

Journal of Drug Issues

<http://jod.sagepub.com/>

Beyond Crime and Drug Use : Do Adult Drug Courts Produce Other Psychosocial Benefits?

Mia Green and Michael Rempel
Journal of Drug Issues 2012 42: 156
DOI: 10.1177/0022042612446592

The online version of this article can be found at:
<http://jod.sagepub.com/content/42/2/156>

Published by:



<http://www.sagepublications.com>

On behalf of:



**COLLEGE OF CRIMINOLOGY
AND CRIMINAL JUSTICE**

[Florida State University College of Criminology and Criminal Justice](http://www.fsu.edu/criminology)

Additional services and information for *Journal of Drug Issues* can be found at:

Email Alerts: <http://jod.sagepub.com/cgi/alerts>

Subscriptions: <http://jod.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations: <http://jod.sagepub.com/content/42/2/156.refs.html>

>> [Version of Record](#) - Jun 25, 2012

[What is This?](#)

Beyond Crime and Drug Use: Do Adult Drug Courts Produce Other Psychosocial Benefits?

Journal of Drug Issues
42(2) 156–177
© The Author(s) 2012
Reprints and permission: <http://www.sagepub.com/journalsPermissions.nav>
DOI: 10.1177/0022042612446592
<http://jod.sagepub.com>



Mia Green¹ and Michael Rempel²

Abstract

An extensive body of research indicates that adult drug courts reduce reoffending, whereas a more limited number of studies point to reductions in drug use as well. However, barely any research examines whether these programs produce benefits in other areas, including socioeconomic well-being, family relationships, mental health, and homelessness. To fill this important gap, findings are presented from a quasi-experimental study of 1,156 drug court participants from 23 sites and 625 comparison offenders from 6 sites where drug courts are unavailable. Six-month follow-up interviews were conducted with 1,533 offenders (86%) and 18-month interviews with 1,474 (83%) offenders. Findings indicate that drug courts produced modest positive effects (though many were not statistically significant) across a range of socio-economic outcomes. Findings also indicate that drug courts reduced family conflict. However, significant effects were not evident with respect to emotional or instrumental support from family members, mental health, or homelessness.

Keywords

drug court, socioeconomic, family, multi-site

Introduction

This article examines the impact of adult drug courts on a series of understudied outcomes, including socioeconomic well-being, family relationships, mental health, and homelessness. Adult drug courts have emerged as among the most prolific criminal justice interventions of the past two decades, with more than 1,300 such programs now in operation nationwide (Huddleston & Marlowe, 2011). These courts provide substance-abusing defendants with an alternative to traditional case processing, usually involving court-ordered treatment for a year or longer. Drug courts also engage in close supervision of the treatment process through frequent drug testing, judicial-status hearings, and required meetings with court-affiliated case managers or probation officers. Applying classic behavior modification techniques, the drug court judge can administer interim sanctions or incentives, respectively, to penalize noncompliance or to encourage those who are doing well. In some jurisdictions, the drug court also provides social services related to employment, education, mental health, or other co-occurring problems, either on-site at the

¹Bridgewater State University, Bridgewater, MA, USA

²Center for Court Innovation, New York, NY, USA

Corresponding Author:

Michael Rempel, Center for Court Innovation, 520 8th Avenue, 18th Floor, New York, NY 10018, USA
Email: rempelem@courtinnovation.org

courthouse or through community-based referrals. Program graduates commonly have the charges against them dismissed or reduced, while those who fail receive a jail or prison sentence. In many programs, participants are told the precise length of the sentence that will be imposed should they fail, thereby incentivizing them to remain compliant.

The impact of adult drug courts in reducing official rearrests and reconvictions has been well documented (Government Accountability Office, 2005, 2011; Mitchell, Wilson, Eggers, & MacKenzie, 2012; Roman & DeStefano, 2004; Shaffer, 2006, 2011; Wilson, Mitchell, & MacKenzie, 2006). Based on the results of three recent meta-analyses covering evaluations of more than 90 sites, the average recidivism reduction appears to fall between 8 and 13 percentage points (Gutierrez & Bourgon, 2009; Mitchell et al., 2012; Shaffer, 2011). Although most studies tracked defendants over a period of 2 years or less, several evaluations that extended the follow-up period to 3 years or longer reported similarly positive results (Finigan, Carey, & Cox, 2007; Goldkamp, White, & Robinson, 2001; Gottfredson, Kearley, Najaka, & Rocha, 2006; Rempel et al., 2003). These recidivism reductions are presumed to stem from having addressed the underlying substance dependence or abuse problem. Indeed, although only a handful of studies have directly examined effects on future drug use, their results have also generally been positive (Brewster, 2001; Harrell, Roman, & Sack, 2001; Gottfredson, Kearley, Najaka, & Rocha, 2005), with the notable exception of an early 1990s evaluation of a pilot drug court program in Arizona (Deschenes, Turner, & Greenwood, 1995).

