Correlates of Drug Treatment Outcomes for African American and White Male Federal Prisoners: Results from the TRIAD Study

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ABSTRACT

The purpose of this study was to compare the effects of family background and pre-incarceration socioenvironmental characteristics on three-year post-release drug use for African American and white prison-based drug treatment participants in order to explain the previously found disparities in rates of three-year post-release drug use between the two groups. There were two hypotheses: 1) for both groups, family background and pre-incarceration socioenvironmental characteristics would predict post-release drug use more strongly than sociodemographic characteristics and pre-incarceration behaviors, and 2) the predictors would be different for each group. The sample included 279 African American and 512 white male treatment participants who were supervised by a U.S. probation officer following incarceration. Event history analyses were used to model time to first drug use during postrelease supervision. The results indicated that none of the family background factors or socioenvironmental variables predicted postrelease drug use. The variables predictive of drug use for one or both racial groups were limited to sociodemographic characteristics and preincarceration beavhiors such as age at release, prior commitments, and pre-incarceration employment. Yet, there were no significant between-group differences for these predictors. The authors concluded that future assessment of the effects of socioenvironmental variables on postrelease drug use likely requires evaluation of the postrelease social environment at the time of release.

Keywords: Drug treatment outcomes; Socioenvironmental factors; African American; Prison-based

INTRODUCTION

The United States Department of Justice estimates that 80% of federal prisoners have histories of problematic drug or alcohol use (1). For example, in 1997, 45% reportedly used drugs or alcohol in the month before their offense, 34% engaged in their crimes while affected by alcohol and drugs, and 17% reported that the purpose of their crime was to get drugs (1). These data indicate that the Federal Bureau of Prisons (BOP), like state criminal justice systems, can provide the opportunity for a significant number of problematic substance users to access substance abuse treatment, which has consistently been shown to reduce substance use and criminal behaviors among adjudicated offenders (2-6).

The demonstrated effectiveness of prison-based substance abuse treatment is especially relevant for the significant number of minority prisoners in need of treatment, as it represents increased access to what is typically a scarcely available commodity for them. A small number of community-based substance abuse treatment studies have found treatment to be equally effective at reducing substance abuse and related behaviors for both minority and white substance abusers (7, 8). However, there have been no such studies on prison populations, due partly to the lack of representation of the characteristics and treatment outcomes of minority subgroups in prison-based treatment studies (9-11). The purpose of this study is to address this gap in the literature by evaluating treatment outcomes and their correlates for African American and white male substance abusers who were treated in the BOP's residential drug abuse treatment programs (DAP) from 1991 to 1995.

Comparison of African American and White Substance Abusers

Much of what has been reported about adult minority substance abusers is limited to describing the characteristics and behaviors of participants in community-based treatment programs (12-14). For example, the literature characterizes African American substance abusers who seek treatment as primarily regular cocaine or heroin users, with serious employment problems, but few psychiatric problems (7, 13, 15). In contrast, white substance abusers are typically described as regular marijuana and alcohol users, with few employment problems, but substantial psychiatric problems (7, 12) .

With respect to comparing characteristics and behaviors of African American and white participants in prison-based substance abuse treatment programs, data from the BOP's Treating Inmates Addicted to Drugs (TRIAD) study indicated that African American males were significantly more likely than white males to report being unemployed in the month before incarceration (16). In addition, African American participants were less likely than white participants to report symptoms which met diagnostic criteria for antisocial personality disorder or depression (17), and were also less likely to report having friends who encouraged their drug use. However, African Americans were more likely than whites to come from single parent families and families who were welfare dependent (16). With respect to reported commonalities, both groups used cocaine and alcohol on a daily basis in the year before their arrest at similar rates (but white participants reported greater use of marijuana), half of each group spent significant social time with friends and family who used drugs in the year before incarceration, and the majority of both groups reported that their family members opposed their substance use (16).

Despite the diverse pre-treatment profiles among African American and white substance

abuse treatment participants, a few recent treatment outcome studies have found that both African American and white clients benefit similarly from community-based treatment. (7, 8, 18). For example, in their evaluation of two separate samples of Vietnam veterans, Leda and Rosenheck (18) and Rosenheck and Seibyl (7) found that both African American and white homeless Vietnam veterans in each sample improved similarly on most behavioral indices (e.g., decreased drug use, increased employment) following treatment (one year and three months, respectively), despite the myriad differences between them at treatment entry.

