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Outcome Assessment of Correctional Treatment (OACT)

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Abstract

Correctional populations reached unprecedented levels during the past decade, with approximately 2 million adults currently in prison or jail, and over 4.6 million on probation or parole (Bureau of Justice Statistics, 2002). Given that most of these individuals have a history of serious drug and alcohol problems, many therapeutic communities (TCs) have been developed in state prisons to address these problems. Similarly, intensive community-based treatment programs have been developed and implemented to treat probationers and parolees.

This summary report presents an examination of recidivism following treatment in a 6-month modified TC serving probationers in a large metropolitan area in Texas. Official records of arrest that led to incarceration were collected from the Texas Department of Criminal Justice for 406 probationers (290 graduates, 116 dropouts) who were admitted to a community-based residential modified TC in 1998 and for a comparison group of 100 felony probationers who, although eligible, were not admitted to this program. Examination of 1- and 2-year recidivism rates for the comparison, graduate, and dropout groups showed that the treatment dropouts were more likely to have been arrested for a serious felony offense within 2 years of leaving the treatment program. The impact of treatment emerged during the second year after release, as evidenced by the graduates of the treatment group having a significantly smaller proportion arrested during this time span than the dropout and comparison groups. Logistic regression analysis that adjusted for pre-existing group differences suggested that the program had a limited impact on recidivism, with the treatment graduates only slightly less likely to be arrested within 2 years of leaving the program.

Findings from this project also showed that social functioning scores did not improve during the initial 30-day orientation phase of treatment, but they were associated with a higher probability of dropping out of treatment early. Specifically, treatment dropouts had higher initial hostility scores and showed a larger increase in hostility between intake and the end of the orientation phase of treatment. In addition, being arrested within two years of treatment was

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associated with being unemployed in the 30 days before treatment, indicators of criminal history and with hostility ratings taken at the end of the 30-day orientation phase.

Implications of these findings are discussed.

Publications

Hiller, M. L., Knight, K., Leukefeld, C., & Simpson, D. D. (2002). Motivation as a predictor of therapeutic engagement in mandated residential substance abuse treatment. *Criminal Justice and Behavior*, 29(1), 56-75.

Hiller, M. L., Knight, K., Rao, S. R., & Simpson, D. D. (2002). Assessing and evaluating mandated correctional substance-abuse treatment. In C. G. Leukefeld, F. M. Tims, & D. Farabee (Eds.), *Treatment of drug offenders: Policies and issues* (pp. 41-56). New York: Springer.

Simpson, D. D., & Knight, K. (in press). TCU model of treatment process and outcomes in correctional settings. In A. Fins (Ed.), *State of corrections*. American Correctional Association.

Presentations

Broome, K. M., Hiller, M. L., & Simpson, D. D. (2000, March). *During-treatment changes in psychosocial functioning for probationers*. Paper presented at the annual meeting of the Academy of Criminal Justice Sciences (ACJS), New Orleans, LA.

Hiller, M. L., Knight, K., & Simpson, D. D. (2000, February). *Measurement and applications of the TCU process model in correctional substance abuse treatment*. Paper presented at the Best Practices IV meeting of the Texas Commission on Alcohol and Drug Abuse (TCADA), Austin, TX.

Hiller, M. L., Knight, K., & Simpson, D. D. (2000, March). *Psychosocial and motivational influences on early engagement and the treatment process*. Paper presented at the annual meeting of the Academy of Criminal Justice Sciences (ACJS), New Orleans, LA.

- Hiller, M. L., Knight, K., & Simpson, D. D. (2000, March). *Deconstructing the process of substance abuse treatment in correctional settings*. Invited speaker at the National Institute on Drug Abuse (NIDA) 2nd Annual Research to Practices conference, Bethesda, MD.
- Hiller, M. L., Leukefeld, C. G., Knight, K., & Simpson, D. D. (2000, November). *Psychological problems and engagement in correctional substance abuse treatment*. Paper presented at the annual meeting of the American Society of Criminology (ASC), San Francisco, CA.
- Knight, K. (2002, February). *Substance abuse treatment: Research in action*. Invited workshop to KETHEA, Therapy Center for Dependent Individuals, Athens, Greece.
- Knight, K. (2002, April). *CJ treatment and community re-entry*. Invited plenary address at the Oregon Corrections Summit, Salem, OR.

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Executive Summary

The primary goal of the NIJ-funded RSAT Outcome Evaluation was to assess offender recidivism following treatment in a 6-month community-based modified TC for probationers in a large Texas county. Official records of arrest that led to incarceration were collected from the Texas Department of Criminal Justice for 406 probationers (290 graduates, 116 dropouts) who were admitted to the program in 1998 and for a comparison group of 100 felony probationers, although eligible, were not admitted to this program during that period.

An examination of recidivism rates for the comparison, graduate, and dropout groups revealed that the treatment dropouts were more likely than their counterparts to have been arrested for a serious felony offense within 2 years of leaving the treatment program. Similar to findings from other recent evaluations of treatment programs for offenders (Brochu, Bergeron, Landry, Germain, & Schneeberger, 2002), the findings from this study suggest that this modified TC had a limited impact on the subsequent criminal justice involvement of probationers during the first year after release. However, after an initial 1-year arrest rate of 17%, a significantly smaller proportion of the treatment graduates (4%) were arrested during the second follow-up year when contrasted with the comparison group and dropout group (each had 10%). In fact, the 2-year arrest rate of the comparison group (23%) surpassed the treatment graduate group (21%). Thus, evidence of treatment benefits begins to emerge only in the second year after treatment.

In addition, a secondary goal of this project was to examine change in social functioning over time among probationers mandated to a 6-month modified therapeutic community, determine which characteristics at intake and which during treatment social functioning indicators were predictive of dropping out of treatment early, and which predicted being arrested 1 and 2 years after treatment. Overall, findings showed that social functioning is an important component of the treatment process; analysis of the social functioning scales, however, did not show a clear impact of treatment on hostility, risk taking, or social conformity during the first 30 days of treatment. Nonetheless, social functioning profiles did differ by treatment retention group. That is, dropouts scored higher on the childhood problems, risk taking, and lower on

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social conformity. Interestingly, while both the dropout and graduate groups showed increased hostility over time, decomposition of the significant time by group interaction revealed that dropouts showed greater increases in hostility scores between treatment intake, and the end of the 30-day orientation phase. These data suggest that this modified therapeutic community had only a limited impact on social functioning or criminal attitudes during the early treatment phase, and that higher hostility, risk taking, and childhood problems, and lower levels of social conformity were related significantly to early dropout from treatment.

Many probationers and parolees under supervision in the community have serious drug and alcohol problems. Although the current data do not unequivocally show that intensive probation-based treatment is effective or ineffective for drug-involved offenders, the study shows this approach does warrant additional research attention and offers guidance on how to improve future studies. Without directed interventions designed to address the problems faced by many probationers as they contend with their drug and alcohol problems, emotional and mental health, employment barriers, and social adjustment, it seems unlikely that these individuals will become productive members of society, but instead will cycle between episodes of addiction and incarceration. Furthermore, results from this project suggest that the overall impact of treatment on social functioning does not appear to happen during the initial orientation or engagement phase of treatment. Rather, it appears that hostility increases over this time, but that a slight increase in hostility might be expected, but a large increase could lead to early dropout. Taken together, the current data highlight the importance of further examining the "black box" of treatment process, and point to the need for careful studies of individual level factors like social functioning in program planning, monitoring, and evaluation. Perhaps a more detailed understanding of individual response to treatment and the factors associated with this will lead to the development of focused interventions that can help overcome unrealistic expectations about treatment and improve motivation during the early phases of treatment when expectations and motivations can prove problematic.

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Outcome Assessment of Correctional Treatment (OACT)

Correctional populations expanded to unprecedented levels during the 1990s, with nearly 6.6 million held in some form of legal custody at the end of 2000 (Bureau of Justice Statistics, 2002). At yearend 2000, approximately 2 million offenders were held in prisons and jails, yielding an incarceration rate of about 1 in every 137 Americans (Bureau of Justice Statistics, 2000), and 4.6 million were on supervised release (i.e., probation and parole, Bureau of Justice Statistics, 2002). Besides having extensive and serious criminal histories, many of these prisoners, parolees, and probationers exhibit numerous social and psychological problems, including substance use and abuse (Bureau of Justice Statistics, 1999c; Leukefeld & Tims, 1993, National Center on Addiction and Substance Abuse, 1998; Peters, Greenbaum, Edens, Carter, & Ortiz, 1998), mental illness (Bureau of Justice Statistics, 1999a; Teplin, 1990, 1994), co-occurring substance abuse and mental health problems (Abram & Teplin, 1991; Hiller, Knight, Broome, & Simpson, 1996; Kayo, Hiller, Narevic, & Leukefeld, 2002), and histories of physical, sexual, and emotional trauma (Bureau of Justice Statistics, 1999b; Hiller, Knight, Rao, & Simpson, 2002).