More than 20 years after the first drug court opened in 1989, however, our knowledge is virtually nonexistent as to whether these specialized courts improve other psychosocial or health outcomes, either during or after program participation. This represents an unfortunate research limitation, especially considering that individuals who enter the criminal justice system due to a drug dependency are often experiencing other personal difficulties related to their addiction. These can include problems in maintaining stable employment, school attendance, and housing; in fostering healthy relationships; and in maintaining emotional health (e.g., Wolf & Colyer, 2001). Even allowing that drug courts were primarily designed to target substance abuse and related criminal behaviors (Office of Justice Programs, 1997), their potential ancillary benefits in alleviating these other problems at least merit investigation.

The present study seeks to broaden our knowledge of drug court impacts by comparing previously understudied outcomes in 23 drug courts and 6 comparison sites. Outcomes are compared at both 6-month and 18-month follow-up time frames. By incorporating an unprecedented number of drug court sites (23), spanning seven state court systems and a diverse range of geographic areas (urban, suburban, and rural), we seek to produce findings with particularly strong external validity, relative to the extremely limited number of single-site studies that preexist on the current questions of interest.

Research Objectives and Rationale

This study seeks to test the impact of drug court participation on outcomes in four domains: (a) socioeconomic well-being (employment, education, income, and perceived financial assistance needs), (b) family relationships, (c) mental health, and (d) homelessness. Second, this study seeks to explore which, if any, offender characteristics *other than* drug court participation, such as offender demographics, prior drug use or mental health status at baseline, and prior criminality, are associated with greater or lesser psychosocial problems at follow-up.

The Linkage Between Drug Abuse and Other Psychosocial Problems

Although all of the problems that are presently under investigation are known to be prevalent among those who abuse drugs, and many drug courts intentionally seek to address them through ancillary services, the evidence to date is unclear as to whether the drug court model is effective.

The evidence is particularly strong regarding the relationship between drug abuse and socioeconomic problems. For instance, an estimated 15% to 30% of individuals who abuse drugs are employed, compared with 72% to 77% of those who are not abusing drugs (see Young, 2000). Even among those who are employed, additional findings indicate that the physiological and psychological effects of an addiction can lead to a reduction in work performance (Wolkstein & Spiller, 1998). Although unemployment may conceivably act as either a cause or effect of substance abuse, DeSimone (2002) sought to disentangle the relationship and confirmed that both cocaine and marijuana use independently *cause* a reduction in the likelihood of future employment. Given this evidence, it seems logical to hypothesize that an intervention that reduces the drug-abuse problem may, in turn, increase an individual's employment prospects. Indeed, several previous studies, not specifically of individuals participating in drug court but of those in enrolled in substance-abuse treatment, found that treatment, in general, leads to improved employment rates and/or higher average earnings (e.g., Wickizer, Campbell, Krupski, & Stark, 2000; Young, 2000; Young & Gardner, 1997).

Previous studies have also detected a link between substance abuse and family dysfunction (e.g., Nurco & Lerner, 1996), between substance abuse and co-occurring mental health disorders (e.g., Conway, Compton, Stinson, & Grant, 2006; Kessler, 2004), between substance abuse and co-occurring disorders among criminal justice populations *in particular* (James & Glaze, 2006), and between substance abuse and homelessness (e.g., Didenko & Pankratz, 2007; U.S. Conference of Mayors, 2007). However, despite the presence of these relationships, the evidence is less clear on the extent to which substance abuse independently exacerbates each of these other problems. Nurco and Lerner (1996), for example, document the opposite causal relationship, citing family dysfunction as a precipitating risk factor for substance abuse in the first place. Nonetheless, it at least seems plausible enough to subject to an empirical examination whether an intervention that reduces drug use may thereby assist formerly addicted individuals in reconnecting with family members. With further regard to the co-occurring mood disorders, clinical depression in particular (e.g., see Conway et al., 2006), it is well known that the physiological effects of drugs such as marijuana and alcohol, both of which slow brain functioning, may directly induce depression; regarding another prevalent drug of choice among drug court participants, cocaine most immediately acts as a stimulant, but depression can still result once the initial high subsides. Moreover, in a national survey of 379 adult drug courts, 79% responded that they take proactive steps to integrate both substance abuse and mental health treatment for participants with co-occurring disorders, suggesting that drug courts commonly engage in at least some degree of an explicit effort to address co-occurring mental health problems (Zweig, Rossman, & Roman, 2011). It is therefore unfortunate that we presently lack much in the way of evidence concerning the success of this effort.