Unlike studies which found similar treatment outcomes between white and African American treatment participants, two have found significant differences between the groups (4, 19). For example, Howard, LaVeist, and McCaughrin's (19) evaluation of treatment outcomes (program completion rates) for white and African American substance abusers at 326 outpatient (drug-free) programs found that programs with more African American participants had poorer treatment outcomes than did those with more white participants. In an effort to explain their findings, the authors operationalized race using socioenvironmental variables related to the location of the treatment programs (urban vs. rural and poor vs. nonpoor geographic areas) and found that those treated at programs located in poor and nonpoor urban areas (populated mainly by African Americans) had poorer treatment outcomes than those treated at programs located in nonpoor rural areas (populated mainly by whites) (19, 20). Howard and colleagues (19) concluded that African Americans in urban communities may have a more difficult time with recovery from substance abuse compared to whites in nonpoor rural communities because of increased exposure in urban areas to conditions which undermine sobriety and support substance use (e.g., drugs, alcohol, crime, and racial discrimination) (19).

Socioenvironmental Correlates of Substance Abuse

Compared to nonurban residential areas, urban residential areas (where African Americans are more likely to live) are typically characterized by a persistent pattern of increased exposure to crime, drugs and alcohol, and poverty (19, 21). As a result, recent research has found that: 1) African American men in substance abuse treatment report the most exposure to drug use in their social environments compared with white men, white women, and African American women, and 2) African American men have more economic difficulties than white men in the program (22). Research also notes that African American clients are significantly less likely than white clients to be employed before treatment (16) and are even less likely to be employed following treatment (23). Finally, a study of the precipitants of relapse among African American males indicated that difficulties with housing, income, and employment precipitated both psychic distress and relapse to substance use among male working-class African American substance abuse treatment clients, such that increased psychic distress was related to increased social instability, which was in turn related to increased relapse (24).

Like structural socioenvironmental factors (e.g., residential settings and economic status), social relationships also have a documented role in the etiology and continuation of problematic drug use (21, 25-28). For example, Dembo and colleagues (27) documented the trajectory from family relationships marked by hostility, lack of parental involvement, and association with peers who engage in substance use and other negative behaviors to the initiation of such behaviors among adjudicated adolescents. Further, Dash (26) documented the intergenerational transmission of problematic substance use and criminal behavior in his ethnographic study of five generations of one family living in urban America. Finally, a number of sociologists documented the association

between an array of negative behaviors (to include problematic substance use) among youth with family backgrounds characterized by factors that tend to vary by race: fatherlessness, female-headed household, and poverty (29, 30).

Regardless of the pathway to drug abuse treatment, most of the available drug treatment literature on racial group comparisons of treatment outcomes indicates that African American and white treatment participants from diverse backgrounds derive similar benefit from substance abuse treatment (e.g., similar rates of reduced drug use and decreased criminal activity). Explanation for recent empirical results (4), which indicate that African American substance abusers had poorer postrelease drug use outcomes than did white substance abusers might be found by exploring the empirical relationship among problematic substance use, family background, and pre-incarceration social environment (21, 25-28).

Purpose of the Study

Given the higher rate of post-release drug use found among African American participants compared with white participants in the TRIAD sample (4), the purpose of this study was to assess the differential effects of family and socioenvironmental factors on three-year postrelease drug use outcomes among African American and white substance abusers in the TRIAD sample. This was accomplished by conducting separate analyses for each racial group, to allow for possible identification of factors that may help to explain the differences in postrelease drug use. There were two hypotheses: 1) for both groups, family background and preincarceration socioenvironmental variables would predict postrelease drug use more strongly than sociodemographic characteristics and pre-incarceration behaviors, and 2) the predictors would be different for each group.

