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Co-occurring Psychiatric and Substance Dependence Disorders as Predictors of Parolee Time to Rearrest

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Abstract

An estimated 500,000-plus people are on parole each year, many with serious co-occurring psychiatric and substance use disorders. Using cross sectional, self-report data this study examined the relationships between parolee time to rearrest, serious mental illnesses, and substance dependency (n = 1,121). Regression analyses indicated that after controlling for demographic and criminal justice variables, parolees with serious psychiatric and substance dependence disorders were rearrested faster than non-dually diagnosed parolees ($p < .05$). An explanation is that compared with parolees without dual diagnoses, parole violations by dually diagnosed parolees are detected and punished more quickly because of closer parole supervision.

Keywords

parolees; psychiatric disorders; substance dependence

Introduction

While the prevalence of major mental illnesses and substance abuse disorders have been estimated for institutional and community corrections populations, and the associations between these disorders and criminal activity have been rigorously examined, correctional scholars have commented on the scarcity of information about how dually diagnosed parolees fare in terms of successful versus unsuccessful parole termination (Baillargeon, Williams, Mellow, Harzke, Hoge, & Greifinger, in press; Lurigio, Rollins, & Fallon, 2004; Veysey & Bichler-Robertson, 2002). This study begins to fill the gap by testing two simple premises. First, due to their adverse effects on parolees' functioning in the community and compliance with the conditions of parole, psychiatric disorders and substance dependence disorders in and of themselves put parolees at increased risk of violating parole. The second premise was that psychiatric disorders and substance dependence disorders operate synergistically in adding to the odds that parolees will violate parole. Both premises were tested by looking at the relationships between co-occurring psychiatric and substance dependence disorders and time to parolee rearrest.

By the end of 2008, over 1.5 million people were in state, federal, and private prisons (Sabol, West, & Cooper, 2009, Table 8). That a significant percentage of inmates have a history of serious psychiatric and/or substance abuse problems is well established. For

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example, one estimate is that 56% of state prisoners and 45% of federal prisoners have a mental health history with 24% of state prisoners and 14% of federal prisoners having recent (i.e. within the past one year) symptoms of a major mood or psychotic disorder; 24% of state prisoners and 27% of federal prisoners meet DSM-IV criteria for substance abuse or dependence in the year before entering prison; and, 42% of state prisoners and 29% of federal prisoners have dual psychiatric and substance abuse issues (James & Glaze, 2006).

The Bureau of Justice Statistics estimates that from 2000 to 2008, the annual numbers of inmates discharged to parole supervision and on parole were over 450,000 and over 700,000, respectively (Glaze & Bonczar, 2009, pp. 6–7). Many parolees will have mental health and/or substance abuse problems: Veysey and Bichler-Robertson (2002, p. 65) estimate that the prevalence rates of major mental disorders such as schizophrenia and other psychotic disorders, major depression, and bipolar disorder in institutional and community corrections (probation, parole) populations are not very different; Gunter, Philibert, and Hollenbeck (2009) found that substance abuse problems in a community corrections sample were similar to (even higher than) institutional populations.

How co-occurring psychiatric and substance abuse disorders relate to parole supervision (especially successful completion of parole versus parole revocation) has mostly gone unnoticed by criminologists. The historical processes behind U.S. prisons and jails becoming the country's de facto mental hospitals have been duly analyzed (see e.g. Grob, 1995, 2008; Lurigio, 2001; Lurigio, Rollins, & Fallon, 2004; Torrey, 1995): they include the post-World War II policies and practices of moving mental health treatment from large state run hospitals to the community, the federal government shifting its focus from treating chronic mental illnesses to substance abuse treatment, and as part of the wars on drugs and crime, tough federal and state penal laws (e.g. mandatory minimums). More of the mentally ill, especially mentally ill drug users, have made their way into jails and prisons as a result of these shifts in law and policy.

