



# Short-term trajectories of substance use in a sample of drug-involved probationers<sup>☆</sup>

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## ABSTRACT

The current study estimates trajectories of illegal substance use in a sample of 251 drug-involved probationers to identify risk profiles that predict group membership and explores the impact of treatment participation across these trajectories. Trajectory analyses reveal five patterns of drug use during probation supervision. Age and the use of hard drugs are identified as the strongest predictors of involvement in illicit drug use while on probation. The effect of participation in substance use treatment varies across treatment settings and trajectory groups. Prior research has tended to treat drug abusers as a homogeneous population, but the current study findings suggest considerable heterogeneity amongst drug users involved in the criminal justice system. Identifying trajectories of drug use during supervision can help identify individuals who may be more likely to persist in drug use, can inform practice by identifying individuals in need of more intensive treatment services, and can assist in developing new drug treatment strategies.

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## 1. Introduction

A substantial proportion of justice-involved individuals in the United States are currently under some form of community supervision, such as probation (Carey, 2011; Taxman, Perdoni, & Harrison, 2007). National data compiled by the Bureau of Justice Statistics (BJS) indicate that over 4.2 million individuals were on probation during 2009 (Glaze, Bonczar, & Zhang, 2010), and approximately 60 to 70 percent of all justice-involved individuals suffer from substance use disorders (SUDs) (Lurigio, Cho, Swartz, Graf, & Pickup, 2003; Mumola & Bonczar, 1998; Staton-Tindall, Havens, Oser, & Burnett, 2011; Taxman et al., 2007). Yet, few studies have examined different profiles of offenders on probation or explored whether illicit drug use patterns and criminal justice risk factors vary for different types of probationers. The degree to which offenders change their behavior while under supervision and the mechanisms through which supervision impacts substance use behaviors is largely unknown (MacKenzie, Browning, Skroban, & Smith, 1999).

Few criminological studies have examined the impact of probation on the illegal substance use among offenders (De Li, Priu, & MacKenzie, 2000; MacKenzie & De Li, 2002; MacKenzie et al., 1999). The current study augments this limited body of literature by exploring heterogeneity in patterns of self-reported substance use

in a sample of drug-involved probationers over a 12 month period using a group-based trajectory (GBT) modeling approach. The study identifies offender characteristics that predict continued involvement in illegal substance use and explores the relationship between treatment participation and drug use patterns among probationers with a focus on the impact of different treatment modalities. GBT modeling allows for the identification of probationers who continue to use illegal substances while under supervision. Identifying risk factors for continued involvement in illicit substance use during probation has direct policy and treatment implications.

## 2. Review of relevant literature

### 2.1. Substance use treatment need among probationers

While research has indicated that substance abuse treatment is related to improved outcomes among probationers (Huebner & Cobbina, 2007; Krebs, Strom, Koetse, & Lattimore, 2009; Lattimore, Krebs, Koetse, Lindquist, & Cowell, 2005), estimates of the extent to which drug-involved probationers receive treatment services suggest that a majority of community-supervised offenders who are in need of treatment do not receive it. Only 17% of surveyed adult probationers reported receiving any drug treatment while on probation, according to a national survey conducted by the Bureau of Justice Statistics in 1995; this number increased to 40% when alcohol treatment was included (Mumola & Bonczar, 1998). Nearly a decade later, Taxman and colleagues (2007) found that less than 10% of substance-involved individuals on community supervision could receive treatment on any given day with the allocated treatment slots. Most probationers who are in need of substance abuse treatment are not linked to the proper

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type and intensity of services needed to improve their likelihood of successful completion of probation.

Over the past two decades, special conditions, such as mandatory drug testing, mandated drug or mental health treatment, community service, and payment of restitution have become a central component of community supervision. Due to these stipulations, drug-involved probationers face unique challenges and barriers to successful navigation through the probation process. Abstinence from drug use and participation in treatment are required for many probationers, yet these requirements are difficult to comply with given the availability of treatment services. Empirical studies suggest that special conditions or programs that increase the level of control and monitoring over community-supervised offenders often increase the likelihood of failure (Chanhatisilpa, MacKenzie, & Hickman, 2000; Petersilia & Turner, 1990, 1993). Treating probationers with SUDs is essential if these individuals are expected to conform to the special conditions stipulated as part of their probation sentence.

Understanding short-term trajectories of substance use is important, especially for justice-involved individuals. The criminal justice system expects drug-involved offenders to attend treatment and stop using illegal substances when they are placed on supervision, but this is often an unrealistic goal. Before reaching a period of sustained recovery, most individuals with SUDs cycle through several periods of treatment, recovery, and relapse (Anglin, Hser, & Grella, 1997; Scott, Dennis, & Foss, 2005; Scott, Foss, & Dennis, 2005). Individuals who continue to use illegal substances while on supervision are at an increased risk for technical violations, rearrests, revocations, and incarceration (Krebs et al., 2009; Lattimore et al., 2005; MacKenzie et al., 1999).