Prior Drug Court Research

Although the preceding discussion suggests that it is worth examining whether drug courts precipitate improvements in areas beyond crime and drug use, among the tiny number of relevant prior studies, the results are mixed. Over a 3-year tracking period, an evaluation of the Baltimore City Drug Treatment Court found that there were no significant differences in employment rates, mental health, and in the reported quality of family and other social relationships between drug court and comparison offenders (Gottfredson et al., 2005). This study had the benefit of a strong experimental design. In addition, the program itself appeared to include all of the treatment and supervision elements of a classic adult drug court (Gottfredson, Kearley, & Najaka, 2003). Nonetheless, the results only derive from a single site and are based on a relatively small sample of just 93 drug court and 64 comparison cases.

Results from an evaluation of the Brooklyn Treatment Court were somewhat more promising. The study found that after 1 year, drug court participants appeared to have fewer instances of

interpersonal, psychiatric, and medical problems than the comparison group (Harrell et al., 2001). Although the raw differences on these measures were large, the findings were still not statistically significant. Similar to the Baltimore study, sample size was exceptionally low, including 110 drug court and only 26 comparison cases. In addition, potentially compromising the validity of the raw estimates, survey attrition from baseline was extensive, with only 39% of the original drug court and 23% of the comparison sample retained for follow-up interviews. Those who were retained from each sample may have quite different baseline characteristics and average outcomes than those who were not retained.

Research Design and Methodology

The data for this research comes from the National Institute of Justice's Multisite Adult Drug Court Evaluation (MADCE). The research design included the prospective recruitment of offenders from contemporaneous drug court and comparison sites; the implementation of three waves of offender interviews, respectively, at baseline, 6 months, and 18 months after enrollment; and a process evaluation to document key policies at each site. The design also included the collection of official recidivism data and the administration of an oral fluids drug test at the 18-month mark; but this article is exclusively concerned with a series of understudied psychosocial outcomes drawn from the interview data.

Sampling Plan

The drug court sample included 1,156 offenders from 23 drug court sites located in the following states: Washington (6 sites), Illinois (2 sites), New York (8 sites), Pennsylvania (2 sites), Georgia (2 sites), Florida (2 sites), and South Carolina (1 site). By intention, the 23 selected drug courts represented a wide range of community contexts. Unlike most prior drug court evaluations that focused on large urban areas for reasons of sample size, our multisite framework enabled us to select most of the sites (16) from small city, semirural, and rural jurisdictions and then to pool our data at the analysis stage to generate sufficient statistical power.

The comparison sample included 625 offenders from six sites that lacked adult drug courts or had a narrowly targeted program: one in Washington, one in Illinois, two in Florida, and two in North Carolina. (The one South Carolina drug court, located almost at the North Carolina border, was defined as part of the same geographic cluster as the two North Carolina comparison sites.) Rather than a strict no-treatment comparison group, our six comparison sites included a realistic mix of treatment and other counterfactual conditions, similar to what might in fact be found across the country. Thus, whereas the North Carolina comparison sites involved standard probation, the four others all involved participation in some variant of a court-mandated treatment initiative (two Treatment Alternatives for Safe Communities [TASC] programs and two short-term drug-diversion programs) that lacked the intensive judicial supervision components of a drug court. Moreover, more than one third (36%) of the comparison group reported receiving at least some substance-abuse treatment in the first 6 months after baseline, and 71% reported at least some contact with a supervision officer (either a case manager or probation officer). However, regarding judicial oversight policies that are unique to the drug court model, the two samples differed more markedly. As of the 6-month interview, the drug court sample was far more likely to attend judicial-status hearings (93% vs. 14%), to receive judicial praise during those hearings (76% vs. 10%), and to receive interim sanctions for noncompliance (50% vs. 15%).

The 1,781 total baseline interviews were conducted over a 16-month period extending from March 2005 through June 2006. To approximate a "true baseline" moment as closely as possible, once an offender enrolled in the drug court or the applicable comparison condition, we required field interviewers to complete the interview within 8 weeks. In practice, baseline interviews were

completed an average of 1 month after true baseline (mean = 30.6 days, median = 30 days). Due largely to the 8-week maximum window during which baseline interview could be conducted, 28% of technically eligible offenders were not interviewed at baseline. The most common problem was a delay in notification to the research team by staff from the applicable site that an eligible offender had been newly enrolled. Of those who were actually contacted for a baseline interview, only 6% of potential drug court and 11% of potential comparison offenders refused to participate.

Among those interviewed at baseline, follow-up interviews were successfully conducted with 1,533 offenders at 6 months (87% of drug court and 84% of comparison), 1,474 offenders at 18 months (82% of drug court and 84% of comparison), and 1,349 offenders at both follow-up periods (an identical 76% of both samples). These retention rates are remarkably high for what might fairly be described as a difficult-to-reach population, and the retention rates did not significantly vary by sample status.

