Connor & Perreyclear, 2002). Further, in their evaluation of the faith-based Life Connections Program delivered within the Federal Bureau of Prisons, Camp, Dagget, Kwon and Klein-Saffran (2008) found that participation significantly decreased more serious forms of misconduct but had no impact on minor infractions.

Research has also found that, with a few exceptions (Johnson, 2004; Johnson, Larson, & Pitts, 1997), greater religious involvement in prison is associated with reduced recidivism (Johnson, 2002; O'Connor, 2003; Sumter, 1999). In their evaluation of the InnerChange Freedom Initiative (IFI), a faith-based program implemented by Prison Fellowship Ministries within a Texas correctional facility in 1997, Johnson and Larson (2003) reported that program participation did not significantly lower recidivism for all participants. But in a more recent evaluation of an IFI program in Minnesota's prison system, Duwe and King (2013) found that program participation significantly reduced reoffending. Moreover, Duwe and Johnson (2013) showed the Minnesota IFI program produces a cost-avoidance benefit, decreasing costs to the state by nearly \$8,300 per participant.

Aside from a study by O'Connor, Erickson, Ryan, and Parikh (1997), which found reduced rearrest rates among participants in a master's degree level ministry preparation program, there is very little evidence on the effects of faith-based educational programming, particularly for prison misconduct. Over the last several years, seminary programs for prisoners have been implemented in at least nine states, including California, Georgia, Illinois, Michigan, Mississippi, New Mexico, Tennessee, Texas, and West Virginia. Although not as old as the seminary program started in 1981 by the New York Theological Seminary at Sing Sing prison (Erickson, 2002), the Bible college (BC) that originated at the Louisiana State Penitentiary (popularly known as Angola) in 1995 has been the inspiration for the programs operating in Georgia, Illinois, Mississippi, Texas, and West Virginia.

Graduates of Angola's BC earn a bachelor of science in biblical studies, a 125-credit hour baccalaureate degree. In exchange for an undergraduate education funded at no cost either to the inmate or taxpayers, participants must agree to provide postgraduate services in the facilities where they will be incarcerated. Angola's seminary graduates lead congregations and serve their peers as state-recognized inmate ministers. Angola Warden Burl Cain has argued the BC has figured prominently in the decline in violence and misconduct at the institution since the 1990s (Eckholm, 2013).

In contrast to most correctional programs, which focus strictly on improving behavioral outcomes (e.g., recidivism) for participants, the Angola-style BC anticipates graduates will be agents of broader, positive change at the facilities where they are incarcerated during their postgraduate service. But in order to help bring about prosocial change in other offenders, it is likely that many BC participants must first undergo some type of transformation themselves. To be effective ministers, program participants must set a good example, which includes the absence of misconduct. Because the BC strives to transform the lives of its participants as well as those of offenders who do not participate, its approach is relatively unique among correctional programs.

PRESENT STUDY

In this study, we conduct one of the first evaluations of a faith-based educational program by examining its impact on prison misconduct.¹ Since its inception within the Texas prison system in 2011, more than 150 offenders have enrolled in the BC implemented at the Texas Department of Criminal Justice's (TDCJ) Darrington Unit, a maximum security prison. We control for motivation/volunteerism by focusing only on the offenders who applied to the program. Among the applicants, we used propensity score matching to individually match offenders who entered the BC with those from a comparison group who did not participate in the program. In analyzing the data, we use Cox and negative binomial regression to determine whether BC participation affected both minor and major disciplinary infractions.

In conducting this evaluation, it is important to stress we are not assessing whether the BC's faith-based component per se is responsible for any of the observed misconduct outcomes. Instead, to adequately address this issue empirically, it would be necessary to compare BC participants to a comparison group of offenders participating in a similar, yet secular, educational program. Rather, for this study, we are strictly evaluating whether participation in the BC has affected misconduct outcomes.

In the ensuing sections, we begin by reviewing prior research on prison misconduct. Next, we describe the Darrington BC in greater detail. Following

a discussion of the data and methods used, we present the results from the statistical analyses. We conclude by exploring the implications of the findings for correctional theory and practice.

PRIOR RESEARCH ON PRISON MISCONDUCT

Prison misconduct is generally defined as the failure by inmates to follow institutional rules and regulations (Camp, Gaes, Langan, & Saylor, 2003). Misconduct includes offender behavior that runs the gamut from disobeying orders and possession of “contraband” (i.e., alcohol, drugs, etc.) to assaults against staff and other inmates. Offenders often receive a sanction for rule infractions, including increased incarceration time, which exacts both a human and monetary cost on correctional systems (French & Gendreau, 2006).