Correctional Treatment Outcomes

Research has shown that rehabilitation-oriented programming can help ameliorate these types of problems and reduce subsequent involvement in crime and drug use following release from prison (Andrews et al., 1990; Gendreau, 1996). In particular, in-prison therapeutic communities (TCs) have been found to reduce drug use and criminal activity following release (Lipton, 1995, Rawlings, 1999; Simpson, Wexler, & Inciardi, 1999a, 1999b). Five large-scale evaluations of prison-based TCs (reviewed by MacKenzie, 1997; Pearson & Lipton, 1999; Rawlings, 1999) showed that treatment in prison-based TCs was associated with reduced rearrest and reconviction rates and with better parole outcomes (Field, 1985, 1989, 1992; Wexler & Williams, 1986; Wexler, Falkin, & Lipton, 1990; Wexler, Falkin, Lipton, & Rosenblum 1992). Encouraged by these findings, correctional administrators developed additional in-prison therapeutic community programs, which led to the Residential Substance Abuse Treatment

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(RSAT) in State Prisons initiative that provided federal block grant dollars for establishing more TCs in prison.

More recent evaluations of prison-based TCs established in the 1990s have shown findings similar to those reported for the Stay'n Out and Cornerstone programs (Simpson et al., 1999a, 1999b). These evaluations include the examination of the KEY in-prison therapeutic community as well as CREST, a community-based work-release therapeutic community for probationers who complete KEY (Butzin, Martin, & Inciardi, 2002; Inciardi, Martin, Butzin, Hooper, & Harrison, 1997), the prison-based Amity therapeutic community (Lowe, Wexler, & Peters, 1998; Wexler, Melnick, Lowe, & Peters, 1999), and the New Vision therapeutic community for drug-involved prisoners nearing parole (Hiller, Knight, & Simpson, 1999a; Knight, Simpson, & Hiller, 1999) programs. Collectively, these evaluations showed that intensive residential treatment when followed by community-based aftercare can reduce criminality and drug use for up to 3 years following release from prison.

Importance of Community-Based Treatment

Although data from these prison-based TC evaluations are encouraging, most prisoners with substance abuse problems continue to return to the community untreated and to a life of alcohol and drug use and criminal activity. Simply put, there are not enough treatment slots within prison systems to meet the demand. Since 1991, about 90,000 drug offenders have been added to state and Federal prison populations (Bureau of Justice Statistics, 1999c), but the number of intensive treatment slots actually decreased proportionally over this same time period (National Center on Addiction and Substance Abuse, 1998). Even with the recent federal initiatives to expand the availability of treatment to criminal offenders, it is unlikely that the demand for treatment can be met fully within prison-based settings.

While prison populations have grown dramatically, the number of offenders being placed on probation or parole also has increased. However, while expenditures for prisons and jails grew steadily during the 1990s, probation and parole departments saw no such increase in their budgets. Therefore, probation and parole agencies have been asked to do more, without

additional resources, during a time in which the profiles of their clientele have become more serious, rivaled only by those in prison (Petersilia, 1995, 1997). Like prisoners, many of probationers and parolees also have substance abuse problems. For example, drug and DWI offenses continue to be the two most common categories of convictions for those placed under community supervision (24% and 26%; respectively, Petersilia, 1998). Therefore, treatment services provided in community corrections might help offset the shortfall in prison-based treatment slots.

As an enhancement to routine probation, TCs integrate treatment within a controlled environment and maximize supervision – an approach supported by research (e.g., Petersilia, 1995). The Crest Outreach Center is a good example of how the TC has been successfully integrated with probation supervision to achieve this (Lockwood, Inciardi, & Surratt, 1997). Offenders at CREST are monitored closely by correctional authorities and tested frequently for drugs (Lockwood et al., 1997). A similar balance between treatment and probation supervision has been achieved at the Dallas County Judicial Treatment Center (DCJTC; Barthwell et al., 1995) – the evaluation site of this project. At the DCJTC, felony offenders are court-mandated to receive 6 months of treatment in a therapeutic community environment where treatment and probation staff works together to facilitate the individual's recovery.

Finding Ways to Make Treatment Optimally Effective

Regardless of where treatment services are provided, it is critical that research find ways to make treatment optimally effective. The limited research literature that has examined the during treatment process of correctional therapeutic communities indicates that knowing more about the experiences and responses of individuals over time may be important in helping to determine why this type of treatment “works” for some, and does not produce an apparent impact on the drug use and criminal behaviors of others.

Research indicates that therapeutic communities appear to have a positive impact on the psychosocial functioning of the offenders who receive it. For example, using a cohort of prisoners in a mental health TC in Grendon prison, Newton (1998) showed that intropunitive and

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extrapunitive hostility, locus of control, and psychoticism changed over time in response to treatment. These findings are complemented by Broome, Knight, Hiller, and Simpson (1996), who found that during treatment ratings of self-esteem, peer support, and counselor competence were better predictors of rearrest following release from treatment than demographic variables (e.g., age, ethnicity, gender) typically used as predictors in these types of analytic models. Furthermore, motivation for treatment has been shown to be related to higher ratings of during treatment therapeutic relationships, which in turn, were related to lower rates of recidivism following treatment (Broome, Knight, Knight, Hiller, & Simpson, 1997). Finally, a recent series of studies of a focused intervention for increasing treatment engagement among probationers in residential treatment suggest that the treatment perceptions of unmotivated probationers' can be modified, leading to improvement in during-treatment process indicators (Czuchry & Dansereau, 2000, Newbern, Dansereau, & Pitre, 1999; Sia, Dansereau, & Czuchry, 2000).

Theoretically, it is important to examine treatment-related changes in social functioning because therapeutic communities are designed to improve it (De Leon, 1990-91, 1995, 1996, 2000). This is reflected throughout the four philosophical viewpoints that underlie therapeutic communities, including the view of the disorder, view of the person, view of recovery, and view of right living (De Leon, 1995). The view of the disorder proposes that drug abuse is a illness of the whole person that primarily is related to a number of social and psychological problems that must be addressed in order for the person to become fully functioning and drug free. From the TC perspective, the person does not have a problem they are the problem (De Leon, 1995). A variety of social and personal factors like impulsivity, hostility, problems with responsibility and authority, lying and manipulation, and poor tolerance for anxiety and frustration perpetuate the individual's misuse and abuse of a drug. This has lead De Leon (2000) to assert that habilitation is the goal of treatment rather than rehabilitation. Rehabilitation implies that treatment restores something that was lost, but habilitation emphasizes the view that recovery is a learning process during which a person is socialized, quite possibly for the first time, to lead a life of "right living." When a person has entered recovery, they will begin to live "right," by telling the truth,

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adopt an prosocial moral code of what is right and what is wrong, learn a work ethic, live in the here and now, and learn to learn, and become involved in the community. The community or "family" of clients in the TC are used as the method for socializing the individual, often directly confronting negative or antisocial attitudes or behaviors in their peers and imposing the moral code that is at the core of each TC (De Leon, 2000).

Project Goals

This NIJ-funded project examines the outcomes and related treatment process of a 6-month modified therapeutic community for probationers. This is accomplished by 1) a comparison of outcomes between treated probationers and untreated comparisons, and 2) by an assessment of relationships between treatment, social functioning, and recidivism.

Method

Program Description

The Dallas County Judicial Treatment Center (DCJTC), located in Wilmer, Texas, was founded in 1991 by a council of 15 county and district judges as a response to Texas House Bill #2335, which authorized the development of residential correctional treatment centers for the diversion of drug-involved felony offenders from long-term incarceration. Essentially, this program represents one of the most restrictive options the judges have before imposing state jail or prison terms. Offenders frequently wait in jail (up to 6 months) after being committed to treatment for a slot to open. No systematic screening procedures, however, were used during the time covered by this RSAT process evaluation. That is, court officers during their pre-sentencing investigations did not use a standardized information base to guide judges in making decisions about committing an offender to treatment or about which ones had greater needs for intensive therapeutic intervention.

The DCJTC is a 6-month residential substance abuse treatment facility with a 228-bed capacity, including four 35-bed units for males and three 20-bed cottages for females. It is managed by Cornell Corrections, Inc., under contract from the Dallas County Community Supervision and Corrections Department. Like many corrections-based treatment programs (see

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Wexler, 1995, Knight, Simpson, Chatham, & Camacho, 1997), the DCJTC is modeled after the traditional community-based therapeutic community (TC), and it is provided in three major phases, including (a) orientation, (b) main treatment, and (c) re-entry. Treatment includes group and individual counseling, behavior modification, peer-to-peer therapy, life skills training, vocational and educational instruction, regular meetings with an on-site probation officer, and emphasizes 12-Step recovery, criminal thinking patterns, and relapse prevention. Offenders advance through a hierarchical recovery sequence whereby they receive progressively more responsibilities and privileges, as they become more senior members of their treatment "family." Traditional TC therapeutic techniques are used, including confrontation groups, "pull-ups," and morning and evening meetings. However, there are no special interventions directed at facilitating treatment engagement and retention.