METHOD

Sample

The sample for this study was derived from a sample of 791 male treatment participants who were released to supervision by a U.S. probation officer following incarceration (88% of the original pool of treated participants were released to supervision). The analyses were limited to only African American and white participants because the samples of 85 participants of Asian and Native American heritage and 72 participants of Hispanic ethnicity were too small to allow for multivariate analyses. The resulting sample consisted of 279 African American (35%) and the 512 white (65%) male participants. Participants volunteered for treatment at DAP programs located at 16 separate medium- and low-security BOP institutions between 1991 and 1995. The average time to release following treatment was 14 months (s.d.=11 months) and participants were followed for up to three years after release from BOP custody. The sample is described more fully in the Results section.

Program Description

The BOP's drug treatment program, which was implemented in 1990 with standardized program content, was delivered in a modified therapeutic community setting. Licensed clinical psychologists provided program leadership at each institution, while most of the day-to-day treatment was delivered by treatment specialists who varied in their level of experience with treating substance abuse or correctional populations, ranging from no experience with one or the other to 10 or more years of experience with both. The DAP program utilized various elements of cognitive-behavioral models of addiction treatment which were tailored to the correctional population and environment (31, 32). Treatment content included psychoeducational modules on

criminal thinking, rational-emotive therapy, relapse prevention, and therapy around family issues. Treatment was delivered primarily in a group format, which included psychoeducational modules and weekly process groups. Individual therapy was offered as needed, but typically not more than once per month. Treatment was delivered in three phases, and treatment progress was evaluated midway through each treatment phase.

Participants resided together in a unit which was physically separate from the general population and had an average capacity of 100 participants. Participants' week days were typically divided, with one-half of the day consisting of two 2-hour treatment sessions and the other half of the day spent participating in other institutional activities along with the general population (e.g., education and work).

Procedure

The data used for the present study were obtained from structured self-report questionnaires, face-to-face interviews, BOP automated databases, and structured telephone interviews with U.S. probation officers. In-treatment data were collected from 1991 to 1995, while post-release data were collected from 1994 to 2000. Individuals who volunteered for treatment between 1991 and 1995 at 16 DAP programs were recruited for the study by trained, professional researchers who were independent of the treatment programs. Of those recuirted, 90% agreed to participate in the study, and no demographic variables were associated with refusal to participate.

Professional researchers obtained informed consent from the participants and administered both a pretreatment and a posttreatment assessment battery. Each battery consisted of a face-to-face interview and a survey which required about 90 minutes to administer. The assessment batteries were modeled after those used in the Drug Abuse Treatment Outcome Study which was

being conducted in community-based drug treatment programs during the same time period (3). The assessment batteries included items that measured numerous variables, such as demographic characteristics, family and social background, drug use history, criminal history, and treatment-related behavior. The pretreatment assessment battery was administered between six weeks before and after admission to the DAP and the posttreatment assessment battery was administered between four weeks before and after program completion or termination. This range of time was required to allow for travel time between treatment programs as each program did not have dedicated research staff. Finally, participants received no incentives for completing the assessment batteries.

Information on participants' race, age at release from incarceration, and prior commitments was obtained from the BOP's automated database. Additionally, information about participants' behavior following release from incarceration (e.g., drug use and criminal behavior) was obtained from standardized telephone interviews with U.S. probation officers for up to three years of postrelease supervision. The follow-up completion rate was in excess of 99%.

Measures

The items from the pre- and posttreatment data collection instruments that were of note in this study were found to be related to treatment outcomes in previous multi-site drug treatment evaluations (3): (1) preincarceration measures of family background, employment and educational history, history of drug and alcohol use, treatment history, mental health history, illegal activities, incarceration and arrest histories, and (2) postincarceration measures of criminal activity, drug use, and employment.

Outcome Variable Definitions

The outcome measure for this study was drug use within three years after release from incarceration to supervision as reported by a U.S. probation officer. Drug use was defined as the first occurrence of one of four events: (1) a positive urinalysis test for any illegal drug (74% of drug use detected), (2) a refusal to submit to a urine test (18% of drug use detected), (3) a positive breathalyser test for alcohol (1% of drug use detected), or (4) an admission of drug use to the U.S. probation officer (9% of drug use detected).