Evidence indicates that the risk of criminal offending in general and violence in particular increases when there is substance abuse (e.g. Bergman & Andershed, 2009; Chermack et al., 2008, 2009; Elbogen & Johnson, 2009; Gendreau, Little, & Goggin, 1996). The links between offending and major mood and thought disorders are not clear cut, however: some studies show no relationship and others indicate that psychotic disorders are associated with lower risk of (re)offending in general (Bonta, Law, & Hanson, 1998). Some studies report nil or negative associations between violence and mood or thought disorders (Appelbaum, Robbins, & Monahan, 2000; Bonta, Law, & Hanson, 1998) whereas others report increased violence when there is a serious illness like schizophrenia or another psychotic disorder (Chermack et al., 2009; Douglas, Guy, & Hart, 2009; Elbogen & Johnson, 2009), a major mood disorder like depression (Chermack et al., 2008), or co-occurring psychiatric and substance abuse disorders (Douglas, Guy, & Hart, 2009; Elbogen & Johnson, 2009; Mulvey et al., 2006; Swanson et al., 1997; Swartz et al, 1998).

In custodial settings mentally ill prisoners with or without a co-occurring substance abuse problem present particular challenges for institutional and community corrections officials. In contrast with higher functioning inmates, mentally ill inmates spend more time in prison before release (Ditton, 1999; Feder, 1991), have more disciplinary problems that oftentimes lead to segregation/solitary confinement (Ditton, 1999; Feder, 1991; Human Rights Watch, 2003; James & Glaze, 2006; Olley, Nicholls, & Brink, 2009), and are at higher risk of being victimized by others (Blitz, Wolff, & Shi, 2008) which in itself may aggravate the inmate's mental health status and subsequent inability to conform to institutional expectations.

Difficulties experienced in prison by those with psychiatric disorders are likely to continue after discharge. Not only that, former inmates with serious mental disorders are less likely to receive help from family or friends (Feder, 1991), and those with dual diagnoses are at greater risk of becoming violent (see Lamb & Weinberger, 1998), of being homeless, and having further involvement with the criminal justice system (Hartwell, 2004). Experiences with being homeless, for example, have been linked with future offending in general and violence in particular (McNiel, Binder, & Robinson, 2005). Clearly, the large number of offenders with mental health and substance abuse histories going from prison to parole supervision will create greater burdens upon under-resourced law and order-oriented parole departments, police, courts, jails, social welfare services, and community-based treatment services.

Baillargeon and colleagues (in press) study of parolees in Texas is a recent effort to explicitly explore the links between parole revocation and co-occurring psychiatric and substance abuse disorders. Using a retrospective cohort study, they found that compared with non-mentally ill and non-substance abusing parolees, dually diagnosed parolees were almost two times more likely to have their parole revoked due to a parole violation in their first year on parole and over two and one-half times more likely to have their parole revoked because of a new crime. Parolees with a psychiatric disorder-only, a substance abuse-only disorder, or neither condition had the same risk of parole revocation in the first year.

The Baillargeon et al. study did not compare how soon after release dually and non-dually diagnosed parolees had parole revoked or were rearrested. The present study's aim was to formally test two hypotheses. First, parolees with co-occurring serious mental illnesses and substance dependence disorders would be rearrested sooner than parolees without co-occurring disorders. Assuming this hypothesis was supported by the data, the second hypothesis was that the relationship between parolees' time to rearrest and co-occurring disorders would remain when controlling for parolee demographics, criminal justice histories, and personality disorders.

Method

Sample

The study data came from the Bureau of Justice Statistics' *Survey of Inmates in State and Federal Correctional Facilities, 2004* (United States Department of Justice, 2007). The 2004 survey collected cross-sectional self report data from a nationally representative sample 3,686 federal inmates and 14,499 state prison inmates. A two-stage sampling procedure was used with stage one selecting individual prisons and stage two selecting the inmates. For this study, only state prison inmates on parole when last arrested (N = 2,500) were used. (As the data came from inmates any references to inmates are for those on parole at the last arrest.) The final analyses, however, used data from just 1,121 inmates as 1,379 had missing or invalid data (i.e. don't knows, refused to answer) on one or more variables of research interest. Federal prisoners were excluded because with the abolishment of federal parole decades ago most federal inmates are no longer discharged to parole but instead to "community supervision"; at the state and local level community supervision may mean probation or parole. To adjust for sampling error, the appropriate sampling weights provided in the dataset were used when formally testing the hypotheses.