Counselors. In June 1998, the TCU Background Record was completed by 38 counselors, which elicited information on age, gender, ethnicity, drug use history (including recovery status), educational background, and counseling experience. Most of the counselors were female (61%) and African American (45%) or Caucasian (40%); their average age was 40. In terms of educational background, 22% had finished only high school, 42% had a two-year associates degree, and 36% had a Bachelor's degree or higher. Thirteen percent had been a drug abuse counselor for at least 10 years, 26% had between 5 and 9 years of experience, and 61% had 4 or fewer years of experience. Furthermore, 71% of the counselors had experience with 12-step programs. When setting was considered, 21% had between 6 to 14 years of experience counseling offenders in corrections-based programs, 26% had 3 to 5 years experience, and 53% of the counselors had 2 years or less (Barthwell et al., 1995). In addition to the professional counselors, the DCJTC also maintained part-time medical and psychiatric staff to provide additional diagnostic and specialized services, such as mental and physical health screening and the prescription of psychotropic medication for residents with depression and anxiety problems. Due to budgetary limitations, neither extensive interviews nor focus groups could be conducted with the program staff.

Sample and Procedure

The evaluation of the 6-month modified therapeutic community began with the prospective collection of baseline and during-treatment data on the 429 probationers admitted to this program in 1998 (many of these data are summarized in Hiller, Knight, Leukefeld, & Simpson, 2002; Hiller, Knight, Rao, & Simpson, 2002). Based on program treatment retention and discharge records, clients were classified as treatment graduates ($n = 290$) and treatment dropouts ($n = 116$). Graduates were comprised of individuals who completed their required treatment at the program, and dropouts were clients who chose to leave the program early or who were discharged for non-compliance with program rules. A third group ($n = 23$) included individuals who were discharged for medical problems or who were transferred to another county for an outstanding arrest warrant. This third group was dropped from the analyses because it represented a set of offenders "not appropriate" for treatment at the DCJTC, leaving a total sample of 406 clients. Treatment retention, therefore, was coded as a dichotomously-scored measure (0 = "graduate;" 1 = "dropout"). As shown in Table 1, the majority of the sample was male (70%), African American (48%) or white (40%). The average age at treatment intake was 32 years old ($SD = 9.2$) and 52% of the sample was age 32 or older. Forty-two percent of the sample had never been married, 27% were married, and 30% were divorced separated or widowed. In terms of education, 40% had a high school diploma and 23% had its equivalent; 50% were unemployed before treatment, 38% had full-time employment, and 12% were employed either part-time or did infrequent work for financial support.

The Dallas County Community Supervision and Corrections Department database was used as the source for identifying a comparison group ($n = 100$) for the current study. This involved generating a list of probationer commitments in Dallas County from July 1997 to December 1998 to identify individuals who placed on felony probation during approximately the same time span as those who went to the modified TC program and who were eligible for, but did not receive, treatment at the DCJTC program. A random sample of 100 probationers was chosen from this list for comparison to the treatment graduate and dropout groups. Demographic

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measures, including gender, ethnicity, and age, were extracted from this database for both the treatment graduate and dropout groups and for the comparison group. Besides the arrest information described below, these variables were the only common data elements available for the individuals included in this study.

Measures

Recidivism. For both treatment and comparison groups, a criminal records search was performed on the Institutional Division database of Texas Department of Criminal Justice for all of the study participants for the 2 years following discharge from treatment (for the treatment group) or following commitment to probation (for the comparison group). Arrest and subsequent incarceration records were available for the 406 of the treatment group clients (graduates, $n = 290$; dropouts, $n = 116$). These records represented felony convictions that led to the commitment of the offender to the Institutional Division of the Texas Department of Corrections.

Overview of treatment measures. In addition to these records, treatment participants were asked to complete a set of data collection forms over their course of treatment. These forms originated in the Drug Abuse Reporting Program (DARP), the first multisite evaluation of community-based treatment funded by the National Institute on Drug Abuse (NIDA, Sells & Simpson, 1976; Simpson & Sells, 1982, 1990). They were modified more recently for use in a project entitled Improving Drug Abuse Treatment, Assessment, and Research (DATAR, Simpson, Chatham, & Joe, 1993; Simpson, Dansereau, & Joe, 1997). The overall evaluation system was adapted further for use in residential correctional settings (also see Knight et al., 1997 for a version used in an in-prison therapeutic community). Revisions to these forms (referred to below as the TCU DCJTC data collection instruments) included rewording items to reference the 6 months prior to the commitment arrest as the timeframe for the collection of baseline information.

Written, informed consent was obtained from each resident prior to the collection of the TCU DCJTC assessments. During their first week of treatment, residents completed a comprehensive intake battery that included, the (a) Initial Assessment, (b) Self-Rating Form

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(SRF), and (c) Intake Interview (Simpson, Knight, & Hiller, 1997). The Initial Assessment was a brief, structured counselor-led interview completed within 24 hours of treatment entry that recorded sociodemographic background information and drug use history. Immediately following this, residents also completed the Self-Rating Form, a 95-item self-report instrument designed to assess psychosocial functioning and treatment motivation at intake. Finally, a counselor administered the Intake Interview approximately 2 to 7 days after the Initial Assessment, after residents had time to become acquainted with the program and staff. It included detailed questions on the resident's social background, family and peer relations, health and psychological status, criminal involvement and history, and drug use problems.

Indicators of during treatment process and therapeutic progress were based on program records and on the (a) TCU Resident Evaluation of Self and Treatment (REST), and (b) TCU Counselor Rating of Client (CRC). The prospective collection of the REST and CRC at the end of treatment months 1, 3, and 6 were linked to major landmarks in a residents' treatment episode (end of orientation, 90-day treatment plan, and discharge plan; respectively).

TCU Initial Assessment. A short face-to-face interview was conducted with a counselor at treatment intake to gather information for state-required diagnostic profiles. It was divided into four major sections: (a) mental status, (b) background and psychosocial functioning, (c) alcohol and other drug use, and (d) psychological status. Indication of a severe mental impairment was gauged through four questions adapted from the Mini-Mental Status Exam (Folstein, Folstein, & McHugh, 1975), such as "What day is it?" and "Where are you?" Information on demographic background and psychosocial functioning included age, ethnicity, insurance coverage, living arrangements, education level, and employment as well as a self-assessment of areas in which the individual felt they needed help (e.g., emotional and psychological problems, substance abuse). Frequency of drug use as well as clinical criteria for drug dependence classification comprised the bulk of the interview; a brief section on psychological problems rounded out this form.

Four independent sections in the Initial Assessment were used to assess Diagnostic and Statistical Manual IV (DSM-IV; American Psychiatric Association, 1994) criteria for dependence and abuse criteria for *Alcohol, Cannabis, Cocaine, and Opioids*. Wording of these items closely followed those found in the DSM-IV, and scoring was identical (i.e., 3 or more criteria met for classification of dependence, 1 or more for abuse on corresponding items). Over half (56%) of the probationers were clinically-dependent on alcohol (15% met abuse criteria), 70% were dependent on cocaine (3% more for abuse), 36% on marijuana (14% for abuse), and 16% on opiates (an additional 1% for abuse).

Similar to the findings of Joe, Brown, and Simpson (1995), two brief measures were created from responses to items on the Initial Assessment that elicited indications of psychological dysfunction (i.e., "Not counting the effects from alcohol or drug use, have you ever experienced serious depression?"). The *pathology index* (coefficient alpha = .66) was comprised of a set of symptoms that included depression, serious anxiety or tension, hallucinations, trouble understanding, concentrating, or remembering, and trouble controlling violent behavior. The majority of the probationers (74%) scored 1 or above on this measure, and the average numbers of symptoms reported was 1.8 (standard deviation = 1.48). The *suicidal ideation* composite (coefficient alpha = .82) focused on two questions that asked probationers if they had ever had "serious thoughts of suicide" or "attempts at suicide."

TCU Self-Rating Form (SRF). This 95-item self-report instrument has been used with a variety of community- and institution-based samples, including prisoners, probationers, and parolees, as well as clients in outpatient methadone treatment. It is organized along three major conceptual divisions, including (a) psychological functioning, (b) social functioning, and (c) motivation for treatment, and each subscale is comprised of at least six items. Administration protocol for this study required that probationers to self-administer the form with minimal help from the counselor (e.g. counselors were allowed to clarify terms or definitions) by indicating their agreement with each statement using a Likert scale that ranged from 1 = "strongly disagree" to 7 = "strongly agree." For additional information, see Knight, Holcom, and Simpson (1994),

who provide a detailed summary of the development of the SRF as well as an extensive assessment of its psychometric properties.