Hierarchical Modeling Framework

Impact analyses were conducted using standard hierarchical modeling techniques (see Raudenbush & Bryk, 2002). Such techniques are relevant in the present study, because offender outcomes are not independent of each other. Rather, offenders are each nested within one of 29 distinct sites. Of further importance, the same sites do not house both drug court and comparison offenders, meaning that the analysis is really testing whether drug court sites outperform comparison sites, not whether individual drug court offenders outperform comparison offenders from inside the same jurisdictional contexts. In effect, drug court status itself is a site-level (or “Level 2”), not an individual-level, variable in this study and was modeled as such using Hierarchical Linear Models (HLM) 6.04 software.

To confirm the appropriateness of our envisioned approach, we conducted statistical tests to determine the proportion of the variance in key outcomes that lies between individual offenders (“within-site” variance) and the proportion that lies between, and thus systematically differentiates, the sites (“between-site” variance). To do this, one executes an unconditional or null model. Such a model includes an outcome measure without any predictors. The critical question is whether between-site variance in the outcome is statistically significant: that is, do the *sites* inherently vary in their outcomes? In proceeding, we ran unconditional models on several key measures. As shown in Table 1, the sites systematically varied on each outcome ($p < .001$ in all models). In results not shown, we reran the same unconditional models separately for drug court and comparison sites to ensure that the observed site-level differences were not simply a function of outcomes in the 23 drug courts clustering together and outcomes in the six comparison sites clustering together. The between-site variance continued to be significant in all such analyses. We concluded that modeling outcomes in HLM was necessary.

Selection and Attrition Adjustments

We also sought to adjust for baseline differences between the *individual-level* characteristics of those offenders who came from the drug court and comparison sites, respectively (see the technical grant report for an extensive discussion of these adjustments; Rempel & Farole, 2011). In brief, we examined 61 baseline characteristics and found that the drug court and comparison samples significantly differed on 37 characteristics, spanning prior drug-use history, criminal history, socioeconomic status, and basic demographics, including age, sex, race, and educational attainment. In general, drug court offenders were significantly younger, whiter, higher in socioeconomic status, more drug involved but less criminally involved than the comparison group.

Table 1. Effect of Super Weighting in Adjusting for Baseline Sample Differences

	Unweighted		Weighted	
	Drug court	Comparison group	Drug court	Comparison group
Number of cases	951	523	951	523
Demographics				
Age	33.19***	35.14	33.69	34.28
Male	68%	72%	70%	69%
Race/ethnicity				
White	59%	51%	55%	54%
Black/African American	28%	41%	32%	25%
Hispanic/Latino	6%	4%	6%	5%
Other (including multiracial)	7%	4%	7%	6%
HS degree/GED or higher	62%***	54%	59%	60%
Base 10 logarithm of annual income	4.57***	\$4.29	\$4.46	\$4.46
Social ties				
Primary care responsibility for children less than 18	19%	16%	18%	17%
Homeless: prior 6 months	12%	13%	12%	12%
Currently employed	38%**	33%	37%	37%
Currently in school	8%	9%	8%	9%
Weeks worked: last 6 months	9.07**	7.71	8.73	8.62
Blood relatives involved with crime/ drugs ^a	1.86**	1.64	1.77	1.67
Drug use ^b				
Years, drug use (six drugs, excluding alcohol and marijuana)	13.5*	14.58	13.80	13.66
Drug use in the 6 months prior to baseline				
Any use (six drugs, excluding alcohol and marijuana)	61%***	52%	58%	56%
Days of use per month (eight drugs)	13.72***	11.69	13.16	12.77
Any use of heavy alcohol ^c	40%	40%	41%	38%
Any use of marijuana	45%**	39%	45%	42%
Any use of cocaine	44%***	36%	42%	39%
Any use of heroin	11%	13%	11%	12%
Any use of amphetamines	15%**	11%	13%	14%
Any use of hallucinogens/designer drugs	9%***	5%	7%	7%
Any use of prescription drugs: illegal use	16%	14%	16%	14%
Primary drug of choice				
Alcohol	12%	16%	13%	14%
Marijuana/hashish	22%	19%	22%	21%
Cocaine (powder)	12%	9%	11%	10%
Crack cocaine	26%	27%	27%	25%
Heroin	3%	8%	5%	5%
Amphetamines (including methamphetamine)	12%	6%	9%	10%
Other or claimed not using drugs	12%	15%	13%	15%

(continued)

Table 1. (continued)