Dependent Variable

The dependent variable was *parolee time to rearrest*. This was a continuous variable and operationalized as the number of months between the time someone was last discharged to parole supervision and then rearrested (i.e. date of arrest – date released to parole

supervision; range = 0 – 184 months). Inmates were asked about the most recent discharge to parole (month and year) but for multiple rearrests since then, the earliest rearrest date was recorded. Exploratory analyses indicated that the original variable was far from having a normal distribution so it was recoded with the new range of values 0–37+ months. This transformation led to an improved distribution.

Control Variables

There were a total of 12 control variables. Inmates' *age (estimated) when entering their last parole supervision* was centered around the mean (i.e., x − 31.34). The other variables were *gender* (0 = male, 1 = female); *white, non-Hispanic* (0 = no, 1 = yes); *Black, non-Hispanic* (0 = no, 1 = yes); *other race, non-Hispanic* (0 = no, 1 = yes); *Hispanic* (0 = no, 1 = yes); and *ever homeless or living in a shelter in the one year before the last arrest* (0 = no, 1 = yes).

Three criminal justice control variables were continuous: *number of prior parole supervisions*, *number of prior incarcerations*, and *number of years in prison before most recent parole supervision*. Number of years in prison was centered around the mean (i.e., x − 3.64). Exploratory analyses indicated distributional problems with the number of prior incarcerations, thus requiring recoding with the new range of values 1–4+ incarcerations (0 = one incarceration, 3 = four or more incarcerations). Whether the person was *incarcerated for a violent or non-violent offense before the last parole* was dummy coded (0 = no, 1 = yes). Violent offenses were any crimes with survey offense codes of 010 through 180 including murder, manslaughter, kidnapping, forcible and statutory rape, sexual assaults, robbery, simple and aggravated assaults, and intimidation.

Having *ever been diagnosed with a personality disorder* (0 = no, 1 = yes) was a psychiatric control variable. To be categorized as yes, inmates had to have reported having ever been told by a mental health professional that they had a personality disorder such as Borderline or Antisocial Personality Disorder (ASPD) (item # S9Q9a).

Main Predictor Variables

Four dummy variables represented inmates' psychiatric and substance dependence statuses before arrest (1 = present): *not severely mentally ill and not substance dependent; substance dependent only; severely mentally ill only* (SMI); and *severely mentally ill and substance dependent* (dually disordered; reference group). For each variable, the presence or absence of a mental illness and substance dependence had to be established. To be categorized as having a severe mental illness, two criteria had to be met. Criterion A required inmates to first indicate that they were ever "…told by a mental health professional, such as a psychiatrist or psychologist, that [they] had" a depressive disorder; manic-depression, bipolar disorder, mania; schizophrenia or another psychotic disorder; or Post-Traumatic Stress Disorder (PTSD) (item # S9Q9a). If Criterion A was met, it had to be established with some certainty that the disorders were not in full remission in the year before rearrest. Criterion B required that inmates report having ever received one or more of these mental health services in the year before the arrest leading to the present incarceration: psychotropic medication (item # S9Q10b), counseling/therapy (item # S9Q12b), psychiatric hospitalization (item # S9Q11b), or "…any other mental health treatment or services" (item # S9Q13b).