Current levels of psychological functioning were assessed through scales for *depression* and *anxiety* (coefficient alphas of .67 and .74, respectively), and through ratings of *self-esteem* and *decision-making confidence* (coefficient alphas of .66 and .71). Sample items for the anxiety scale included "You feel anxious or nervous," "You have trouble sleeping," and "You have trouble sitting still for long." In addition to these measures of psychological symptoms, the SRF also included the *Pearlin Mastery Scale* (Pearlin & Schooler, 1978) to assess general feelings of self-efficacy (coefficient alpha = .72). For this, residents indicated their agreement with statements such as "You have little control over the things that happen to you" and "There is little you can do to change many of the important things in your life."

Social functioning indicators were comprised of scales for *hostility*, *risk-taking*, and *childhood problems* (coefficient alphas ranged from .74 to .79). Ratings for hostility were made on items like "You have urges to fight or hurt other," "You get mad at other people easily," and "You like others to feel afraid of you." Unlike findings from prior samples (see Knight et al., 1994), an additional scale, social conformity, had low internal consistency reliability (coefficient alpha = .58).

Finally, motivation for treatment was based on the *problem recognition*, *desire for help*, and *treatment readiness* scales (coefficient alphas = .82, .67, and .72, respectively; see also Joe, Knezek, Watson, & Simpson, 1991; Simpson & Joe, 1993). As discussed by Simpson and Joe (1993), these scales represent conceptually distinct "stages" of treatment motivation beginning with problem recognition and culminating with treatment readiness.

TCU Intake Interview. This comprehensive face-to-face interview was organized into nine major sections including, (a) sociodemographic background, (b) family background, (c) peer relations, (d) criminal history, (e) health and psychological status, (f) drug history, (g) AIDS-risk assessment, (h) interviewer comments, and the (i) the client assessment profile. Questions on the offender's sociodemographic background elicited standard types of information

such as age, ethnic identification, marital status, number of children, living arrangements, education level, employment history, and major sources of financial support. Characteristics of the family of origin were assessed next and included reports on parental behavior (i.e. employment, crime and deviance, drug use, warmth), and current patterns of familial interaction were established. The peer relations section was designed to determine the relative size of each offender's social group as well as its level of participation in criminal and drug use activities. Typical items were "How many hours each week (on average) did you generally spend with friends while doing drugs or involved in crime-related activities?" and "Before entering this treatment program, had you ever been a gang member?" Next, a comprehensive criminal history was established, including arrest history (adult and juvenile), incarceration history, illegal activity in the preceding 30 days, and current legal status. A crime chart was used to document lifetime arrests, arrests in the preceding 6 months, and recent activity for 16 offense categories including several types of property and violent crimes. The health and psychological status part of the Intake Interview examined lifetime and current serious health problems as well as recent treatment for psychiatric problems (including prescriptions for psychotropic medication). The drug history chart allowed counselors to quickly and conveniently collect data for 15 types of drugs, including the age a drug was first used, the frequency of use in the preceding 30 days and 6 months, and whether a drug had ever been injected or injected in the previous month. Recent alcohol use was explored further on the next page and detailed information on drinking patterns and amounts of alcohol consumed were documented. Additional questions prompted self-reported reasons for using alcohol and drugs such as "being in a place or situation that made you want them," "to help increase energy and alertness," and "because you felt sick with physical pain." Finally, an exhaustive treatment history was collected; focusing on the number of times the offender was abstinent from drugs for longer than 3 months, and the types of treatment that had been received previously (i.e., inpatient, residential, hospital-based, outpatient, or methadone). The TCU/HIV AIDS-Risk Assessment was incorporated into the next section of the Intake Interview, and data on sexual and injection behavior associated with increased rates of

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exposure to HIV/AIDS was collected. Finally, the interviewer completed the last two segments of the form, which documented their comments on the offender's behavior during the interview as well as their clinical assessment of how important it was for the individual to receive help with a series of problems (e.g., employment, family, drug use). Although numerous composite measures could be created from the data collected on this form (see Joe and Simpson, 1993), for brevity, only a few measures will be summarized below.

A series of questions asked the offenders to rate their peers on a Likert scale ranging from 0 = "never" to 4 = "always." Based on previous work (see Simpson & Joe, 1993; Hiller, Knight, & Simpson, 1999b) and a principal components factor analysis, five composite indices were constructed, including *prosocial behavior* (coefficient alpha = .93; \underline{M} = 2.18) using items like "Your friends work regularly on a job?" and "Your friends spend time with their families?" *Deviance and criminality* (coefficient alpha = .90; \underline{M} = 1.44) asked questions like "Your friends trade, sell, or deal drugs?" and "Your friends do other things against the law?" The level of respect a resident's peer group showed for them was reflected in the *leadership* (coefficient alpha = .85; \underline{M} = 2.13) measure, which was comprised of statements like "Your friends look to you as leader?" and "Your friends ask for your advice about their problems?" Another variable, *problem peers* (coefficient alpha = .80; \underline{M} = 1.63), described the probationers' perceptions that their relationships had generated trouble for them, including ratings for "Your friends cause problems for you?" and "Your friends take risks or chances?" Finally, *support for recovery* (coefficient alpha = .79; \underline{M} = 1.88) assessed the level of peer group encouragement a resident might receive for quitting drugs (e.g., "Your friends believe drug use causes problems" and "Your friends think drug treatment can be helpful"). Examination of intercorrelations among these scales showed a strong, positive association between prosocial peers and support for recovery, and between deviance and criminality and problem peers. A modest, negative relationship was observed between prosocial peers and deviance and criminality.

Two measures were constructed to quantify behaviors shown to be associated with an increased probability of contracting the HIV/AIDS virus. The *risky needle exposure index* was

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formed by adding estimates (from two separate items, coefficient alpha = .67) reflecting the number of times dirty drug injection equipment had been shared. Overall, prevalence rates were low with only 14% of the sample reporting any HIV/AIDS-risky injection drug use behavior. The *risky sex exposure index* described the number of times an individual had sex without using a condom with someone who was not their spouse or primary sexual partner, with someone who was an injection drug user, or in exchange for drugs, money, or gifts. Internal consistency reliability, however, was low (coefficient alpha = .54) suggesting that the individual items should be analyzed separately.

A measure for classifying risk for recidivism among the probationers, modeled after the Lifestyle Criminality Screening Form (LCSF; Walters, White, & Denney (1991), was constructed from information collected in the Initial Assessment, Intake Interview, and SRF. The original LCSF is a "chart audit" usually scored using information in an offender's pre-sentence investigation report (Walters, 1998). Conceptually, it emphasizes four behavioral dimensions related to a criminal lifestyle, including *irresponsibility, self-indulgence, interpersonal intrusiveness, and social rule breaking* (Walters, 1990, 1998). It has good reliability and related psychometric properties (Walters, 1997), and Walters (1998) recommends clinical interpretations based on a total composite score to define "high" (values of 10 and above), "moderate" (7 to 9), and "low" (6 and below) risk categories. In the TCU adaptation of this assessment model, at least two items from each LCSF behavioral dimension were represented in the criminal classification index (coefficient alpha = .66). Items for this composite focused on marital and family relations, education, employment history, substance abuse, and criminal history (especially serious offenses). Scores based on the TCU DCJTC forms ranged from 0 to 15 points (mean = 8). Thirty-four percent of the sample was classified as high risk, 36% moderate, and 30% low. Objective data from official records, however, were unavailable for comparison to this criminality index.

TCU Resident Evaluation of Self and Treatment. This survey was collected three different times during the probationer's tenure at the program (i.e., Months 1, 3, and 6). The first

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section of the REST was a repeated assessment of the SRF, thus providing multiple time series data for assessment of changes in psychosocial functioning from baseline through during treatment intervals. The following two sections were adapted from De Leon (1997), and focused on the offender's perceptions of the structure of the program, and on their experiences while in treatment. The remaining sections of the form included evaluations of the counselor, self-evaluation of the resident's personality, and ratings of group and individual sessions. Hiller (1996) provides additional data on the REST from a sample of parolees who received in-prison therapeutic community treatment.

Based on finding reported in Hiller (1996), resident evaluations of the structural characteristics of the treatment program were made using four scales. *Program environment* (coefficient alpha = .84) described the physical components of the treatment setting such as the morning and evening meetings, work assignments, and rules and regulations (i.e., "house rules and tools"). The second scale, *staff empathy* (coefficient alpha = .87), was made up of appraisals of the caring and helpfulness of the treatment and security personnel. Resident evaluations of their peers and of their treatment group's cohesiveness were reflected in the *peer support* composite (coefficient alpha = .86). The final scale, *sessions* (coefficient alpha = .75), recorded resident satisfaction with their individual and group process counseling sessions.

Resident appraisals of their treatment episode were based on three composite indices. The first, *personal involvement* (coefficient alpha = .80), assessed the extent to which an individual felt committed to and how much they were participating in the therapeutic process. *Personal progress* (coefficient alpha = .79) reflected probationer satisfaction with self-improvements in how they handled the issues surrounding their drug abuse and emotional problems. Finally, *trust* (coefficient alpha = .80) allowed residents to indicate if they felt comfortable and psychologically "safe" around the treatment staff and other clients.