Predictor Variable Definitions

The predictor variables included those that prior drug treatment research found to be predictive of posttreatment substance use, such as criminal history (this study used prior commitment as an indicator), age (this study used age at release), and history of drug use (studies use different measures – this study used weekly drug use in the year before incarceration) (3). Also included were family and social environment variables, which prior sociological research has shown to correlate with problematic drug use and to vary by race (e.g., residing in single-parent households and interaction with drug-using peers) (21, 26, 33). Although there were no available measures of postrelease family and social environments, measures of preincarceration social environment were thought to provide a proxy for the type of context to which many prison inmates ultimately return after they leave prison (21, 26, 33).

Sociodemographic characteristics included age at release from prison and grade level (continuous variables). Preincarceration behaviors included employment status during the month before incarceration (coded 1 for full- or part-time work) and a prior commitment to federal prison. The two variables for history of substance use included a dummy variable indicator of

whether the individual never used drugs on a daily basis and a series of dummy variables for daily drug use within the year before arrest: daily use of alcohol only and daily use of an illegal drug (no daily use in the year prior to arrest served as the reference category). A dummy variable also indicated a history of previous drug or alcohol treatment. Preincarceration living arrangements, which was coded using an effects vector, included the categories: (1) living with a spouse; and (2) living with a common-law partner, where living with neither was coded as the reference category.

Family background variables included: before age 18 participant had an immediate family member who was incarcerated, before age 17 participant had an immediate family member with an alcohol and/or drug problem, and the family with whom subject lived the longest prior to age 17 was ever on welfare. Predictors related to subjects' preincarceration social environment included: friends encouraged drug use, friends were main source of at least one drug, and significant time (at least one hour per day on five or more days in a typical week in the year prior to incarceration) spent with family and/or friends who used drugs.

Other predictor factors included in-prison rule infractions and treatment participation. The rule infraction predictor was defined as having at least one drug-related rule infraction (e.g., positive urinalysis, refused urinalysis, possession of drugs or alcohol) within the six months prior to release from prison (some participants were still in treatment during this time and some were not). The treatment participation variable included three categories: (1) treatment complete, (2) treatment incomplete (comprising those who did not complete treatment due to administrative reasons such as being released from prison before treatment ended), and (3) the reference category in the effects vector which was voluntary withdrawal or disciplinary discharge.

Predictor variables that were not continuous in nature were coded as dichotomous

variables, with 1 indicating the presence of the attribute and 0 indicating its absence, unless otherwise noted. Effects vector coding, which contrasts a specific category of a variable with all categories in the sample, was used for two predictor variables: preincarceration living arrangements, and treatment completion status upon discharge from treatment (34). This type of coding was undertaken to avoid the problem of choosing a referent group for these two variables. Thus, for example, effects vector coding provided the advantage of being able to identify which type of living arrangement was associated with higher *or* lower drug use rates when contrasted with *all* individuals in the sample.

The models also included control variables that could affect the likelihood of postrelease drug use being detected. For example, postrelease treatment, coded as an effects vector, had the following categories: (1) received treatment only during halfway house placement, (2) received treatment only while under supervision by a U.S. probation officer, (3) received treatment both in a halfway house and while under supervision, and (4) no treatment during either time which was coded as the reference category in the effects vector. Continuous control variables included: time between program discharge and release from prison, average number of personal contacts with U.S. probation officer per month during the first six months following release from incarceration, average number of urinalysis tests per month during the first six months following release from incarceration, and average number of collateral contacts (e.g., communication with family members about former inmates' behavior) made by U.S. probation officer per month during the first six months following release from incarceration.

Analytical Approach

Although it was expected that predictors of postrelease drug use would differ between

African American and white participants, the sample size precluded the testing of the numerous interactions between the two categories of race and the various predictor variables that would have been required to test the first hypothesis. Therefore, separate analyses were conducted for each racial group in order to allow the opportunity to identify which predictive variables, if any, differed between African American and white participants.

Discrete time proportional hazard regression was used where the time to first drug use during postrelease supervision was modeled. Event history analysis was the most suitable type of approach to the analysis because it models both occurrence and timing of an event (35, 36). This approach also controls for censored observations, in this case, for individuals who did not fail and those who were not observed during the entire postrelease period due to termination of supervision, incarceration for a detainer, or death before the end of the three-year period (35, 36). The 36 months of postrelease follow-up were reduced to 15 time periods in which at least one drug use event actually occurred. With respect to interpreting the coefficients, a positive coefficient indicated an *increased* likelihood of drug use, while a negative coefficient represented a *decreased* likelihood of drug use.