## 2.2. The effectiveness of drug treatment on probationer outcomes

An existing body of empirical research is devoted to examining the effectiveness of drug treatment within different justice-involved populations. While there is variability in the results regarding which types or modalities of treatment are most effective, there appears to be a consensus that well-designed, properly-implemented, and sustained drug treatment has a positive effect on both drug use and recidivism outcomes (Anglin & Hser, 1990; MacKenzie, 2000, 2006; MacKenzie, Mitchell, & Wilson, 2011; Prendergast, Anglin, & Wellish, 1995). The findings from studies examining the relationship between drug treatment and recidivism among probationers are mixed (Chanhatisilpa et al., 2000; Huebner & Cobbina, 2007; Krebs et al., 2009; Lattimore et al., 2005; Taxman & Thanner, 2006; Thanner & Taxman, 2003), owing to the variability in treatment components and differing levels of substance use disorders.

Treatment effectiveness among probationers has been found to vary across treatment modalities and populations. Studies by Lattimore et al. (2005) and Krebs et al. (2009) examined the impact of nonresidential and residential drug treatment on recidivism among a sample of nearly 134,000 drug-involved<sup>1</sup> probationers from the state of Florida who began community supervision between 1995 and 2000. Their studies included a comparison between 51,979 individuals who participated in some form of substance abuse treatment and 81,797 drug-involved offenders who were not treated. Lattimore and colleagues (2005) found that nonresidential treatment was related to a reduction in recidivism (rearrests), with an 18.7% reduction in the number of probationers arrested within a 12-month period and a 21.4% reduction in total number of arrests relative to what was expected if these individuals received no treatment. In a

further analysis of the Florida data, Krebs and colleagues (2009) compared the effectiveness of residential, nonresidential, and no treatment on time to failure on probation. Using propensity score matching to establish equivalent comparison groups, their analyses revealed that nonresidential treatment was related to an increased time to failure on probation for drug-involved probationers, but time to failure did not differ significantly between probationers receiving residential treatment and those receiving no treatment. The combined findings of these studies support the effectiveness of nonresidential substance abuse treatment for reducing negative outcomes among probationers, but raise questions about the effectiveness of residential treatment for this population.

Empirical support for the effectiveness of community-based drug treatment for offenders is not universal. Based on a review of 15 studies examining the effectiveness of community-based treatment for chemically dependent offenders conducted during the 1990s, Chanhatisilpa and colleagues (2000) concluded that outpatient treatment was not effective at reducing recidivism; they attributed much of the lack of effectiveness of outpatient programs to the increased supervision, monitoring and control associated with community-based treatment programs, and community supervision sentences. Taken with the research reviewed above, these findings suggest that while community-based treatments can reduce recidivism and improve drug use outcomes, the increased surveillance associated with community supervision may have unintended consequences that contribute to increased likelihood of failure.

## 2.3. The effects of probation on substance using behaviors

A study by MacKenzie and colleagues (1999) provides perhaps the most rigorous test of the effect of probation on substance use behaviors to date. Early evaluations of intensive probation programs generally found that probation had little effect on recidivism or drug use (Langan & Cuniff, 1992; Petersilia & Turner, 1990, 1993). These studies found that as many as two-thirds of all probationers were rearrested within three years (Minor, Wells, & Sims, 2003). These studies relied heavily on official measures of recidivism which are influenced considerably by the degree of surveillance associated with intensive probation (MacKenzie & De Li, 2002). MacKenzie and colleagues (1999) overcame this limitation by examining both self-report and official measures of offending and substance use in the year prior to arrest and during the first year of probation. They found that probation was related to a decline in illegal drug use; the percentage of probationers who self-reported drug use decreased from 69% to 27% during the first year of probation. They also observed that illegal drug use was related to continued involvement in offending. This work was pioneering in that it found that probation had a suppression effect by reducing both recidivism and substance use behaviors for many, but not all, offenders.

## 2.4. Predicting probation failure

Factors related to probation failure that have received empirical support include age, gender, race, criminal history/risk, substance use/abuse, offense type, and social bonds. While the relative importance of these factors for predicting probation outcomes varies across studies, there is considerable empirical support for these as some of the strongest predictors of probation outcomes available (Albonetti & Hepburn, 1997; Gray, Fields, & Maxwell, 2001; Hepburn & Griffin, 2004; Huebner & Cobbina, 2007; Jones, 1995; MacKenzie & Brame, 2001; MacKenzie & De Li, 2002; MacKenzie et al., 1999; Minor et al., 2003; Morgan, 1994; Olson & Lurigio, 2000; Sims & Jones, 1997). Rates of probation failure vary across jurisdiction, sample composition, length of follow-up, and definitions of failure. Probationers are more likely to be revoked for technical violations (e.g., for failed drug tests or failure to attend mandated drug treatment) than for the

<sup>1</sup> Drug involvement was defined as anyone who was ever arrested for a drug-related offense, ever participated in a drug court program, ever enrolled in drug offender probation, ever tested positive on a CJ-administered drug test, or was ever referred to substance abuse treatment by the criminal justice system (Lattimore et al., 2005).

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