Existing research reveals that both individual- and institutional-level factors are associated with prison misconduct. In their meta-analysis, Gendreau, Goggin, and Law (1997) found that antisocial attitudes and behavior, prior criminal history, and age were the strongest individual-level predictors of disciplinary infractions. Reflecting the findings reported by Gendreau et al. (1997), that antisocial companions increases the likelihood of misconduct, several studies have indicated that gang membership (i.e., identification as a member of a security threat group), is positively associated with rule violations (Gaes, Wallace, Gilman, Klein-Saffran, and Suppa, 2002; Tewksbury, Connor, & Denney, 2014). Gendreau et al. (1997) also noted that social achievement (e.g., education, employment, marital status, etc.), early family factors, and race had modest associations with disciplinary infractions.

Research shows that prisons vary in their effect on individual prisoners' likelihood of engaging in misconduct (Camp et al., 2003). Indeed, previous studies suggest misconduct is affected by institution-level factors such as size, location, and security level (Huebner, 2003; Steiner & Woolredge, 2008). Other research indicates disciplinary infractions are influenced by the overall characteristics of the inmates as well as the staff (Camp et al., 2003). Although earlier work has shown custody levels have a minimal impact on misconduct (Camp & Gaes, 2005), a more recent study of Texas prisoners by Worrall and Morris (2011) found that increases in custody levels (i.e., higher levels of risk) were associated with a greater likelihood of rule violations.

In another meta-analysis focusing on what works to reduce prison misconduct, French and Gendreau (2006) concluded that cognitive-behavioral treatment programs are the most effective intervention for curbing disciplinary infractions. Educational/vocational programming, on the other hand, was not found to be associated with a decrease in misconduct

(French & Gendreau, 2006). Whereas Steiner and Woolredge (2008) reported that participation in drug treatment, education, and vocational programming actually increased misconduct in their study, other research has reached a different conclusion. For example, Gover, Perez, and Jennings (2008) found that employment in prison reduced disciplinary infractions. Similarly, in a more recent study by Steiner and Woolredge (2014), they found that the number of hours spent per week in a work assignment was negatively associated with both violent and nonviolent misconduct. Moreover, Steiner and Woolredge (2014) reported that time spent in educational/vocational programming reduced nonviolent misconduct, while recreation time was negatively associated with violent infractions. Relatedly, research also indicates that prison visitation reduces misconduct (Tewksbury & Connor, 2012).

DARRINGTON BIBLE COLLEGE

Sponsored by the Southwestern Baptist Theological Seminary and the Heart of Texas Foundation, the BC was implemented at the Darrington unit in August 2011 (Heart of Texas Foundation, 2013). Graduates of the program earn a bachelor of science in biblical studies, a degree that is fully accredited by both the Southern Association of Colleges and Schools and by the Association of Theological Schools. The degree includes the general education courses of a traditional undergraduate degree, such as English, Western civilization, physical science, and mathematics, as well as courses specific to the biblical studies concentration, such as Virtues of Godly Character, Narrative and Thematic Structure of the Bible, and Apologetics. Conducting the program unapologetically from its own theological orientation, Southwestern faculty teaches the exclusivity of Christ and the infallibility of Scripture.

Inmates throughout the TDCJ system may apply to the BC. Eligibility requires either a high school diploma or GED, an educational attainment (EA) number as a secondary indicator of academic aptitude, a custody level classification of either G2 or G3,² a statement of religious affiliation (which does not impact admission decisions), a commitment to service upon graduation, and at least 19 years remaining on an offender's sentence. Given that offenders are eligible for parole within 5 years of their sentence expiration date and that graduates agree to 10 years of service, the 19-year requirement allows for full completion of the service requirement. No profession of faith is required from applicants as a condition of enrollment in the BC, and participation is completely voluntary.

Chaplains collect applications from eligible offenders within their respective units and submit them to TDCJ for processing.³ For the first cohort, TDCJ received nearly 700 applications, which were pared down to 154.⁴

From these 154, a Southwestern committee selected the initial cohort of 40 students. TDCJ transfers selected applicants from their respective units to Darrington, where the final stage of the process is a personal interview with the BC director and the Darrington warden. At this phase, both the director and the warden, with advisement from assistant wardens, have final veto power over any applicant.⁵ It is worth noting that during the final stage of the selection process wherein both Southwestern and TDCJ choose participants from the pool of applicants, there are no formally promulgated criteria that are systematically applied to the selection of students. As we discuss next, we used propensity score matching in an effort to control for any observable selection bias that might have arisen from a screening process that was largely subjective.