In conjunction with event history techniques, random effects models were used to correct for bias that arises from violation of the assumption of independent error terms, which occurs when there is a correlation between unmeasured covariates and measured covariates (37-39). This was relevant to this study because it is likely that some unmeasured factors (e.g., postrelease variables) were correlated with the socioenvironmental variables included in the models. Random effects models also corrected for the risk of underestimating the extent to which the rate of drug use increased over time and the risk of attenuating the estimate of the magnitude of the predictors

of drug use (40). Finally, tests of the differences between the coefficients of the predictor variables which were significant for one or both racial groups were conducted using the z statistic (41).

RESULTS

Sample Description

The sample for this study was described comprehensively in an earlier TRIAD study (16). As such, Table 1 is used to summarize the previously reported findings and provide a profile of the demographic characteristics of the sample.

Table 1 indicates that, on average, African American participants were 35.9 years old at the time of release from prison, with 11.9 years of education, and 46% worked part or full time in the month prior to incarceration. In significant contrast to African American participants, white participants were an average of 38 years old at the time of release from prison, had 12.4 years of education, and 62% of white participants worked part or full time in the month prior to incarceration. African American and white participants were similar in the proportion who had been previously incarcerated in federal prison (72% and 65%, respectively), who used drugs on a daily basis in the year prior to their most recent arrest (45% and 49%, respectively), and who reported spending significant time with a friend or family member who used drugs in the year prior to incarceration (50% and 53%, respectively) (see Table 1).

With regard to family background and socioenvironmental factors, Table 1 shows significant differences between African Americans and whites for several of these factors. For example, African American participants were more likely than white participants to come from families where an immediate family member had been incarcerated (27% and 14%, respectively) or where their family had been on welfare before they turned 17 years old (34% and 11%,

respectively). In contrast, African American participants were less likely than white participants to report that their friends encouraged their drug use (11% and 21%, respectively) or that a friend was the main source for at least one of the drugs they used (13% and 20%, respectively). It is noteworthy that both groups of participants had similar rates of postrelease drug treatment and postrelease supervision (see Table 1).

With respect to the outcome variable postrelease drug use, approximately 67% of African American participants used drugs in the three years following release from prison compared with 47% of white participants ($p<0.05$). Further, African Americans' average time to drug use was 5.7 months (s.d.=6.8 months), compared with 8 months (s.d.=8.4 months) for white participants ($p<0.001$).

Multivariate Models

Table 2 shows the results for the two models used to predict drug use separately for African American participants and white participants. The model for African American participants indicated that none of the family background and socioenvironmental variables were predictive of postrelease drug use. However, there were significant effects for other background characteristics. Notably, being employed part or full time in the 30 days prior to incarceration for the current offense decreased the likelihood of postrelease drug use, while having a drug-related rule infraction in the six months prior to release from prison increased the likelihood of drug use in the three years following release from prison.

Among white participants, there were also no significant effects for any of the family background or socioenvrionmental characteristics but there were effects for other background characteristics. Specifically, older age at release and living with a spouse prior to incarceration

decreased the likelihood of postrelease drug use. Further, a prior commitment in a federal prison, prior drug treatment, and a drug-related rule infraction in the six months prior to release from prison were all associated with an increased likelihood of drug use in the three years following release from prison for white participants (see Table 2).

Table 2 also shows the test of differences between the coefficients of the variables in the models which were found to be significant in predicting postrelease drug use for either African American or white participants. The tests indicated that there were no significant differences between the two groups for any of the coefficients of the variables of interest in the study.

DISCUSSION

Overall, the results did not support either of the study's two hypotheses: (1) for both groups, family background and preincarceration socioenvironmental variables would predict post-release drug use more strongly than sociodemographic characteristics and preincarceration behaviors; and (2) the predictors would be different for each group. Namely, none of the family background or socioenvironmental variables predicted three-year postrelease drug use for either group. Furthermore, although a few sociodemographic and background characteristics were predictive of postrelease drug use for both groups, there were no statistically significant group differences in the coefficients for these variables. These results occurred within the context of the significant differences in both family and socioenvironmental backgrounds between the two groups.