More detailed assessment of the client-counselor relationship was elicited through probationer feedback and included scales for *counselor effectiveness* and *counselor rapport* (coefficient alphas = .93 and .90). The effectiveness of treatment counselors was gauged through

items like (the counselors--) "Motivate and encourage you," "Develop a treatment plan with reasonable objectives for you," and "Help you make changes in your life." Also, the depth of the rapport between client and counselor was established through (your counselors--) "Are easy to talk to," "Respect your opinions," and "Understand your situation and problems."

Counselor Rating of Client (CRC). Repeated CRC assessments (Months 1, 3, and 6) were completed by each client's primary counselor who rated them on set of 25 adjectives (like honest and sincere and manipulative) using a Likert scale ranging from 1 = "strongly disagree" to 7 = "strongly agree." Counselors also indicated the extent to which counseling activities with each client focused on activities like responding to crises or discussing relapse situations and triggers.

Exploratory principal components factor analysis identified four scales from the counselor ratings of the client's characteristics with an Eigenvalue greater than 1. *Treatment engagement* was composed of 8 items (coefficient alpha = .89; \underline{M} = 4.42) and described an individual's involvement in their treatment using statements like the client "participates in group discussions," "pays attention," and "clearly expresses thoughts and feelings." Seven attributes comprised the *rapport with others* scale (coefficient alpha = .86; \underline{M} = 4.95). This included items like the client is "easy to talk to," "warm and caring," "liked by other clients," and "liked by staff." A client's level of *denial* (coefficient alpha = .79; \underline{M} = 4.04) was gauged through ratings on items like the client is "in denial," "unmotivated to recover," and "manipulative." Finally, *psychological problems* (coefficient alpha = .71; \underline{M} = 3.77) were based on the counselor's judgments about a client being "hostile or aggressive," "depressed," "impulsive," "nervous or anxious," or "easily distracted." Examination of scale intercorrelations showed that rapport and engagement shared a strong, positive association, but both were related negatively to ratings of denial and to psychological problems.

Principal components analysis also identified four main themes addressed by counselors during sessions with their clients. *Self-confrontation* (coefficient alpha = .87; \underline{M} = 4.88) addressed topics like "assuming appropriate responsibility," "reducing denial," and "improving

objectivity.” The second major counseling dimension, *life skills development* (coefficient alpha = .89; $M = 4.92$), included an emphasis on “improving communication skills,” “developing coping plans and strategies,” and “making new friends.” *Family* (coefficient alpha = .85; $M = 5.22$) was comprised of these items, “discussing family issues,” “establishing trust and rapport,” “exploring feelings,” “specifying short-term objectives,” and “improving family relations.” Finally, *financial management* (coefficient alpha = .89; $M = 4.03$) focused on “managing finances,” “discussing occupational issues,” and “defining long-range goals.”

Analytic Plan

An examination of outcomes. To achieve the primary objective of assessing differences in outcomes, a 2-stage analytic approach was used. The first analytic step used a series of chi-square tests to make simple comparisons between the treatment graduates, dropouts, and comparison groups on the percentage who had been arrested for a serious felony 1 and 2 years after leaving the program (or being placed on probation for the comparison group). To control for pre-existing differences between the groups (i.e., age and gender), two logistic regressions were estimated during the second analytic step to examine the relative impact of treatment on recidivism while adjusting for these differences. Two dummy coded variables were created for comparing the graduates to the rest of the sample, and for comparing the dropouts to the rest of the sample. The comparison group was used as the reference group for these analyses.

An examination of social functioning, treatment dropout, and recidivism. As a secondary objective of this project, the relationships between recidivism, social functioning, and treatment dropout were assessed. Data were analyzed using an approach that combined univariate tests with multivariate statistical modeling (e.g., logistic regression). To determine if treatment affected social functioning, a series of repeated measures Analysis of Variance (ANOVA) tests were computed that used treatment retention status (graduates versus dropouts) as the between subjects factor, time (baseline to the end of the first 30 days of treatment) as the within subjects factor and the social functioning scales (i.e., hostility, risk taking, and social conformity scores) as the dependent measures. The social functioning scales from the REST

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survey taken at the end of the first 30 days (i.e., end of the Orientation phase of the program) of treatment were used as dependent measures in the current study because this time point in the prospective data system had the largest amount of complete data, limiting the impact of missing data on subsequent analyses. This set of analyses, therefore, compared the initial impact of treatment on social functioning scores for both treatment graduates and dropouts. Next, similar to the analyses of an earlier cohort admitted to the DCJTC during 1997 (see Hiller, Knight, & Simpson, 1999b), a two-stage analytic approach to examine the predictors for treatment dropout. First univariate tests, ANOVA for continuously scaled variables and Chi Square for dichotomously scaled variables, were used to compare dropouts and comparison groups on a several variables representing sociodemographic background, drug dependence classification, criminal history (including the scores on the Lifestyle Criminality Screening Form composite measures), and social functioning. Next, following a data analysis strategy suggested by Hosmer and Lemeshow (1989) variables that were related to dropout (i.e., zero-order correlations had a value of $p < .25$) were loaded into a simultaneous logistic regression model for predicting early dropout from treatment. Finally, the same analytic approach was used for predicting dropout (described in the previous objective). This involved examining the bivariate correlations of potential predictors with arrests within one and two-years after leaving treatment. Variables associated to arrest ($p < .25$) were examined in logistic regression equations for predicting 1- and 2-year arrests.

Results

Recidivism

Group Differences. Although the comparison group was drawn randomly, some baseline differences between the comparison and treatment groups were found. Overall, 70% of the sample was male, 10% indicated Hispanic ethnicity, and the average age was 32.2 years. Findings showed that the three study groups were different in terms of their gender and average age (see Table 2). For example, the treatment dropouts were significantly less likely to be male (60%) when compared to the graduate and the comparison groups (73% and 72% male,

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respectively; $\chi^2 (2, N = 506) = 6.66, p < .05$]. Treatment graduates ($M = 33.5$) were significantly older on average than dropouts ($M = 29.7$) and comparison group members ($M = 31$) [$F (2, 503) = 8.29; p < .01$].

Simple outcome comparisons. As shown in Table 3, chi-square analyses indicate there were no statistically significant differences in the 1-year arrest rates between groups, with 20% of the dropout, 17% of the graduate, and 13% of the comparison groups arrested within 1 year of discharge [$\chi^2 (2, N = 506) = 1.80, p = ns.$]. Analysis of 2-year arrest rates showed that the dropout group (30%) was significantly more likely than the comparison and graduate groups to be arrested within two years of discharge; $\chi^2 (1, N = 506) = 3.71, p = .05$]. Interestingly, the graduate group showed a significantly smaller change in the percentage arrested during year 2 (only 4% more of this group were arrested during year 2) than the comparison and dropout groups. A total of 10% more of each of these two groups were arrested during the second year after release [McNemar's $\chi^2 (1, N = 506) = 219.4, p < .001$], with the percentage of the comparison group arrested within 2 years (23%) surpassing the treatment group (21%). Thus, it appears that effects of treatment on recidivism emerged during the second year, with a significantly smaller percentage of the treatment graduates being arrested during this timeframe than the treatment dropouts or comparison group.

Multivariate outcome models. Two logistic regression models were estimated to predict 1- and 2-year arrest rates using the data elements common for all groups. This was done to help control for pre-existing differences between the study groups (described above) to help estimate the impact of treatment on recidivism while statistically adjusting for these differences. These models are summarized in Table 4. Results for the first model showed that the dropouts, after controlling for gender, ethnicity, and age, were about 2 times (Odds Ratio = 1.9) and graduates were about 1.5 times (Odds Ratio = 1.5) more likely to be arrested during the first year after their discharge from treatment. The second model shows that graduates were about 10% less likely to be arrested and the dropouts were 160% more likely to be arrested within 2 years of discharge. Males also were about 1/3 less likely to be arrested than females.

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Social Functioning, Treatment Dropout, and Recidivism

Descriptive statistics, item-to-total correlations, and coefficient alphas for social functioning scales ($N = 404$) can be found in Table 5. As noted previously, change in social functioning between treatment intake and the end of the 30-day orientation phase of the program was analyzed with a series of repeated measures ANOVAs with retention status (graduate versus dropout) as the between groups factor and time as the within subjects factor. Findings shown in Table 6 indicate that dropouts had significantly higher scores on the childhood functioning ratings taken at intake [$F(1, 402) = 7.17, p < .01$]. Significant main effects for time, group, and a significant group*time interaction, showed that dropouts had significantly higher levels of hostility at intake, both groups became more hostile over time, but dropouts showed a larger increase in hostility over time than graduates showed [$F_{\text{interaction}}(1, 402) = 6.91, p < .01$]. In terms of risk taking, a significant main effect for group [$F(1, 402) = 6.09, p < .05$] showed that dropouts scored higher on this indicator, but there was not a significant change in this over the first 30 days of treatment. Finally, a similar pattern of findings emerged for social conformity scores, with graduates showing higher levels of social conformity [$F(1, 402) = 5.98, p < .05$], but this also did not change significantly over the first 30 days.