	Unweighted		Weighted	
	Drug court	Comparison group	Drug court	Comparison group
Addiction severity index ^d	9.52****	8.48	9.23	8.95
Previous treatment in 6 months prior to baseline				
Any drug/alcohol treatment	37%****	20%	29%	29%
Days of treatment per month	2.67****	1.18	2.02	2.15
Criminal history				
Any prior arrests	87%***	93%	88%	91%
Base 10 logarithm of number of prior arrests	1.63****	1.77	1.66	1.69
Any prior convictions	69%****	78%	72%	72%
Any prior violent convictions	12%****	20%	15%	14%
Criminal activity in 6 months prior to baseline				
Mean number of criminal acts	1.96***	1.84	22.38	21.70
Drug activity	70%*	65%	69%	67%
Drove while intoxicated	35%	32%	35%	33%
Mental and physical health				
Overall mental health (5-point scale, poor to excellent)	3.45	3.42	3.44	3.43
Percentage depressed (10-item inventory)	39%	37%	39%	37%
Antisocial personality disorder (27-item inventory)	43%	42%	43%	43%
Narcissistic personality disorder (10-item inventory)	48%	50%	48%	50%
Victimized by any physical abuse in past year	29%**	35%	30%	32%
Any chronic medical problems (currently)	26%	27%	27%	25%
Control variables—for 6 months prior to baseline				
Total days incarcerated	20.97****	38.33	27.76	29.56
Total days incarcerated or in residential treatment	25.92****	41.25	31.71	33.10
Exact number of prebaseline months surveyed	5*	5.06	5.04	5.04

Note: This table compares the characteristics of drug court and comparison group offenders who were interviewed at the 18-month follow-up. Select variables had small numbers of missing cases, noted in parentheses: age (1), years used drugs (4), years used drugs other than marijuana or alcohol (1), any physical health problems (4), any prior arrest (14), and number of prior arrests (44). In addition, 516 cases were missing on any abuse and any physical abuse, as a result of the addition of these measures after survey implementation was already underway.

^aThis score represents the sum of 10 dichotomous measures designed to ascertain the involvement of blood relatives either with the criminal justice system or with drugs, alcohol, or drug treatment. The score ranges from 0 to 10.

^bThe drug-use measures concerning "eight" drugs include marijuana, alcohol, cocaine, heroin, amphetamines, hallucinogens, prescription drugs (illegal use), and methadone (illegal use).

^cHeavy alcohol use is defined as four or more drinks per day for women and five or more for men.

^dThe addiction severity index is a summary scale consisting of the answers to 20 questions. Two, however, are only asked if the respondent was employed in the prior 6 months. As a vast majority of our samples were unemployed, respondents were scored out of 18.

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

Consequently, we implemented a standard propensity score adjustment (see Luellen, Shadish, & Clark, 2005; Rosenbaum & Rubin, 1983; Rubin, 1973). Propensity scores reflect the summary effect of multiple baseline characteristics in leading some individuals to be more statistically likely to fall into a treatment sample (i.e., drug court) than a comparison sample. In producing propensity scores, we were at a particular advantage in this study, because we possessed an exceptionally rich baseline data set with numerous observable characteristics that could be controlled (i.e., entered into the model from which propensity scores would be derived). For modeling purposes, we decided to include all baseline characteristics whose bivariate comparison revealed a p value of .50 or less. Such a liberal variable inclusion criterion is generally recommended for enabling the model to account and adjust for even small differences between treatment and comparison samples (see Luellen et al., 2005; Rosenbaum, 2002). Overall, our criterion led us to include 47 of the 61 baseline parameters whose bivariate differences were examined. Table 2 lists these parameters. In addition, to illustrate the effect of our adjustment strategy (whose final steps are summarized in the following paragraph), Table 2 compares the drug court and comparison samples both before and after adjustment. As clearly indicated by the results, our approach substantially reduced sample differences; no significant differences were detected after adjustment.

The final step in our adjustment strategy involved comparing the baseline characteristics of those offenders who were retained as opposed to attrited at each follow-up period. In general, attrition bias did not pose a substantial threat to validity in this study, given our unusually high interview retention rates, as noted previously. Nonetheless, we found that the retention rates varied across a small number of baseline characteristics and, more systematically, varied by state, with significantly higher follow-up retention rates in New York, North Carolina, and Washington, and lower retention rates in Florida, Illinois, and Pennsylvania. Accordingly, analogous to propensity scores, we created "retention scores" for each offender, based on the summary effect of multiple characteristics, including state location, in leading some offenders to be more statistically likely than others to be retained for follow-up interviews. (Separate retention scores were computed for the 6-month and 18-month follow-up time frames.)

Our final adjustment involved multiplying each offender's propensity score and retention score and, based on the product, creating inverse probability weights. (Computational details can be found in Rempel & Farole, 2011; see also Harrell, Newmark, Visher, & Castro, 2007.) We created separate weights for those who were interviewed at 6 and 18 months, respectively. However, based on further sensitivity analyses, we concluded that adjusting for either of these two weights yielded effectively identical impact findings. Therefore, we universally used the weights that were initially developed for offenders who were surveyed at 18 months, the final follow-up wave.

Outcome Measures

Four categories of outcome measures were included. In each case, the equivalent measures were analyzed at both the 6-month and 18-month follow-up periods.