After they enter the program, BC students live among the general population at Darrington, which offers two types of housing to general population inmates: traditional tiers of two-man cells during their first two years in the program, and dorms (or “tanks” as the offenders call them) during their last two years. The dorms hold approximately 60 offenders in partitioned bunks that offer a slight measure of privacy and personal space. Darrington has six of these dorms, including one “faith-based” dorm that provides Christian programming through volunteers operating under the auspices of the chaplain. On a weekly basis, offender participants spend about 15 hours in the classroom and another 25 to 45 hours outside the classroom engaged in coursework.

The BC is now entering its fourth academic year, and the first cohort of students will be graduating soon. The intention of the Heart of Texas Foundation and of Southwestern Seminary has been to deploy graduates as “ministers” throughout the TDCJ system during their decade of postgraduate service. Concrete plans have yet to be finalized, however, for the placement of graduates. It is currently unclear whether graduates will remain at Darrington to assist with the ongoing operations of the BC as tutors and mentors, return to their original units, be deployed in pairs, or go as part of ministry teams of as many as 12. Moreover, while seminary graduates from Louisiana’s Angola—the ostensible model for the Darrington program—lead congregations and perform a range of care-taking tasks as state-recognized inmate ministers, TDCJ policy forbids inmates from holding authority over one another or from forming self-governed congregations.

DATA AND METHODOLOGY

We used a retrospective quasiexperimental design to determine whether participation in the BC has had an effect on disciplinary infractions. The sample for this study consisted of 380 offenders who applied for the program between 2011 and 2014 and were screened by the Southwestern selection

committee. By including only the offenders who applied for the program and made it to this stage of the screening process, we control for whatever effects volunteerism might have on misconduct. Among the 380 applicants during the 2011 to 2014 period, there were 158 who were selected and subsequently enrolled in the BC. While the 380 applicants had to meet security level and education criteria, as noted previously, to be considered for the program, there are likely other factors that influenced which offenders were ultimately selected for the program. Therefore, to control for observable selection bias, we individually matched applicants selected for the program with those who were not through use of propensity score matching (PSM), which we describe next in more detail.

Dependent Variable

The outcome measure in this study is prison misconduct resulting in a discipline conviction that occurs after the time of enrollment in the BC. As noted previously, the BC screens applicants on an annual basis, and offenders selected for the program enroll in January of the following year. For example, the 2017 cohort applied for the program during 2012, and the applicants who were selected for the program enrolled in January 2013. For this cohort, then, we measured postselection misconduct as any discipline convictions that applicants in both the BC and comparison groups received on or after January 1, 2013. We followed up on post-selection discipline through April 2014. While we examine all misconduct resulting in a discipline conviction, we also look at its severity by conducting analyses in which TDCJ classified it as either minor or major misconduct. The decision as to whether an infraction is considered to be minor or major misconduct is based on the severity of the offense, the offender's disciplinary history, and the period of time since the offender's last rule violation. In general, misconduct is more likely to be deemed major when the infraction is more severe, the offender has a longer misconduct record and/or the inmate has recently had a discipline conviction.

Independent Variables

The principal variable of interest in this evaluation is participation in the BC. As a result, all offenders who participated in the BC—regardless of whether they dropped out after enrolling—were assigned a value of “1,” whereas those in the comparison group were given a value of “0.” The other independent variables in our study consist of measures available in the TDCJ database that might have an impact on BC selection and/or post-enrollment misconduct. Table 1 describes the 31 covariates used in the statistical models. We included measures that, according to prior research, are commonly associated with prison misconduct, such as the offender's age, race, marital