So as to improve inmates' classification as having or not having a psychiatric disorder around the time of their last arrest, inmates who said they had ever been diagnosed with one or more of the disorders in Criterion A but never received psychiatric treatment during the year before arrest were excluded from the analyses. (Of the sample's 489 inmates reporting a SMI diagnosis, 215 reported treatment services in the year before rearrest. Due to

limitations of the survey, it cannot be determined if the remaining 274 inmates not receiving treatment during this period received their diagnoses after the most recent prison admission and/or were mentally ill before admission but went without treatment.) For a psychiatric disorder to be categorized as absent, inmates had to actively indicate that they were never diagnosed with any of the aforementioned disorders. Inmates were also categorized as not having a major mental disorder if they only indicated that they had been diagnosed with a personality disorder, an anxiety disorder other than PTSD, or "[a]ny other mental or emotional condition".

Next was determining if inmates had a dependence on alcohol and/or drugs in the year before admission to prison. Inmates were asked 22 yes/no questions about their alcohol and drug dependence in the survey (items # S8Q6f1@1–S8Q6f2@11, S8Q12a1@1–S8Q12a2@11). Items were compared with the Diagnostic and Statistical Manual of Mental Disorders (4th Edition; DSM-IV) (American Psychiatric Association, 1994, p. 181) criteria for alcohol and drug dependence. Four of the seven DSM-IV criteria for substance dependence (compulsive use, persistent desire to stop, lots of time involved with the substance, and tolerance) were each assessed using single survey items. For example, the questions "did you often drink more or for longer periods of time than you meant to?" and "did you often use a drug in larger amounts or for longer periods of time than you meant to?" assessed the respective compulsive use criterion for alcohol and drug dependence. Likewise, the questions "did you spend a lot of time drinking or getting over the bad aftereffects of drinking?" and "did you spend a lot of time getting drugs, using them, or getting over their bad aftereffects?" assessed the lots of time involved with the substance criterion for alcohol and drug dependence, respectively.

Each of the remaining DSM criteria (important activities affected by substance, use despite problems, and withdrawal) was assessed using two to three survey items. For example, three questions assessed the use despite problems criterion for drug dependence: "did you continue to use drugs even though it was causing emotional or psychological problems?", "did you continue to use drugs even though it was causing problems with family, friends, or work?", and "did you continue to use drugs even though it was causing physical health or medical problems?" Slightly reworded questions were used to assess the criterion for alcohol dependence. The seven criterion were dichotomized (0 = not met, 1 = met) and when a criterion used multiple items, endorsement of one or more items was treated as meeting the criterion. Endorsing at least three alcohol or drug dependence criteria led to being categorized as dependent on alcohol or drugs.

Inmates were coded as not having a substance dependence during this period if they met any of the following: did not meet the above cut off criteria for substance dependence; denied any lifetime drug and alcohol use; denied any lifetime drug use and use of alcohol in the year before committing the offense leading to their imprisonment; never consumed alcohol more than once a week for over one month; or, consumed alcohol less than once a week in the year before arrest and denied any lifetime drug use (items # S8Q1a, S8Q1c, S8Q2a, S8Q2a, S8Q7a1, S8Q7a2).

Data analyses

Since the sample did not contain any censored cases and the model did not contain time varying predictors, a three step hierarchical Ordinary Least Squares regression analysis (PASW 18.0) was used. Step one formally tested the first study hypothesis and steps two and three tested the second hypothesis. Therefore, the predictor variables were entered into the model in these pre-determined clusters: the psychiatric and substance dependence status variables (dually disordered being the reference group); the demographic variables (with

Whites the reference group for race) and personality disorder variable; and, the criminal justice history variables.

Results

Descriptives

Unweighted univariate sample descriptives are presented in Table 1. The sample was primarily white (30.1%) and black (46.1%), male (87.7%), and 31.34 years old when they began parole. Over one of every eight inmates was homeless or living in a shelter in the year before their last arrest (12.2%). Inmates averaged two and a half previous prison terms and for the last prison term, most were incarcerated for non-violent offenses (70.9%) and spent three to four years locked up (M = 3.64). The overall sample was arrest free for over one year (M = 14.18 months). Just 7.3% indicated having ever been diagnosed with a personality disorder and whereas 12.7% of inmates had a serious mental illness around the time of their last arrest, and 54.2% met criteria for alcohol and/or drug dependence in the year before their current prison admission.