Socioeconomic well-being. Measures included current employment and school enrollment status, weeks worked since last interview, and current annual income. In addition to overall annual income, separate measures were constructed totaling income that came from employment, friends and family, disability or other government sources, illegal activities, and other sources. A final series of measures included survey answers concerning whether the offenders perceived that they wanted or needed the following types of services: employment services, educational services (e.g., related to GED classes or adult education), financial assistance, or public financial assistance (e.g., related to public disability or welfare).

Table 2. Unconditional HLM Models for Key 18-Month Outcomes ($n = 1,474$)

Employed or in school				
Fixed effects	Coefficient	SE	df	p value
Intercept, G0	0.60	0.11	28	0.000
Random effects				
Level 2, U0	0.26	0.51	28	0.000
Classified as depressed				
Fixed effects	Coefficient	SE	df	p value
Intercept, G0	-0.94	0.08	28	0.000
Random effects				
Level 2, U0	0.08	0.28	28	0.005
Family Conflict Index score				
Fixed effects	Coefficient	SE	df	p value
Intercept, G0	2.28	0.04	28	0.000
Random effects				
Level 2, U0	0.04	0.19	28	0.000
Level 1, R	0.78	0.88		
Intraclass correlation coefficient	0.05			
Family Emotional Support Index score				
Fixed effects	Coefficient	SE	df	p value
Intercept, G0	4.23	0.04	28	0.000
Random effects				
Level 2, U0	0.02	0.15	28	0.000
Level 1, R	0.51	0.71		
Intraclass correlation coefficient	0.05			
Family Instrumental Support Index score				
Fixed effects	Coefficient	SE	df	p value
Intercept, G0	4.02	0.04	28	0.000
Random effects				
Level 2, U0	0.04	0.19	28	0.000
Level 1, R	0.74	0.86		
Intraclass correlation coefficient	0.05			
Homeless at any time in the prior year				
Fixed effects	Coefficient	SE	df	p value
Intercept, G0	3.22	0.19	28	0.000
Random effects				
Level 2, U0	0.80	0.89	28	0.000

Note: Outcomes were as of the 18-month interview. Models used an Ordinary Least Squares specification, except for dichotomous measures (employed or in school, depressed, and homeless), which used logistic regression (Bernoulli) instead. Data were unweighted.

Family relationships. The measures of family relationships covered family conflict, family emotional support, and family instrumental support. Specifically, family conflict was measured based on the mean response to three statements, each scored on a 5-point Likert-type scale, regarding the degree of family conflict the offender experienced since the previous interview—that is, over the previous 6 months on the 6-month interview and over the previous year on the 18-month interview (Cronbach's $\alpha = .700$ on the 18-month interview). Family emotional support included the mean response to 10 statements, each on a 5-point scale, regarding the strength of the offender's relationships with and support from family members since the previous interview

(Cronbach's $\alpha = .899$, 18-month interview). Family instrumental support included the mean response to five statements, each on a 5-point scale, regarding expectations since the previous interview that family members would provide tangible assistance if needed, such as a job, financial support, or a place to live (Cronbach's $\alpha = .898$, 18-month interview). (See the appendix for all specific interview items.)

Mental health. There were two mental health items. The first was a single question that listed five possible response options, "In general, would you say your current emotional or mental health is excellent, very good, good, fair, or poor?" The second item was the result of a 10-question depression inventory, designed to tap feelings and behaviors over the previous week and, after scoring, to yield a dichotomous outcome for whether the offender was depressed (see the appendix).

Homelessness and living situation. One question tapped whether the offender had been homeless since the last interview; and a second concerned whether, over the same period, the offender had wanted or needed "help with finding or keeping a place to live."

Analytic Plan

We performed a straightforward series of outcome analyses at 6 and 18 months, using hierarchical modeling techniques and weighted data, as described above. Given our finding of statistically significant between-site variance in all of our outcomes of interest (see Table 1), all analyses allowed the intercepts (outcomes) to vary by site. The HLM 6.04 statistical package enables running simple regressions (t tests), logistical regression models, and Poisson models. We selected the most appropriate model for each outcome using t tests for approximately normal distributions (the income measures and all questions involving 5-point Likert-type scales), logistic regression for dichotomous measures (employed or in school, depressed or not, and whether offenders believed they need each of several specified services), and Poisson regression for count distributions that are right-skewed (number of weeks worked). We then used the regression coefficients to generate adjusted means, providing simple "bottom-line" results for drug court and comparison sites and, in supplemental analyses, for those who graduated and failed the drug court program, respectively. Hence, although much of the data presented below appear to include simple percentages or averages, all of those results were in fact adjusted, after modeling the outcomes in HLM with weighted data and after using the most appropriate regression specification.