TABLE 1 Logistic Regression Model for Bible College Selection

Predictors	Predictor description	Coefficient	SE
Application year	Year in which offenders applied to program	0.306**	0.114
Age at application	Age (in years) at time of application	-0.018	0.015
Minority	Minority = 1; White = 0	-0.221	0.244
Marital status	Married = 1; Unmarried = 0	-0.186	0.319
Religious affiliation	Self-reported religious affiliation; no preference is the reference		
Baptist	Baptist = 1; other = 0	0.473	0.477
Christian nondenomination	Christian nondenomination = 1; other = 0	0.506	0.432
Christian (other)	Other Christian = 1; other = 0	0.680	0.469
Non-Christian	Non-Christian = 1; other = 0	-0.552	0.448
Secondary degree at intake	Secondary degree or higher at intake = 1; less than secondary degree = 0	0.120	0.270
New direct commitment	New direct commitment = 1; other = 0	-0.844*	0.422
Security threat group	Security threat group member = 1; other = 0	-0.418	0.451
Line class	Classification within custody levels		
Line Class L1	Initial classification of newly received offenders at intake	-0.379	0.680
Line Class S3	State approved Trusty 3	-0.090	0.618
Less restrictive minimum	Less restrictive minimum custody = 1; other custody levels = 0	-0.671	0.400
Total prison incarcerations	Number of incarcerations in state prison	-0.225	0.223
Total jail incarcerations	Number of incarcerations in state jail	0.424	0.465
Total offense convictions	Number of offense convictions	0.170	0.322
Total violent convictions	Number of violent offense convictions	-0.400	0.338
Total property convictions	Number of property offense convictions	-0.527	0.389

Total drug convictions	Number of drug offense convictions	-0.255	0.397
Offense type	Murder serves as the reference		
Other violent	Other violent = 1; other = 0	0.353	0.295
Nonviolent	Nonviolent offense = 1; other = 0	-2.571*	1.167
Sentence	Length and type of sentence; 40 years or less is the reference		
Lifer	Life sentence = 1; less than life = 0	-0.170	0.472
Non-life greater than 40 yrs.	Non-life greater than 40 years = 1; other = 0	-0.327	0.410
Time served on current sentence	Number of months between prison admission and application	0.035	0.040
Vocational programming	Vocational programming = 1; other = 0	-0.045	0.378
Educational programming	Educational programming = 1; other = 0	0.232	0.304
Cognitive-behavioral Programming	Cognitive-behavioral programming = 1; other = 0	0.544	0.295
Parenting programming	Parenting programming = 1; other = 0	-0.578	0.885
Prior minor discipline	Number of minor discipline convictions at application	-0.068	0.051
Prior major discipline	Number of major discipline convictions at application	-0.225**	0.095
Constant		-615.352**	230.529
<i>N</i>		380	
Log-likelihood		446.179	
Area under the curve		0.730	
Nagelkerke R^2		0.226	

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

status, education, gang membership, custody level, criminal history, discipline history, and involvement in other institutional programming (e.g., vocational, education, cognitive-behavioral, and parental).

We also included measures for the offender's line class, which is the classification used by TDCJ that is perhaps a more precise indicator of institutional behavior than custody level. Offenders are reviewed every six months to a year, and they move to a better line class with good behavior or to a worse line class for each disciplinary infraction. Custody level, on the other hand, may or may not change with line class changes. In addition to line class, we included measures for time served (from most recent admission to the time of application to the program), admission type, offense type, and type of sentence. To better control for possible selection effects, we also included variables measuring the year offenders applied to the program and religious affiliation due to the educational orientation of the program.

Propensity Score Matching

PSM is a method that estimates the conditional probability of selection to the treatment group given a vector of observed covariates (Rosenbaum & Rubin, 1985). The predicted probability of selection, or propensity score, is commonly generated by estimating a logistic regression model in which selection to the treatment group is the dependent variable. The predictors, on the other hand, should consist of variables that have an impact on the selection process. Once estimated, the propensity scores are then used to match individuals who entered the program with those who did not.

A major advantage with using PSM is that it can simultaneously "balance" multiple covariates on a single composite score. In doing so, it reduces observable selection bias. Moreover, by matching BC participants with non-participants on the conditional probability of entering the BC, PSM helps yield a counterfactual estimate of what would have likely happened to the offenders in the BC group had they not participated in the program.

Although PSM is an effective approach for balancing two groups on observed covariates, it has several limitations. First, because propensity scores are based on observed covariates, PSM cannot control for "hidden bias" from unmeasured variables that are associated with both the assignment to treatment and the outcome variable. Second, there must be substantial overlap among propensity scores between the two groups in order for PSM to be effective. If not, the matching process will yield incomplete or inexact matches. Finally, PSM tends to work best with larger samples (Rubin, 1997). We attempted to address the hidden bias limitation, to the extent possible, by including as many theoretically relevant covariates (31 total variables) as possible in the propensity score model. In addition, as we show later, there was substantial overlap in propensity scores between the BC and comparison group offenders.