Prediction of early treatment dropout. The examination of the zero-order correlations between potential predictors and early treatment dropout showed (see Table 7) that a number of demographic variables, criminal history, drug use, and social functioning variables were related to dropout. For example, having a more serious criminal history, as indicated by lifetime arrests and incarcerations and the Life Style Criminality screening form composite were related to higher dropout rates ($r_s = .11, .14, \text{ and } .16$, respectively). Classification of alcohol dependence ($r = .15, p < .01$) also was related to a higher likelihood of leaving treatment. Scores on social functioning scales taken at intake and again 30 days later at the end of treatment orientation also showed a significant relationship with dropout. For example, higher scores on childhood functioning collected at intake were related to dropping out of treatment ($r = .13, p < .01$).

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Higher scores on hostility ($r = .26, p < .001$) and risk-taking ($r = .10, p = .05$) measures and higher scores on social functioning ($r = -.12, p < .05$) collected at the end of the 30-day treatment orientation phase also were significantly related to dropout.

When considered together in a logistic regression equation predicting dropout, three variables emerged as significant predictors of dropout. Men were significantly less likely than women to leave treatment prematurely ($b = -.86, p < .01$). Residents who were not employed in the 30 days prior to treatment were significantly more likely to quit treatment ($b = .59, p < .05$), and higher hostility scores at the end of the 30-day orientation phase were related to dropout ($b < .37, p < .01$). A marginally significant result showed that older residents were less likely to leave treatment ($p = -.54; p < .10$).

Prediction of 1-year and 2-year arrests. The of the results from the zero-order correlations and logistic regression analyses for the correlates of 1- and 2-year rearrest were very similar, and the summary of these findings is combined below. When the zero-order correlations between potential predictors of arrest during the first and second year after leaving treatment were examined (see Table 8), findings showed that only a few variables were significantly associated statistically with arrest, and several other variables were associated marginally (that is, $p < .25$). For example, being unemployed in the 30 days prior to treatment entry was related significantly to a higher probability of being arrested within one ($r = .12, p < .05$) and two years ($r = .11, p < .05$) of leaving treatment. As one might expect having a more serious criminal history also was related to arrest. Residents' who reported 6 or more incarcerations during their lifetime were significantly more likely to be arrested within one ($r = .12, p < .05$) and two years ($r = .13, p < .05$) after treatment. Age at first arrest, however, appeared to act as a protective factor in these analyses. That is, the older a resident was when they were first arrested, the less likely they were to be arrested during the follow-up interval. Scores on social functioning scales taken at intake and again 30 days later were related only marginally with the likelihood of being arrested one and two years after leaving treatment. For example, risk-taking scores taken at intake were marginally related to one-year arrest ($r = .08, p < .25$), but higher risk-taking scores

at intake were significantly related to being arrested within two years ($r = .10, p < .05$). Childhood functioning scores collected at intake also were marginally related to arrest one ($r = .06, p < .25$) and two years after treatment ($r = .07, p < .25$). Finally, higher scores on hostility collected 30 days after treatment intake also were marginally related too arrest within two years ($r = -.06, p < .25$) of leaving treatment.

When separate logistic regression equations were calculated for predicting arrest within one-year, and within two years of leaving treatment, a small number of variables emerged as significant predictors in both models. Residents who were unemployed in the 30 days preceding treatment intake, and those who had been incarcerated 6 or more times in their lifetime were more likely to be arrested one and two years after treatment. Residents categorized as alcohol dependent also were marginally less likely to be arrested within one year. One additional predictor emerged in the equation predicting arrest within two years. Higher ratings of hostility at the end of the orientation period were related to a lower probability of being arrested within two years ($b = -.28, p < .01$).

Discussion

The primary purpose of this NIJ-funded project was to test the effectiveness of a probation-based TC for reducing recidivism to the criminal justice system. Similar to findings from other recent evaluations of treatment programs for offenders (Brochu et al., 2002), the results from this study suggest that the 6-month modified TC had a limited impact on the subsequent criminal justice involvement of probationers during the first year after release. Analyses showed that the treatment dropouts were more likely to have been arrested for a serious felony offense within 2 years of leaving the treatment program. However, after an initial 1-year arrest rate of 17%, a significantly smaller proportion of the treatment graduates (4%) were arrested during the second follow-up year when contrasted with the comparison group and dropout group (each had 10%). In fact, the 2-year arrest rate of the comparison group (23%) surpassed the treatment graduate group (21%). Thus, evidence of treatment benefits begins to emerge only in the second year after treatment, acting as a protective factor from being arrested

for a serious felony. Although short of statistical significance, results of logistic regression analysis that adjusted for pre-existing group differences suggested the treatment graduates were about 10% less likely to be arrested within 2 years after leaving the program. When considered together, these findings suggest that reductions in arrest rates are not evident during the first year after treatment discharge, but by the second year, the proportion of those arrested drops dramatically (from 17% to 4%).

The current evaluation found less of an impact for probation TC treatment on recidivism than was initially expected. Data reported for evaluations of in-prison TCs showed that these programs were effective for reducing subsequent involvement in drug use and crime, especially when combined with some form of intensive aftercare (see Butzin et al., 2002; Hiller, Knight, & Simpson, 1999a, Inciardi, Surratt, Martin, & Hooper, 2002). While some of the probationers who received TC treatment also received aftercare, the program records of these treatments episodes were not kept systematically. Unfortunately, aftercare could not be added as an explanatory variable in this study, and the effectiveness of aftercare for helping probationers to re-enter the community was untested. It may be that this type of transitional programming led to improved outcomes over and above TC treatment only, so future evaluations would benefit from including this information.

It is important to note that offenders who participate in residential treatment programs often are under higher levels of supervision following treatment (Knight et al., 1999), and thus more likely to have a violation of their release conditions detected. Although post-release supervision data were not available for analyses, results from those who participated in the DCJTC program may have been more favorable during the second year because their level of supervision most likely had been reduced to a level similar to that of the comparison group. When possible, future studies also need to assess the relationship between levels of post-release supervision and outcomes.

A secondary goal of this project was to examine change in social functioning over time among probationers mandated to a 6-month modified therapeutic community, determine which

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characteristics at intake and which during treatment social functioning indicators were predictive of dropping out of treatment early, and which predicted being arrested 1 and 2 years after treatment. Overall, findings showed that social functioning is an important component of the treatment process, and that more needs to be done to study this and for developing focused interventions targeting hostility, risk taking, and social conformity and criminal attitudes for improving treatment retention and outcomes.

Analysis of the social functioning scales, however, did not show a clear impact of treatment on hostility, risk taking, or social conformity during the first 30 days of treatment. Nonetheless, social functioning profiles did differ by treatment retention group. That is, dropouts scored higher on the childhood problems, risk taking, and lower on social conformity. Interestingly, while both the dropout and graduate groups showed increased hostility over time, decomposition of the significant time by group interaction revealed that dropouts showed greater increases in hostility scores between treatment intake, and the end of the 30-day orientation phase. These data suggest that this modified therapeutic community had only a limited impact on social functioning or criminal attitudes during the early treatment phase, and that higher hostility, risk taking, and childhood problems, and lower levels of social conformity were related significantly to early dropout from treatment. Although, as described previously, therapeutic communities are intended to “treat the whole person,” it appears that additional attention needs to be focused early in treatment on hostility and risk-taking to improve retention and graduation rates.

Although social functioning was expected to improve substantially soon after probationers entered a treatment environment that removed them from the influence of deviant peers and confronted antisocial thoughts and actions, it may be important to look at changes in these indicators over a longer period of time to get a better idea how hostility, risk-taking, and social conformity change across the treatment episode. In a previous paper (Hiller, Knight, Rao, & Simpson, 2002), data collected across the entire treatment episode for this cohort of residents was examined. Growth curve analyses were used because these models are robust to missing

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data, and findings showed that indicators for psychological and social function improved across the course of treatment. Residents' self-esteem and self-confidence increased and depression ratings dropped significantly over the 6 months they were in treatment. In terms of social functioning, hostility increased across the treatment episode and not just during the initial 30-day orientation phase (as described in the current manuscript), but risk-taking decreased significantly after the initial 30 days of treatment. Therefore, while initial risk-taking scores were associated with increased risk for early dropout, the resident's impulsivity and need for novelty can be modified therapeutically if they remain in treatment.