The next step in the analysis was to examine which additional baseline characteristics influenced our outcomes of interest. For this purpose, we selected three core 18-month measures: (a) whether the offender was employed, (b) results on the three-item family conflict index, and (c) whether the offender was classified as depressed based on the 10-item inventory. As independent predictors, besides drug court participation, we included basic demographics (age, sex, race/ethnicity), offender "stake in conformity" (e.g., baseline employment and marital status), frequency of drug use in the 6 months before baseline, primary drug of choice, prior criminality in the 6 months before baseline, and mental health status (screening at baseline for depression, antisocial personality, or narcissistic personality). We contemplated modeling these predictors as random effects, meaning that we would allow for the possibility that the nature of their impact might significantly vary from one site to another. However, in test random-effects models, we found that the impact of only 1 of 15 baseline parameters significantly varied by site when predicting employment, 1 of 15 parameters significantly varied by site when predicting depression, and none significantly varied by site when predicting family conflict. As a mere two significant random effects across three regression models (with 45 total parameter estimates) might have arisen due to chance, we decided that our final models should *not* assume that effects vary by site.

Our multivariate models also sought to test the direct linkage between reductions in drug use and reductions in other psychosocial problems. To do this, we included as a predictor variable the number of days of drug use per month in the year prior to 18-month follow-up interview. Our hypothesis was that less drug use at follow-up would be associated with other positive outcomes as well. To test the effects of specific services, we also included as predictors the number of days of substance-abuse treatment received in the year prior to the 18-month survey and whether the offender received ancillary services related to (a) employment and (b) life and interpersonal skills. Our hypotheses included such logical relationships as that receiving more employment or education services would increase the likelihood that the offender had become employed at follow-up, and that receiving more services related to life or interpersonal skills would reduce the likelihood of family conflict. With respect to these variables, we *did* model them as random effects; that is, assuming that the nature of their impact on outcomes might well vary by site. As the nature of the local drug problem and of local service content (substance-abuse treatment programs, employment services, or life-skills services) could be expected to vary from site to site, it seemed particularly logical to allow that the *impact* of these in-program variables on outcomes might also vary. Indeed, our results (see Table 4 below) detected several significant random effects among these in-program service utilization variables.

Sample Characteristics: Psychosocial Problems at Baseline

Our extensive baseline data set enabled learning a great deal about the multiple problems that offenders faced when they came into the drug court. The results previously presented in Table 2 report on a wide array of offender baseline characteristics. Focusing on the weighted drug court sample (third column from the left in Table 2), drug court participants averaged almost 34 years of age, 70% were male, and slightly more than half were White (55%), one third were Black/African American (32%), and 13% from other racial or ethnic groups. Participants evidenced substantial social dislocations, as almost half (47%) had been homeless at some point and only slightly more than one third (37%) were employed.

Concerning baseline drug use, close to half of the sample reported using marijuana (45%) and cocaine (42%) in the previous 6 months, with smaller percentages reporting the use of heroin, amphetamines, and other drugs. (Had more than 6 of the 23 sites come from Washington State or elsewhere on the west coast, we would have probably seen greater reported use of amphetamines.) The data also points to substantial alcohol use, as 41% of the sample reported "heavy" use in the previous 6 months, defined as five or more drinks per day for men and four or more drinks per day for women.

Prior criminal behavior was extensive, with almost three quarters (72%) reporting a prior conviction and, in the previous 6 months, the drug court sample reporting an average of 22.4 discrete criminal acts, whether or not they led to an arrest or conviction.

Finally, the drug court sample showed signs of extensive co-occurring mental health problems. As shown in Table 2, based on multi-item screening inventories, 39% or more of the drug court sample screened positively for depression, antisocial personality, and narcissistic personality, and 30% reported that they had been physically abused in the past year.

The Impact of Drug Court Participation

Table 3 compares the drug court and comparison samples on all outcomes of interest. Results are included for both the 6-month interview, at which point nearly all (88%) of the sampled drug court participants were still actively enrolled in the program, and for the 18-month interview, capturing a postprogram period for most participants (72% had exited by that time, with an

Table 3. The Impact of Adult Drug Courts on Psychosocial Outcomes

Follow-up time frame	Six months		Eighteen months	
	Drug court	Comparison group	Drug court	Comparison group
Sample				
Number of cases	1,009	524	951	523
Socioeconomic status				
Currently in school or employed	56%	55%	66%	60%
Currently in school	16%***	8%	11%	10%
Currently employed	52%	48%	61%	55%
Weeks worked since prior interview	11.0	10.0	30.3	26.0
Annual income	\$12,933	\$11,495	\$17,172	\$14,304
From employment	\$8,877	\$8,132	\$12,746	\$10,532
From friends and family	\$1,912	\$1,229	\$1,712	\$2,159
From disability or other government sources	\$1,498*	\$982	\$1,394*	\$945
From illegal activities	\$300	\$634	\$320	\$320
From other sources	\$399	\$467	\$945*	\$462
Services wanted or needed				
Employment services ("help finding a job")	55%	66%	27%*	42%
Educational services (e.g., GED or adult education)	47%	56%	25%**	36%
Financial assistance (e.g., loans or housing deposits)	45%	56%	28%**	44%
Public financial assistance (e.g., disability or welfare)	51%	56%	31%	42%
Family support and conflict				
Family conflict index (mean of 3 items)	2.23*	2.43	2.24**	2.44
Family emotional support (mean of 10 items)	4.32*	4.15	4.27*	4.12
Family instrumental support (mean of 5 items)	4.11	3.98	4.04	3.96
Mental and physical health				
Depressed (10 or more on 30-item instrument)	26%	28%	27%	29%
Current emotional or mental health (5-point scale)	3.69**	3.48	3.63	3.66
Percent "very good" or "excellent" (4 or 5 on scale)	51%*	58%	56%	58%
Homelessness and living situation				
Any homelessness since prior interview	4%	3%	4%	4%
Wanted help in finding or keeping a place to live	30%	35%	27%	35%