Matching Offenders on Bible College Selection

Propensity scores were calculated for the 158 BC participants and the 222 nonparticipants (non-BCs) in the comparison group pool by estimating a logistic regression model in which the dependent variable was entering the BC. The predictors were the 31 control variables used in the statistical analyses (see Table 1). The results show several factors that significantly predicted whether offenders were selected. In Table 1, we see that the odds of BC selection among the 380 applicants were significantly greater for those who had applied more recently, which reflects the fact that recent years have had smaller pools of applications. On the other hand, offenders had a reduced likelihood of selection if they were admitted as a new direct commitment, were serving time for a nonviolent offense, or had prior major discipline convictions.

As shown in Table 2, the difference in mean propensity score between BCs and non-BCs was statistically significant at the .01 level. Still, there was substantial overlap in propensity scores. For example, although not shown in Table 2, the vast majority of offenders in both groups (80% for BC participants and 61% for the non-BCs) had propensity scores greater than 0.3. After obtaining propensity scores for the 380 offenders, a “greedy” matching procedure that utilized a without replacement method was used to individually match the offenders who participated in the BC with non-BCs. BC participants were matched to comparison group offenders who had the closest propensity score (i.e., “nearest neighbor”) within a relatively narrow caliper (i.e., range of propensity scores) of 0.01. Matches were found for 115 of the 158 BC participants, which reflects the trade-off that often occurs between inexact and incomplete matching.

Table 2 presents the covariate and propensity score means for both groups prior to matching (total) and after matching (matched). In addition to tests of statistical significance (t -test p value), Table 2 provides a measure (bias) developed by Rosenbaum and Rubin (1985) that quantifies the amount of bias between the treatment and comparison

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

samples (i.e., standardized mean difference between samples), where \bar{X}_t and S_t^2 represent the sample mean and variance for the treated offenders and \bar{X}_c and S_c^2 represent the sample mean and variance for the comparison group (i.e., untreated) offenders. If the bias value exceeds 20, the covariate is considered to be unbalanced (Rosenbaum & Rubin, 1985).

As shown in Table 2, the matching procedure reduced the bias in propensity scores between the BC and non-BC offenders by 98%. Whereas the p value was .00 in the unmatched sample, it was .90 in the matched

TABLE 2 Propensity Score Matching and Covariate Balance for Bible College Selection

Variable	Sample	Bible college <i>M</i>	Comparison <i>M</i>	Bias (%)	Bias reduction	<i>t</i> -test <i>p</i> value
Propensity score	Total	0.51	0.35	31.18		.00
	Matched	0.45	0.45	0.52	-98.32%	.90
Applicant year	Total	2016.39	2016.07	22.49		.01
	Matched	2016.20	2016.27	4.96	-77.93%	.65
Age	Total	40.52	41.07	5.10		.55
	Matched	40.59	41.16	5.46	7.00%	.61
Minority	Total	0.56	0.61	8.24		.26
	Matched	0.60	0.61	1.66	-79.83%	.89
Married	Total	0.16	0.18	4.33		.63
	Matched	0.18	0.17	2.12	-51.13%	.86
Baptist	Total	0.16	0.13	6.77		.42
	Matched	0.14	0.17	6.82	0.77%	.47
Christian (nondenomination)	Total	0.37	0.27	17.28		.04
	Matched	0.36	0.35	1.70	-90.15%	.89
Christian (other)	Total	0.20	0.13	15.01		.11
	Matched	0.17	0.17	0.00	-100.00%	.86
Non-Christian	Total	0.17	0.36	37.37		.00
	Matched	0.23	0.23	0.00	-100.00%	1.00
Secondary degree at intake	Total	0.67	0.68	1.74		.90
	Matched	0.67	0.68	1.73	-0.15%	.89
New direct commitment	Total	0.85	0.85	0.00		.92
	Matched	0.87	0.87	0.00	0.00%	1.00
Security threat group	Total	0.08	0.12	11.20		.28
	Matched	0.08	0.10	5.77	-48.46%	.49
Line Class L1	Total	0.35	0.28	12.19		.17
	Matched	0.30	0.32	3.54	-70.99%	.67
Line Class S3	Total	0.61	0.68	11.85		.20
	Matched	0.65	0.64	1.70	-85.62%	.89
Less restrictive minimum	Total	0.77	0.83	11.94		.15
	Matched	0.81	0.81	0.00	-100.00%	1.00
Total prison incarcerations	Total	1.30	1.41	12.38		.15
	Matched	1.32	1.31	1.14	-90.78%	.93
Total jail incarcerations	Total	0.06	0.09	7.77		.44
	Matched	0.05	0.07	5.85	-24.77%	.65
Total offenses	Total	2.11	2.61	23.05		.01
	Matched	2.17	2.21	1.93	-91.64%	.85
Total violent	Total	1.60	1.82	13.73		.15
	Matched	1.63	1.56	5.05	-63.23%	.64
Total property	Total	0.23	0.42	23.11		.02
	Matched	0.27	0.34	8.66	-62.53%	.45
Total drug	Total	0.16	0.23	8.22		.34
	Matched	0.16	0.23	8.22		.34