A more thorough examination of early dropout from treatment showed that other indirect indicators of poorer social functioning, like being unemployed in the 30 days before entering treatment, as well as higher hostility at the end of the 30-day orientation phase were among the strongest predictors of leaving treatment early. These data suggest that persons with more problematic social functioning (i.e., poor employment history, high hostility) are likely to drop out of treatment early, and more needs to be done to determine how this can be prevented. For example, it may be possible to help the offender, who typically is under court mandate for treatment and likely to be unmotivated to enter treatment, to become engaged earlier in the treatment episode. Some data suggests (McCorkel, Harrison, & Inciardi, 1998) that many individuals voluntarily leave treatment in prison-based therapeutic communities because treatment fails to match their expectations. Therefore, structured interventions that specifically are designed to help the resident to get through the first phase of treatment and to induce motivation and commitment to treatment seem important (see Farabee, Simpson, Dansereau, & Knight, 1995). To address the issue of improving early engagement in treatment, a set of treatment readiness and induction interventions have been designed and tested over the past several years by researchers at Texas Christian University to enhance early therapeutic engagement in corrections-based substance abuse programs. These induction materials help offenders to define their roles in treatment and to discover their personal strengths and hidden cognitive potentials, and they also help improve an offender's confidence in treatment by

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emphasizing that treatment can help them and that they can be successful in treatment and in their recovery (Blankenship, Dansereau, & Simpson, 1999; Czuchry & Dansereau, 2000; Newbern et al., 1999; Sia et al., 2000). Broader study of these materials are needed to confirm the relevance and transfer of these materials across correctional samples as well as samples of clients in community-based treatment.

Women were significantly more likely than men to drop out of treatment early. This pattern highlights the need to specifically explore the treatment experiences of women in therapeutic community treatment (McCorkel et al., 1998, Messina & Prendergast, 2001). Women offenders and drug abusers present a complex clinical picture combining issues around victimization and abuse, psychological comorbidity, poor self-esteem and assertiveness skills, children, health problems, and poor educational levels and work histories (Chatham, Hiller, Rowan-Szal, Joe, & Simpson, 1999; Langan & Pelissier, 2001; Peters, Strozier, Murrin, & Kearns (1997); Prendergast, Wellisch, & Falkin, 1995; Prendergast, Wellisch, & Wong, 1996). As Messina and Prendergast (2001) indicate, the relevance and effectiveness of the therapeutic community for drug-involved women offenders still is unknown, and almost nothing is known about their treatment experiences in the TC. It should be noted that program administrators were aware of the higher dropout rates for women from the program and took specific actions to address this. Modifications included having fewer women in each community (maximum of 20, compared to 35 for the men), having only women counselors and clinical staff for each community, refocusing and reducing the amount of confrontation in the therapeutic community, and having a psychiatrist perform a detailed exam on each women. These changes were implemented fully before the current data were collected, and findings show that women continue to dropout of treatment at a significantly higher rate even after the program improvements were made. More study is needed of this, and should focus on additional issues like determining the role that the women's substance abuse has played in custody of dependent children and relationships with significant others (including partners and family). Perhaps specific interventions could be developed for these and other issues that might emerge in a

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systematic study of the reasons women leave treatment that could improve their retention rates and subsequent outcomes.

Criminal history appears to be an important issue when making treatment plans and for developing specialized interventions for handling issues around this characteristic. The findings suggest that that some of the residents in the sample may have been more "criminal." That is, a fairly large proportion of the sample had a serious criminal history, with more than half of the sample reporting they had been arrested and incarcerated 6 or more times. In addition, employment problems were a consistent predictor of treatment dropout, and subsequent rearrest. If one considers being unemployed and having a serious criminal history together, two interpretations of these findings emerge. The first explanation could be that a fairly substantial number of the residents are entrenched in procriminal and antisocial attitudes and beliefs (Samenow, 1984, 1998; Simourd & Van De Ven, 1999; Walters, 1996; Walters & Elliot, 1999; Yochelson & Samenow, 1986) including social norms that are not conducive to holding a steady job and are likely to lead to a poor treatment prognosis and response from a treatment program that focuses first on substance use and abuse and to a much lesser extent on correcting criminal thinking errors. Social modeling of prosocial behavior is expected to come primarily from the resident's peers in their community, but if a large proportion of this reference group is antisocial, then the impact of socialization experience of the TC may be expected to be attenuated. One has a difficult time modeling what one does not know well. Therefore, a more directed staff-led intervention designed to highlight, confront, and correct criminal thinking errors and attitudes might prove a useful. Alternatively, another explanation could be that offenders with extensive criminal histories (that include felony convictions) have a difficult time finding a job that will enable them to have greater stability in their life and income and facilitate a long-term recovery. For these individuals, a focused employment readiness intervention is needed that will help them learn how to present their felony arrest record to potential employers, develop resumes and complete job applications, and acquire lifeskills like time management, a work ethic, and personal budgeting that could help them secure and maintain stable employment (Platt, 1995;

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Walker & Leukefeld, 2002), and possibly have greater retention in treatment and more positive outcomes.

Although the combination of the findings that higher levels of hostility leads to early dropout, that treatment dropouts had significantly higher rates of arrest at follow-up than graduates (see Hiller, Knight, & Simpson, 2002) and that higher rates of hostility also were associated with a lower probability of arrest within two-years seems inconsistent, it is important to consider and interpret these findings within the context of the therapeutic community. For example, the confrontational approach of the therapeutic community is intended to generate some anger and hostility as a resident is forced by their peers to examine their life and their abuse of drugs and overcome denial that a problem exists. The current data shows that a certain amount of hostility may be appropriate, but when taken too far, might lead to premature dropout from treatment. During the initial orientation phase of treatment, residents become inducted into the community, which prizes openness, honesty and responsibility, values that typically were not emphasized during an offender's development or within their peer networks prior to their entering the therapeutic community. Anecdotally, program staff indicated that residents who were "working their program" were expected to be somewhat hostile initially because they had to confront and change antisocial values, and replace them with the norms of the therapeutic community, placing their old and their new life in direct conflict. However, future studies should explore this more fully, and considering capturing the qualitative experience of each resident and relating this to internal psychological states like resistance and hostility.

There were limitations for the current study related to the recidivism measure and to the comparison group. Only one measure of recidivism was used – namely arrests that led to incarceration in the Texas Department of Criminal Justice. Ideally, multiple measures including other types of arrests, convictions, probation violations, and incarceration should have been examined to allow for more extensive testing of the impact of treatment on recidivism. This arrest measure also was extracted from a different database than was used for evaluations of both an in-prison therapeutic community in Texas and an earlier admission cohort for the current

program (Knight et al., 1997; Hiller, Knight, Devereux, & Hathcoat, 1996; Knight & Hiller, 1997), limiting comparison of the current findings to those from these studies. Furthermore, only a modest amount of additional information was available for the comparison group, limiting analyses to a few common data elements, including gender, ethnicity, and age. Groups may not have been equivalent on some measures (such as treatment motivation and treatment history), further threatening the validity of the contrasts between the treatment groups and the comparison group. Perhaps more troubling, it is unknown if the probationers in the comparison group received services for drug and alcohol problems while they were on probation. While they did not receive the intensive residential services provided by the modified TC, they nevertheless could have received services elsewhere. Therefore, it is unknown if the comparison group constituted a "no-treatment" group. It seems likely that many of these individuals would have received some level of services which would further confound its comparison with the treatment graduate and dropout groups.

In conclusion, many probationers and parolees under supervision in the community have serious drug and alcohol problems. Although the current data do not unequivocally show that intensive probation-based treatment is effective or ineffective for drug-involved offenders, the study shows this approach does warrant additional research attention and offers guidance on how to improve future studies. Without directed interventions designed to address the problems faced by many probationers as they contend with their drug and alcohol problems, emotional and mental health, employment barriers, and social adjustment, it seems unlikely that these individuals will become productive members of society, but instead will cycle between episodes of addiction and incarceration. Furthermore, results from this project suggest that the overall impact of treatment on social functioning does not appear to happen during the initial orientation or engagement phase of treatment. Rather, it appears that hostility increases over this time, but that a slight increase in hostility might be expected, but a large increase could lead to early dropout. Taken together, the current data highlight the importance of further examining the "black box" of treatment process, and point to the need for careful studies of individual level

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factors like social functioning in program planning, monitoring, and evaluation. Perhaps a more detailed understanding of individual response to treatment and the factors associated with this will lead to the development of focused interventions that can help overcome unrealistic expectations about treatment and improve motivation during the early phases of treatment when expectations and motivations can prove problematic.