Although the results did not support the study's hypotheses, they are consistent with other research findings that indicate that demographic characteristics do not predict treatment outcomes (7, 8, 18). Furthermore, that the pre-incarceration socioenvironmental characteristics were not

predictive of postrelease drug use indirectly lends support to the research that highlights the importance of the current, rather than historical, social environment in efforts to maintain sobriety (19, 21-24).

Recent information on prison releasees shows that 66% of state prisoners were released to counties that contain the central city of a metropolitan area (33). However, communities characterized by high rates of incarceration tend to be socially chaotic and have fewer resources to address the needs of returning offenders . Furthermore, it is likely that communities with high percentages of African Americans are more likely to be profoundly negatively impacted (43) because of the higher incarceration rate among African American men compared with white men. The socioeconomic disintegration of urban communities as a result of such phenomena as disproportionate incarceration rates, and increased exposure to drugs, alcohol, crime, poverty, and unemployment creates an extremely challenging context for African American releasees to maintain abstinence from drugs and alcohol (33, 43, 44).

Previous research indicates that offenders released from prison typically return to social environments similar to the ones they were in prior to incarceration (21, 26,33). The lack of information available on participants' postrelease social environment is the most salient limitation of this study. Collection of data related to these variables were not included in the study's research design because the impact of postrelease social environment on postrelease drug use was not yet under consideration in the substance abuse treatment field at the onset of the study. With the current recent emphasis on reentry, the importance of the release environment is gaining importance.

Although it is an additional limitation to the study, the drug use outcome variable was

defined as the first positive urinalysis (or refused urinalysis, verbal admission, or positive Breathalyzer test) during postrelease supervision because the definition approximated the nexus of those definitions included in the multifaceted approach to describing drug use in the substance abuse treatment literature (2, 11, 23). Even so, the definition used in this study precluded the ability to make assertions about postrelease drug use frequency. Without being able to discuss drug use frequency, the issue of relapse could not be addressed.

Finally, using a sample of offenders who volunteered for treatment in a federal prison may limit the generalizability of the results beyond the sample. However, it should be noted that it was not the purpose of this study to highlight any comparisons between federal prisoners and prisoners in other criminal justice systems. Instead, this limitation is based upon the possibility that the sample evaluated in this study was so unique as to preclude generalization of the findings to any other sample of incarcerated substance abuse treatment participants.

Given the recent focus on offender community reentry, this study provides a foundation for further research on the impact of both preincarceration and postrelease socioenvionmental variables on substance use outcomes among those treated in prison-based programs. Thus, future studies in this area should include structural characteristics of participants' postrelease social environment. These characteristics include exposure to drugs and alcohol, employment rate, poverty rate, homelessness rate, and access to social service programs. In addition, detailed information about postrelease substance use such as frequency and duration of use during the observation period should be included to provide a more comprehensive description of the relationship between participants' postrelease drug use and socioenvironmental characteristics.

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Table 1. Descriptive statistics[1]

Predictor Variables	African American (n=279) N	%	White n=512) N	%
Employed mo. before incarceration	127	45.5*	317	61.9
Prior commitment (Y)	201	72.0	335	65.4
Never used drugs on daily basis	71	25.5	113	22.1
Daily alcohol use/year before arrest	53	19.0	87	17.0
Daily illegal drug use/year before arrest	125	44.8	253	49.4
Prior drug or alcohol treatment	112	40.1	225	44.0
Family member ever incarcerated	78	27.0*	71	13.9
Family drug or alcohol problem	120	43.0	241	47.1
Family on welfare	94	33.7*	55	10.7
Time w/ family/friends who use drugs	35	12.5	102	19.9
Friends encouraged drug use	31	11.1*	108	21.1
Main source of drugs-friends	138	49.5	272	53.1
Drug incident report	29	10.4	55	10.7
Treatment completion status				
Complete	216	77.4	427	83.4
Incomplete	28	10.0	40	7.8
Disciplinary discharge/withdrawal	35	12.5	45	8.8
Pre-incarceration living arrangements				
Live with spouse	114	40.9	220	43.0
Live with common law	50	17.9	77	15.0
Live w/ neither spouse or common law	115	41.2	215	42.0
Posttreatment services				
Posttreatment services only	49	17.6	57	11.3
Transitional services only	79	28.3	191	37.3
Post- and transitional services	102	36.6	197	38.5
Neither post- or transitional services	49	17.6	67	13.1
	N	Mean (sd)	N	Mean (sd)
Grade level	279	11.9 (2.0)*	512	12.4 (2.0)
Age at release from prison	279	35.9 (8.2)*	512	38.0 (8.7)
Months to release from prison after treatment	279	4.5 (12.0)	512	4.3 (10.4)
Postrelease supervision				
Postrelease urinalysis rate	279	3.0 (2.2)	512	2.7 (2.0)
Postrelease P.O. personal contact rate	279	0.5 (0.5)	512	0.5 (0.5)
Postrelease P.O. collateral contact rate	279	0.5 (1.0)	512	0.6 (1.0)