(Continued)

TABLE 2 Continued

Variable	Sample	Bible college <i>M</i>	Comparison <i>M</i>	Bias (%)	Bias reduction	<i>t</i> -test <i>p</i> value
Other violent	Matched	0.15	0.19	5.24	-36.22%	.59
	Total	0.37	0.38	1.69		.85
Nonviolent	Matched	0.34	0.35	1.71	1.67%	.89
	Total	0.01	0.05	23.29		.02
Lifer	Matched	0.01	0.01	0.00	-100.00%	1.00
	Total	0.40	0.35	8.40		.29
41 years or more	Matched	0.38	0.38	0.00	-100.00%	1.00
	Total	0.32	0.35	5.19		.65
Current time served	Matched	0.33	0.36	5.16	-0.74%	.68
	Total	11.75	11.95	2.85		.74
Vocational	Matched	11.76	11.79	0.44	-84.53%	.97
	Total	0.11	0.14	7.57		.36
Educational	Matched	0.09	0.11	5.54	-26.88%	.51
	Total	0.25	0.19	11.66		.21
Cognitive-behavioral	Matched	0.21	0.22	1.99	-82.94%	.87
	Total	0.26	0.22	7.59		.32
Parenting	Matched	0.24	0.26	3.76	-50.49%	.76
	Total	0.01	0.04	17.18		.16
Prior minor	Matched	0.02	0.01	6.82	-60.30%	.56
	Total	2.27	3.10	24.10		.01
Prior major	Matched	2.43	2.53	2.90	-87.95%	.80
	Total	0.75	1.48	34.09		.00
	Matched	0.86	0.90	2.04	-94.01%	.83

Note. Total Bible college = 158; matched Bible college = 115. Total comparison group pool = 222; matched comparison = 115.

sample. In the unmatched sample, there were seven covariates that were significantly imbalanced (i.e., the bias values exceeded 20). But in the matched sample, covariate balance was achieved given that no covariates had bias values greater than 20.

Analysis

We used two statistical models—negative binomial regression and Cox regression—to estimate the impact of BC participation on the three measures of misconduct. To estimate the effects of BC participation on the total number of discipline convictions (minor, major and total) offenders received following program enrollment, we used negative binomial regression since it is designed to analyze count data. We opted to use negative binomial regression because the conditional mean and variance of the three misconduct outcomes were not equal, which is what the other commonly used count data technique—Poisson regression—assumes.

We used Cox regression to analyze the impact of BC participation on the risk of time to a first discipline conviction (minor, major, or any). More

specifically, Cox regression is a survival analysis model that uses both time and status variables to determine not only whether offenders had misconduct but also when they received a discipline conviction. For the analyses presented here, the time variable measures the amount of time from the enrollment date for a cohort until the date of a first discipline conviction (minor, major, or any) or April 30, 2014, for those who did not have any misconduct. Therefore, the misconduct at-risk period ranged from a low of 15 months (the third cohort that entered the BC in 2013) to a high of 39 months (the first cohort that enrolled in 2011). The status variable, meanwhile, measures whether an offender received a discipline conviction (minor, major, or any) during the period in which he was at risk for misconduct. In the analyses presented below, both types of regression models were estimated for each of the three misconduct measures.

RESULTS

As shown in Table 3, 57% of the 115 comparison group offenders had a post-enrollment discipline conviction through April 2014 compared to 24% of the 115 BC participants. For minor misconduct, 47% of the comparison group had a discipline conviction compared to 19% of the BC participants. The rate of major misconduct for comparison group offenders (28%) was more than four times higher than it was for BC participants (6%).