Table 2 presents the (unweighted) bivariate relationships between time to rearrest and the predictor variables. Time to rearrest was statistically associated with age, gender, having ever been homeless/living in a shelter in the year before arrest, number of prior incarcerations, number of years incarcerated right before the latest parole supervision, whether the parole supervisions followed prison terms for violent offenses, the presence of a personality disorder, and whether co-occurring psychiatric and substance dependence disorders were present or not. Absent were statistically significant associations between time to rearrest and race/ethnicity, number of prior parole supervisions, and the three other psychiatric and substance dependence variables. Multivariate analyses (using sampling weights) proceeded since the respective models were established a priori.

The findings from the regression analysis are presented in Table 3. Multicollinearity among the predictor variables was not an issue (tolerance levels > .10). As step one indicates, there were mixed findings for the hypothesis that dually disordered parolees would be rearrested sooner than non-dually disordered parolees. On average dually disordered parolees were rearrested just over 11 months into their parole supervision (intercept = 11.223). This was five months sooner than parolees with a SMI only (b = 5.034), nearly three months sooner than parolees with a substance dependence disorder only (b = 2.937), and over three months sooner than parolees without a SMI or substance dependence disorder (b = 3.318) (p's < .05). The overall model did not perform very well in accounting for parolee time to rearrest, however (adjusted R^2 = .003; F Change = 2.183, p < .10).

With mixed support for the first hypothesis, we proceeded to test the next hypothesis (i.e., that the time to rearrest and co-occurring disorders relationship would remain after controlling for parolee demographics, criminal justice histories, and personality disorders). The second step accounted for one percent of the variance (adjusted R^2; F Change = 2.177, p < .05). White male dually disordered parolees of average age when last entering parole, who were not homeless in the year before arrest, and never diagnosed with a personality disorder were rearrested on average just over a year into their parole supervision (intercept = 12.287). All else being equal, this was nearly four and a half months sooner than parolees with SMI's only (b = 4.455, p < .05); dually disordered parolees rearrest times, however, were not much different than parolees with substance dependence only (b = 2.387, p > .10) or parolees without a SMI or substance dependence (b = 2.487, p > .10). Finally, parolees who had been homeless or living in a shelter in the year before arrest were, all else being equal, rearrested three and a half months sooner than parolees that were not homeless (b = −3.590, p = .001).

The third step added the four criminal justice history control variables. The model now accounted for five percent of the variance (adjusted R^2; F Change = 12.589, p < .001). Dually disordered parolees were rearrested on average twelve and a half months into their parole supervision (intercept = 12.487) if they were white males of average age when last entering parole; had never been homeless or living in a shelter in the year before arrest; never diagnosed with a personality disorder; incarcerated 3.64 years and for a non-violent offense for the incarceration preceding the most recent parole supervision; and, they had been incarcerated just once before and their most recent parole was their first. All else being equal, this was over four and a half months earlier than parolees with a SMI (b = 4.637, p < .05), nearly three months earlier than parolees with substance dependence-only (b = 2.948, p < .06), and over two and a half months earlier than parolees without SMI or substance dependence (b = 2.661, p < .09). Finally, holding everything else constant, females tended to take longer to be rearrested (b = 3.371, p < .09) whereas having been homeless/living in a shelter accelerated time to rearrest (b = −2.732, p < .02); time to rearrest was positively associated with the number of prior parole supervisions (b = .684, p < .05) and years spent in prison before the most recent parole supervision (b = .489, p < .001) but negatively associated with the number of prior incarcerations (b = −1.545, p < .001).

In steps two and three, parolees' time to rearrest was not associated with their race, ethnicity, age when they entered their last parole supervision, whether they were ever diagnosed with a personality disorder, and whether they were incarcerated for a violent or non-violent offense before the last parole.