[1]Some of the data in this table was reported in Ref (16).
*Significantly different from white participants ($p<0.05$)

Table 2. Random effects discrete time models for drug detection outcome: Race differences

	African American		White		Test for Differences in Coefficients	
Predictor Variables	B	SE	B	SE		Z [a]
Age at release	-0.01	0.02	-0.04 **	0.01	0.03	1.65
Grade level	-0.03	0.06	-0.01	0.05	- -	- -
Employed mo. before incarceration	-0.47 *	0.24	-0.14	0.20	0.33	1.09
Prior commitment (Y)	0.37	0.28	0.60 **	0.21	0.23	0.64
Never used drugs on daily basis	-0.41	0.32	-0.09	0.29	- -	- -
Daily alcohol use	0.24	0.34	0.35	0.29	- -	- -
Daily illegal drug use	0.40	0.31	0.36	0.25	- -	- -
Prior drug or alcohol treatment	-0.17	0.25	0.40 *	0.19	0.57	1.83
Family member ever incarcerated	-0.26	0.27	-0.09	0.28	- -	- -
Family drug or alcohol problem	-0.47	0.26	0.04	0.20	- -	- -
Family on welfare	0.28	0.26	0.25	0.29	- -	- -
Time w/ family/friends who use drugs	0.33	0.35	0.29	0.23	- -	- -
Friends encouraged drug use	0.27	0.37	-0.36	0.24	- -	- -
Main source of drugs-friends	0.14	0.25	0.04	0.20	- -	- -
Drug incident report	0.99 **	0.37	1.59 **	0.30	0.60	1.28
Treatment complete	-0.56	0.38	-0.33	0.33	- -	- -
Treatment incomplete	0.25	0.51	-0.31	0.45	- -	- -
Live with spouse	-0.22	0.16	-0.32 *	0.14	0.10	0.48
Live with common law	0.20	0.20	0.17	0.17	- -	- -
Months to release from prison following treatment	-0.02	0.01	0.00	0.01	- -	- -
Postrelease urinalysis rate	0.15 **	0.06	0.18 **	0.05	0.03	0.35
Postrelease P.O. personal contact rate	-0.09	0.14	0.44 *	0.21	0.53	2.13 *
Postrelease P.O. collateral contact rate	0.13	0.12	-0.05	0.09	- -	- -
Posttreatment only	0.58 *	0.24	0.22	0.22	0.36	1.10
Transitional services only	-0.42 *	0.21	-0.35 *	0.17	0.07	0.24
Post- and transitional services	0.43 *	0.20	-0.10	0.16	0.53	2.11
Constant	-1.53	1.02	-2.69	0.84	- -	- -
/lnsig2u	0.01	0.40	0.07	0.42	- -	- -
sigma_u	1.00	0.20	1.04	0.22	- -	- -
rho	0.50	0.10	0.52	0.10	- -	- -
LR test of rho [b]	13.53 **		9.38 **		- -	- -
Sample size	279		512		- -	- -

Note: B = unstandardized regression coefficient, SE = standard error

* $p < 0.05$

** $p < 0.01$

[a] z-score (see Ref.(41) Clogg et al., 1995.

[b] Tests model fit with random effect term against model fit without random term