When we look at the total number of postenrollment discipline convictions, we observe similarly large differences between BC and comparison group offenders. By the end of April 2014, the average number of postenrollment discipline convictions for comparison group offenders (1.32) was nearly 4 times the average (0.35) for BC participants.

The Impact of Bible College Participation on Postenrollment Discipline Convictions

In Table 4, we present the results from the Cox and negative binomial regression models for each of the three misconduct measures. Due to the size

TABLE 3 Discipline Conviction Outcomes for Bible College and Comparison Offenders

Type of discipline conviction	Bible college	Comparison	<i>t</i> -test <i>p</i> value
Any Minor Discipline	19.1%	47.0%	0.00
Total minor discipline	0.27	0.90	0.00
Any major discipline	6.1%	27.8%	0.00
Total major discipline	0.08	0.43	0.00
Any discipline	23.5%	56.5%	0.00
Total discipline	0.35	1.32	0.00
<i>N</i>	115	115	0.00

of our sample ($N = 230$) along with the rate of misconduct observed among the BC and comparison groups, an important issue for the Cox regression analyses involves the number of predictors in the model. To avoid biased estimates, unreliable confidence interval coverage, and convergence problems in logistic regression models, prior research recommends a rule of thumb of 5 to 10 events per variable (EPV; Penduzzi, Cocato, Kemper, Holford, & Feinstein, 1996; Vittinghoff & McCulloch, 2007). With 30 predictors, the EPV ranges from 1.3 to 3.1 for the three misconduct outcomes we examined.

In response to these low EPV values, we assessed the sensitivity of the misconduct results by using three different specifications for both the Cox and negative binomial regression models. We estimated models that included: (a) only the BC variable, (b) the BC variable and the propensity score, and (c) the BC variable and 29 of the covariates used in the propensity score model. The misconduct outcomes were statistically significant in each of the 18 models we estimated, and the effect sizes were similar in magnitude across the three different model specifications. As a result, we present only the findings for the models that contained the BC variable. Although we parenthetically note the effect sizes from the other models, the full results from these analyses can be obtained from the authors upon request.

As shown in Table 4, the results from the Cox regression models indicate that participating in the BC significantly reduced the hazard ratio for each of the three misconduct measures. Because BC participants incurred discipline convictions less often and more slowly than the offenders in the comparison group, they survived longer in prison without misconduct. BC participation significantly decreased the hazard by 65% for minor misconduct (65% for Specification 2 and 75% for Specification 3), 80% for major misconduct (81% for Specification 2 and 88% for Specification 3), and 68% for any misconduct (68% for Specification 2 and 76% for Specification 3).

Table 4 shows the results from the negative binomial regression models that estimated the impact of BC participation on the total number

TABLE 4 Impact of Bible College on the Hazard and Prevalence of Discipline Convictions

Models	Minor discipline		Major discipline		Total discipline	
	B	SE	B	SE	B	SE
Cox regression Bible college	0.349**	0.253	0.200**	0.417	0.321**	0.230
Negative binomial regression						
Bible college	-0.833**	0.216	-1.815**	0.326	-1.144**	0.181
Constant	3.13e-09	0.133	-0.291	0.152	0.558	0.105
Log likelihood	-260.633		-181.192		-322.707	
Pseudo R^2	0.027		0.086		0.056	
N	230		230		230	

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

of post-selection discipline convictions. The results indicate that participation in the BC significantly reduced the number of post-enrollment discipline convictions for all three measures, decreasing it by 0.832 for minor misconduct (0.837 for Specification 2 and 0.821 for Specification 3), 1.815 for major misconduct (1.814 for Specification 2 and 1.854 for Specification 3), and 1.144 for all misconduct (1.147 for Specification 2 and 1.183 for Specification 3).⁶

CONCLUSION

The findings revealed that participating in the BC significantly improved offender behavior within the institution, lowering the risk of misconduct by 65% to 80% and reducing the total number of discipline convictions by more than one per participant. These findings are consistent with prior research showing the salutary effects of prison programming on inmate behavior. Although cognitive-behavioral programming has yielded the best misconduct outcomes (French & Gendreau, 2006), others studies have found that educational and faith-based programs can reduce misconduct (Camp et al., 2008; Steiner & Woolredge, 2014). Given the evidence from prior research, it is perhaps unsurprising we found the Darrington BC, a faith-based educational program, to be effective in curbing inmate misconduct.