Discussion

The predictions that parolees with dual SMIs and substance dependence disorders would be rearrested sooner than parolees without dual disorders had support. Not taking into account parolee demographics, personality disorder statuses, and criminal justice histories, the data indicated that dually disordered parolees were rearrested about three to five months sooner than non-dually disordered parolees; parolees without a SMI or substance dependence lasted the longest. When parolee demographics, personality disorder statuses, and criminal justice histories were controlled for, it was the severely mentally ill-only parolees who remained on parole the longest. In fact, the only consistently significant differences in rearrest times were between parolees with dual disorders and parolees with SMIs only. Differences in rearrest times for dually disordered parolees versus parolees with substance dependence-only or parolees without SMI or substance dependence had inconsistent levels of statistical significance. Though not truly comparable, these findings are similar to those of Baillargeon et al. (in press) who found that dually diagnosed parolees in Texas were at greater risk than their non-dually diagnosed peers of parole revocation within one year after leaving prison.

That the number of past incarcerations and years incarcerated were better predictors of time to arrest than the dual disorders status variables (as indicated by the respective β's; see Table 3) is consistent with what Bonta, Law, and Hanson (1998) concluded in their meta-analysis of the literature on the propensity of forensic populations to recidivate. They found that while clinical factors (e.g., severe psychiatric disorders) were sometimes associated with future offending, the best predictors of reoffending were demographic and criminal justice history factors. However, due to our conservative definition of substance user (i.e., met DSM-IV criteria for substance dependence) parolees that did not meet substance dependence criteria could have very well occasionally used or abused alcohol/drugs and rearrested quicker than non-users as a result. The possibility remains, then, that the relationship between substance use/abuse and time to rearrest is stronger than indicated here.

Due to the study design used here, explanations for these findings are speculative. That it took the mentally ill only parolees the longest to be rearrested may be the result of the group's relative psychological stability since they had received community-based mental health treatment and were, more importantly, not dependent on drugs or alcohol. One possibility for why dually disordered parolees had the quickest rearrest times is that their use of drugs or alcohol quickly resulted in repeatedly positive drug tests. Another possibility is that their substance use contributed to a relatively rapid psychological decompensation and behaviors requiring intervention by police or parole (e.g., non-compliance with psychiatric or substance abuse treatment regimens; absconding; aggression towards others; theft). Finally, parole officers may be quicker to make arrests for relatively trivial violations because they see dually diagnosed parolees as presenting a greater public safety threat. These possibilities are consistent with bipolar disorder, schizophrenia, and other psychotic disorders being linked with assaulting others (Baillargeon, Binswanger, Penn, Williams, & Murray, 2009) especially when these serious disorders go untreated (Swanson et al., 1997) and drugs or alcohol are being abused (Swartz et al., 1998).

Just as plausible is that dually diagnosed and non-dually diagnosed parolees commit technical violations/new crimes within the same timeframe but parole officers are maintaining tighter surveillance of and control over these caseloads. For instance, to be categorized as severely mentally ill, the study required parolees to have received some type of community-based mental health treatment; with a co-occurring substance dependency, they are likely to have also received community-based substance abuse treatment services. Irrespective of substance abuse and/or psychiatric treatment being a requirement of parole or not, dually afflicted parolees would have been under tighter surveillance and control because parole officers are likely to be communicating with treatment providers. Dually diagnosed parolees would not only have more opportunities to violate parole (e.g. non-compliance with treatment), but parole officers and treatment providers would be more likely to detect and react to parole violations.

This study had certain limitations, one being the small effect sizes. At best the model accounted for only 5% of the variance in times to rearrest with dually disordered parolees rearrested a handful of months before non-dually disordered parolees. Without additional information, it cannot be determined whether the effect sizes were a study design artifact or accurately reflect the larger populations of dually and non-dually disordered parolees. The study, for instance, was restricted to known parole violators in state prisons. That is, it did not include parolees still on parole or absconders, successful parole completers, parole violators in local jails or federal or private prisons, or deceased parolees. The study also excluded inmates that had a SMI but went without treatment in the year before arrest, and did not examine whether time to rearrest was related to clinical criteria for substance abuse.