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Table 1

Demographics, Social History, Drug Use, and Criminality Indicators at Treatment Intake

Characteristic	Sample (N = 402)
Demographics	
% Male	70
Race/Ethnicity	
% African American	48
% Caucasian	40
% Hispanic	9
% Other	3
Marital Status	
% Never Married	42
% Married	27
% Divorced/Separated/Widowed	30
Age	
Average age (SD)	32 (9.2)
% Age 32 or older	52
Education	
% High School Graduate	40
% GED	23
Employment (30 Days prior to last arrest)	
% None	50
% Part-time or infrequent work	12
% Full-time	38

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Table 1 (Continued)

Characteristic	Sample (N = 402)
Criminality and Criminal History	
Average Lifetime Arrests (SD)	8.8 (8.1)
% 6 or More Arrests	53
Average Age at First Arrest (SD)	20.3 (7.0)
% Arrested Before Age 18	43
Average Lifetime Incarcerations (SD)	8.4 (9.8)
% 6 or More Incarcerations	51
Criminality classification index (LCSF)	
Total score (Mean/SD)	8.1 (2.76)
% Low risk	30
% Moderate risk	35
% High risk	35
Drug Classification Indices	
% Alcohol Dependence	55
% Cocaine Dependence	69
% Cannabis Dependence	36
% Opioid Dependence	16

Note. Standard deviations appear in parentheses. Four cases that did not complete the Initial Assessment Interview are omitted from these analyses.

Table 2

Comparison of Demographics for Study Group (N = 506)

Outcome	Study Group			Total Sample (<u>N</u> = 506)
	Comparison (<u>n</u> = 100)	Dropout (<u>n</u> = 116)	Graduate (<u>n</u> = 290)	
% Male*	72a	60b	73a	70
% Hispanic	14	9	9	10
Average Age Years (SD)**	31.0 (9.3)a	29.7 (8.2)a	33.5 (9.4)b	32.2 (9.2)

Note: Values marked by a different subscript were significantly different in Chi-Square or ANOVA tests at $p < .05$. Because 17 cases were missing values on ethnicity, the comparison for percentage Hispanic was based on N = 489.

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

Table 3

Comparison of Arrest Rates by Study Group (N = 506)

Outcome	Study Group			Total Sample (N = 506)
	Comparison (n = 100)	Dropout (n = 116)	Graduate (n = 290)	
% Rearrested during 1st Year	13	20	17	17
% Rearrested during 2nd Year*	23a	30b	21a	24
% Change in Percentage Arrested (Year 2-Year 1)***	10a	10a	4b	7

Note: Percentages marked by a different subscript were significantly different in Chi-Square tests at $p < .05$.

* $p < .05$; *** $p < .001$

Table 4

Summary of Logistic Regressions Predicting Arrest

Predictor	Model 1 - Arrested 1/Year		Model 2 - Arrested 2/Years	
	B	Odds Ratio	B	Odds Ratio
Graduate	.38	1.5	-.05	0.9
Dropout	.62†	1.9	.46	1.6
Male	.01	1.0	-.29	0.7
Age	-.01	1.0	-.02	1.0
Hispanic	-.08	0.9	.02	1.0

Note: Because 17 cases were missing values on ethnicity, the models are based on a total sample size of $N = 489$.

† $p < .10$

Table 5

Descriptive Statistics, Item-to-Total Correlations, and Coefficient Alphas
for Social Functioning Scales ($N = 404$)

Scale/Items	Mean	SD	Item-to-Total r
Childhood Problems (coefficient alpha = .75)	3.70	1.30	----
You skipped school while growing up	4.67	2.32	.35
You took things that did not belong to you when you were young	3.92	2.28	.39
You had good relations with your parents while growing up (R)	2.76	2.02	.50
You had feelings of anger and frustration during your childhood	4.06	2.21	.58
You got involved in arguments and fights while growing up	4.07	2.15	.45
While a teenager, you got into trouble with school authorities or the police	3.71	2.39	.48
You had good self-esteem and confidence while growing up (R)	3.42	2.08	.41
You were emotionally or physically abused while you were young	3.00	2.36	.40
Hostility (coefficient alpha = .79)	2.99	1.34	----
You feel mistreated by other people	3.28	1.90	.26
You like others to feel afraid of you	2.03	1.49	.32
You have urges to fight or hurt others	1.98	1.54	.59
You have a hot temper	3.03	2.03	.63
Your temper gets you into fights or other trouble	2.92	2.04	.68
You get mad at other people easily	3.05	1.91	.64
You have carried weapons, like knives or guns	3.83	2.50	.36
You feel a lot of anger inside you	3.82	2.15	.56

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Table 5 (Continued)

Scale/Items	Mean	SD	Item-to-Total r
Risk Taking (coefficient alpha = .77)	4.06	1.26	----
You like to take chances	4.86	1.82	.48
You like the "fast" life	3.87	2.08	.51
You like friends who are wild	3.07	1.96	.55
You like to do things that are strange and dangerous	4.64	1.94	.48
You avoid anything dangerous (R)	3.95	2.03	.49
You only do things that feel safe (R)	4.21	1.89	.53
You are very careful and cautious (R)	3.82	1.79	.41
Social Conformity (coefficient alpha = .59)	5.32	.85	----
You feel people are important to you.	5.99	1.33	.30
You feel honesty is required in every situation	5.76	1.57	.37
You have trouble following rules and laws (R)	4.29	2.08	.28
You depend on "things" more than "people" (R)	4.49	1.81	.21
You keep the same friends for a long time	4.72	2.02	.14
You work hard to keep a job	5.17	1.92	.32
Your religious beliefs are very important in your life	5.79	1.58	.34
Taking care of your family is very important	6.39	1.18	.37

Note. An (R) indicates that the item scoring should be reflected. Ratings were made on a Likert scale of 1 - "strongly disagree" to 7 - "strongly agree"

Table 6

Changes in Initial Social Functioning by Treatment Dropouts and Graduates

Social Functioning Scales	Treatment Retention Group			
	Dropouts		Graduates	
	Intake	End of 30-Day Orientation Phase	Intake	End of 30-Day Orientation Phase
Childhood Problems	3.99 (1.40)	----	3.59 (1.30)	----
Hostility	3.33 (1.32)	3.80 (1.40)	2.86 (1.20)	3.01 (1.28)
Risk Taking	4.31 (1.33)	4.35 (1.20)	3.96 (1.21)	4.08 (1.24)
Social Conformity	5.20 (0.95)	5.14 (0.85)	5.38 (0.80)	5.35 (0.79)

Note. Because childhood problems scores represent deviant attitudes and actions early in development, it is analyzed only at intake. Standard deviations appear in parentheses.

Table 7

Summary of Zero-Order Correlations and Final Logistic Regression
Model Predicting Treatment Dropout ($N = 402$)

Predictor	r	b	SE	χ^2	Odds Ratio
Intercept	---	-1.30	1.60		
Male	-.12*	-.86**	.30	8.20	.4
White	-.07	-.32	.28		
Age 32 or older	-.15**	-.54†	.30		
Divorced/separated/widowed	-.08	-.10	.30		
High school graduate	-.10*	.09	.24		
Unemployed	.16**	.59*	.26	5.21	1.8
Alcohol dependence	.06	.13	.26		
Cannabis dependence	.15**	.42	.27		
6 or more lifetime arrests	.11*	.40	.47		
Age at first arrest	-.08	.01	.03		
6 or more lifetime incarcerations	.14**	.46	.45		
LCSF total score	.16**	.05	.06		
Childhood problems at intake	.13**	-.13	.12		
Hostility at end of 30-day orientation phase	.26***	.37**	.12	10.12	1.5
Risk taking at end of 30-day orientation phase	.10*	-.07	.13		
Social conformity at end of 30-day orientation phase	-.12*	-.16	.18		

Note. Variables correlated with dropout ($p < .25$) were included in the logistic regression (see Hosmer & Lemeshow, 1989). Chi Squares and odds ratios are presented only on the variables that were statistically significant ($p < .05$) in the final model for prediction of early dropout.

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 8

Summary of Zero-Order Correlations and Final Logistic Regression
Model Predicting Arrests One and Two Years after Treatment (N = 402)

Predictor	Model 1 (Predicting One-Year Arrest)			Model 1 (Predicting Two-Year Arrest)		
	r	b	Odds Ratio	r	b	Odds Ratio
Intercept	---	-1.58	---	---	-.31	---
Male	---	---	---	-.06	-.34	
Age 32 or older	-.06	-.03		-.11*	-.38	
Divorced/separated/widowed	-.06	-.35		-.07	-.24	
High school graduate	-.08	-.23		-.09	-.28	
Unemployed	.12*	.61*	1.8	.11*	.52†	
Alcohol dependence	-.06	-.45†		-.07	-.34	
Cocaine dependence	.06	.32		.06	.42	
6 or more lifetime arrests	.08	-.35		.07	-.42	
Age at first arrest	-.10*	-.03		-.12*	-.03	
6 or more lifetime incarcerations	.12*	.86†		.13*	1.07*	2.9
Childhood problems at intake	.06	-.05		.07	.01	
Risk taking at intake	.08	.09		.10*	.11	
Hostility at end of 30-day treatment orientation phase	---	---	---	-.06	-.29**	0.8

Note. Variables correlated with arrest ($p < .25$) were included in the logistic regressions (see Hosmer & Lemeshow, 1989). Odds ratios are presented only on the variables that met statistical significance ($p < .05$) in the final models for predicting arrest with in 1 and 2 years after leaving treatment.

† $p < .10$; * $p < .05$; ** $p < .10$

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