It is worth pointing out, however, a few limitations with this study. First, while we were able to control for line class and custody level at the time of program selection, we were unable to control for these factors after program selections had been made (i.e., for the analyses estimating the impact of the BC on misconduct). As noted previously, however, offenders do not get moved to a worse line class (and perhaps a higher custody level) unless they incur a disciplinary conviction. Therefore, while the results from the negative binomial regression analyses may overestimate the effects of the BC on misconduct since they looked at all postenrollment discipline convictions, this limitation does not apply to the Cox regression analyses given that they looked only at an offender's first postenrollment discipline conviction. Second, as we noted earlier, this evaluation did not assess whether the faith element of the BC was responsible for the decline in misconduct. This is not to say that the faith factor did not play a role in producing better misconduct outcomes, but simply that we were unable to isolate its effects for this evaluation.

Even with these limitations, we believe the findings presented here hold several implications for correctional theory and practice. First, at a broader level, the results provide additional evidence that offender behavior within prison tends to improve when they participate in programs. Although this study only evaluated whether the Darrington BC had an impact on misconduct, it is possible to speculate why it reduced disciplinary infractions. By participating in the program, offenders increase their religious involvement, which has been shown to be negatively associated with misconduct. But

given that participants spend an average of 40 to 60 hours per week on their coursework, the Darrington BC also provides what is arguably a large “dosage” of programming that significantly curbs the opportunities and amount of time to engage in misconduct. Moreover, because discipline convictions, especially for major infractions, can result in removal from the program, offenders may be less likely or willing to jeopardize their investment or involvement in a conventional goal (i.e., academic degree) by engaging in misconduct. Lastly, considering their collective pursuit of the same conventional goal, program participants may naturally form a group of like-minded individuals who learn prosocial behaviors through positive reinforcement and imitation as well as negative attitudes toward misconduct in prison.

Second, regardless of the reasons why BC participation yielded positive misconduct outcomes, it is important to emphasize that the individual impact on participants is not the overarching goal for the program. Rather, the BC anticipates program graduates will help transform the cultures of the prisons where they are incarcerated, which will lead to, among other things, improved misconduct outcomes overall. To be sure, this is a much higher bar for the program to clear in order to achieve effectiveness (by its own standards). However, the findings shown here suggest it has at least cleared the lower bar by improving the institutional behavior of those who have participated thus far.

Third, even if the BC is not successful in reaching this higher standard of success, this study shows that it improves the behavior of some offenders at Darrington—the program participants—at no additional cost to taxpayers. Many prisoners do not participate in programming while incarcerated (Lynch & Sabol, 2001), often due to limited correctional resources. Therefore, faith-based interventions generally offer a cost-effective alternative because they tend to rely on private funding and community volunteers.

In conclusion, while the present findings are encouraging overall, it should be further examined whether the “faith factor” of the faith-based BC program was the primary source of the behavioral improvement observed among the participating offenders compared to their nonparticipating counterparts. Alternatively, the prosocial outcomes might have been due mostly to the educational and/or other influences than the faith component of the program. Our future study will address this issue by testing whether psychosocial outcomes of the program explain the group differences in misconduct. Regardless, these early results from our ongoing research project on the impact of BC participation on prison misconduct indicate that a faith-based program is likely to be as effective as some secular programs.

NOTES

1. This study is part of an ongoing five-year evaluation research project assessing the influence of prison seminaries at two maximum-security prisons—the Darrington Unit in Texas, and the Louisiana State Penitentiary in Angola, Louisiana.

2. Custody levels within TDCJ range from G1, requiring the least amount of supervision, to G5, which requires the highest level of supervision.
3. Beginning with the second cohort, applications also require a recommendation from the chaplain of the applicant's current unit, although in rare instances another TDCJ staff member, such as a correctional officer, may write the recommendation in lieu of the chaplain.
4. These numbers (both total applications received and application approved by TDCJ) have declined with each subsequent cohort.
5. This summary of the interview process comes from interviews with inmate participants and Darrington Bible College faculty/administration.
6. Because the misconduct follow-up periods varied among the 230 offenders, we also estimated negative binomial models in which we included a predictor that measured the logged days these offenders were at risk for a discipline conviction. The BC variable remained statistically significant in these models, and the inclusion of the time-at-risk predictor had little or no impact on the size of the BC coefficients. The time-at-risk predictor, which was positively associated with all three misconduct measures, reached statistical significance in the minor and major misconduct models but was not statistically significant in the total misconduct model.

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