Another problem was that the survey data were collected at one point in time with inmates asked about events occurring months, years, even decades before. This raises concerns about recall accuracy. For example, based upon the sample, about seven percent of rearrested parolees in state prisons (6.8% when sample weights used) would have ever been diagnosed with a personality disorder (including ASPD). (Besides faulty recall, another possibility is that substantial proportions of personality disordered inmates were never told they have a personality disorder.) This is far lower than prevalence estimates for ASPD alone reported elsewhere (see Veysey & Bichler-Robertson, 2002, tables 9, 11). Last, the survey used different timeframes for inmates' psychiatric and substance abuse histories. Inmates were asked about their use of community-based psychiatric treatment services in the year before the arrest leading to the present incarceration, but asked about their substance use in the year before the current imprisonment.

Nevertheless, with so little research on how parolees with dual psychiatric and substance dependence problems fare in terms of their return to custody this study begins to fill the gap in the literature. This study was not restricted to looking at the correlates of parole failure during a set timeframe (e.g., one, two, or three years after entry onto parole). The time to failure was instead sample driven with parolees arrest free anywhere from zero to 184 months. Similarly, instead of only using parolees entering parole supervision at a particular point in time (e.g., during the year 2005), the time that parole entry occurred was sample drive (from 1961 to 2003). The study also used a nationally representative sample of state prisoners on parole when last arrested. Thus, an important study conclusion is that irrespective of parole jurisdiction and historical period, dually and non-dually disordered parolees differed in how long it took for them to be rearrested.

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Table 1

Univariate Descriptives (unweighted)

Variable	N	Mean	SD	Range	Description
Dependent Variable					
Parolee time to rearrest	1473	14.180	11.872	0 – 37+	In months
Demographic Variables					
Age (est.) entered parole	1728	31.337	8.450	14 – 65	Uncentered
Gender	1989	.123	.328	0 – 1	Female = 1
White	1985	.301	.459	0 – 1	Yes = 1
Black/African American	1985	.461	.499	0 – 1	Yes = 1
Other race	1985	.046	.209	0 – 1	Yes = 1
Latino/Hispanic	1985	.192	.394	0 – 1	Yes = 1
Ever homeless/Shelter	1911	.122	.327	0 – 1	Yes = 1
Criminal Justice Variables					
No. prior parole supervisions	1893	1.782	1.177	0 – 6	
No. prior incarcerations	1989	1.462	1.185	0 – 3	0 = 1 prior incarceration, 3 = ≥4 prior incarcerations
Years incarcerated	1926	3.638	3.213	0 – 30	For imprisonment just before latest parole supervision; uncentered
Sentenced for violent offense	1658	.291	.455	0 – 1	Yes = 1; for imprisonment just before latest parole supervision
Psychiatric Control Variable					
Ever diagnosed with personality disorder	1962	.073	.261	0 – 1	Yes = 1
Mental Illness and Substance Dependence Variables					
Not severely mentally ill & not substance dependent	1685	.415	.493	0 – 1	Yes = 1
Substance dependent only	1685	.458	.498	0 – 1	Yes = 1
Severe mental illness only	1685	.043	.202	0 – 1	Yes = 1
Severely mentally ill & substance dependent	1685	.084	.277	0 – 1	Yes = 1

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Table 2

Predictor Variables and Time to Rearrest Bivariate Associations (unweighted)

Independent Variables	Time to Rearrest
Gender[a**]	
Male (n = 1295)	M = 13.86 (SD = 11.82)
Female (n = 178)	M = 16.52 (SD = 12.00)
White[a]	
Yes (n = 449)	M = 13.72 (SD = 11.85)
No (n = 1021)	M = 14.40 (SD = 11.89)
Black/African American[a]	
Yes (n = 687)	M = 14.33 (SD = 11.78)
No (n = 783)	M = 14.07 (SD = 11.97)
Other Race[a]	
Yes (n = 68)	M = 12.22 (SD = 10.26)
No (n = 1402)	M = 14.29 (SD = 11.95)
Latino/Hispanic[a]	
Yes (n = 266)	M = 15.15 (SD = 12.50)
No (n = 1204)	M = 13.99 (SD = 11.73)
Ever homeless/live in a shelter one year before arrest[a***]	
Yes (n = 155)	M = 11.37 (SD = 11.13)
No (n = 1257)	M = 14.76 (SD = 11.81)
Sentenced for violent offense, prior imprisonment[a*]	
Yes (n = 400)	M = 15.09 (SD = 12.22)
No (n = 987)	M = 13.51 (SD = 11.56)
Ever diagnosed with personality disorder[a**]	
Yes (n = 106)	M = 11.21 (SD = 10.96)
No (n = 1353)	M = 14.40 (SD = 11.92)
Not severely mentally ill/not substance dependent[a]	
Yes (n = 534)	M = 14.60 (SD = 12.17)
No (n = 725)	M = 14.01 (SD = 11.64)
Substance dependent only[a]	
Yes (n = 573)	M = 14.22 (SD = 11.70)
No (n = 686)	M = 14.29 (SD = 12.01)
Severe mental illness only[a]	
Yes (n = 55)	M = 16.07 (SD = 12.02)
No (n = 1204)	M = 14.18 (SD = 11.86)
Severely Mentally ill/substance dependent[a*]	
Yes (n = 97)	M = 11.59 (SD = 10.79)
No (n = 1162)	M = 14.48 (SD = 11.93)
Age (est.; uncentered) when entered parole (n = 1442)[b*]	r = .053

Independent Variables	**Time to Rearrest**
Number of prior parole supervisions (n = 1408)[b]	r = −.018
Number of prior incarcerations (n = 1473)[b***]	r = −.154
Years incarcerated (last imprisonment; uncentered) (n = 1438)[b***]	r = .174

Note. M = Mean, r = Pearson correlation.

[a]Two-tailed t-tests.

[b]Two-tailed significance tests.

[†] p ≤ .10,

[*] p ≤ .05,

[**] p ≤ .01,

[***] p ≤ .001.

Table 3

Hierarchical (OLS) Regression Model (Betas in parentheses; n = 1,121)

	Model I	Model II	Model III
Constant	11.223***	12.287***	12.487***
Not severely mentally ill/not substance dependent	5.034* (.083)	2.487 (.107)	2.661† (.115)
Substance dependent only	2.937* (.126)	2.387 (.103)	2.948† (.127)
Severe mental illness only	3.318* (.143)	4.455* (.073)	4.637* (.076)
Age (est.) entered parole[a]	---	.060 (.043)	.038 (.027)
Gender	---	2.323 (.035)	3.371† (.051)
Black, non-Hispanic	---	.187 (.008)	−.223 (−.010)
Other race, non-Hispanic	---	−.646 (−.012)	−.758 (−.014)
Hispanic	---	−.243 (−.008)	.131 (.004)
Ever homeless/Shelter	---	−3.590*** (−.098)	−2.732* (−.074)
Ever diagnosed with personality disorder	---	−1.274 (−.022)	−.320 (−.006)
No. prior parole supervisions	---	---	.684* (.065)
No. prior incarcerations	---	---	−1.545*** (−.156)
Years incarcerated	---	---	.489*** (.132)
Sentenced for violent offense	---	---	1.019 (.041)
R^2 (Adjusted R^2)	.006 (.003)	.019 (.010)	.062 (.050)
F Change	$F_{3,1117} = 2.183$†	$F_{7,1110} = 2.177$*	$F_{4,1106} = 12.589$***

Note. Years incarcerated and estimated age at entry to parole centered.

† p ≤ .10,

* p ≤ .05,

** p ≤ .01,

*** p ≤ .001.