Note. Cases were weighted and analyses were performed in HLM 6.04.

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

average postprogram duration of 6.1 months for the entire drug court sample and 8.5 months for those who had exited).

Socioeconomic Outcomes

The drug court sample was better off than the comparison sample on 24 of 28 individual socioeconomic measures examined, including 12 of 14 measures as of the final 18-month interview. However, the raw-effect sizes were consistently modest, and most differences were not statistically significant. We found that drug court participants were significantly more likely than the comparison group to be enrolled in school at 6 months (16% vs. 8%) and somewhat more likely to be employed at 18 months (61% vs. 55%), although the latter difference was not significant. We also found that drug court participants averaged a higher annual income, both overall and across several distinct sources of income; but again, these differences were modest and not

Table 4. Predictors of Select Psychosocial Outcomes at 18 Months

Fixed effects	Employed		Family conflict (over prior year)		Classified as depressed	
	Coefficient	SE	Coefficient	SE	Coefficient	SE
Intercept	-0.363	0.363	2.318****	0.152	-1.852****	0.358
Drug court participation						
Drug court sample (vs. comparison) ^a	.221	.127	-.162**	.066	-.023	.195
Demographics						
Age	-.003	.006	-.008****	.002	.011*	.006
Male	.370****	.103	.057	.051	-.380**	.167
Race/ethnicity ^b						
Black	-.216*	.126	-.115**	.058	-.108	.137
Hispanic	.632****	.194	.110	.106	-.165	.240
High school degree or GED	.453****	.131	.036	.059	-.265*	.152
Social ties						
Employed at baseline	1.308****	.154	-.188****	.046	-.355**	.164
Married	-.173	.159	.042	.059	-.123	.149
Blood relatives involved with crime or drugs ^c	.010	.036	.008	.013	.037	.025
Drug use and treatment history						
Primary drug of choice ^d						
Marijuana	-.148	.252	-.052	.070	.187	.184
Cocaine	-.213*	.111	.071	.054	-.157	.140
Average days use/month (6 months prebaseline)	.005	.006	-.001	.002	-.002	.006
Criminal history						
Number of criminal acts (6 months prebaseline)	.005**	.002	-.003****	.001	-.004	.004
Mental health						
Depression	-.339****	.102	.153****	.046	1.101****	.142
Antisocial personality disorder ^e	-.111	.096	.098**	.045	.060	.154
Narcissistic personality disorder ^f	.098	.117	.158****	.048	.203*	.112
18-month drug use and treatment/services						
Average days of drug use/month (prior year)	-.029**	.012	.030****	.006	.154****	.011
Days of substance-abuse treatment (prior year)	-.001	.001	.001	.000	.001**	.001
Employment services (prior year) ^g	.047	.224	.034	.045	-.130	.148
Life and interpersonal skills services (prior year) ^h	-.257*	.129	.320****	.058	.716****	.121
Random effects	Variance	SD	Variance	SD	Variance	SD
Intercept	.104	.323	.050****	.223	.166	.408
18-month drug use and treatment/services						
Average days of drug use/month (prior year)	.003****	.054	.000****	.015	.001	.034

(continued)

Table 4. (continued)

Random effects	Variance	SD	Variance	SD	Variance	SD
	Employed		Family conflict (over prior year)		Classified as depressed	
Fixed effects	Coefficient	SE	Coefficient	SE	Coefficient	SE
Days of substance-abuse treatment (prior year)	.000	.002	.000	.001	.000	.002
Employment services (prior year) ^g	1.020***	1.010	.018	.132	.097	.311
Life and interpersonal skills services (prior year) ^h	.339**	.582	.029*	.171	.110	.332
Number of cases	1,472		1,466		1,472	

Note: Computations are in HLM 6.04 on weighted data. The dependent variables are all from the 18-month interview: whether the offender is employed (Y/N), score on the family conflict index, and whether the offender is depressed (Y/N, classified on our 10-item inventory). Logistic regressions are conducted on dichotomous outcomes (employed? depressed?), and an OLS regression is conducted on the family conflict score. Six cases were missing data for the family conflict score, resulting in a slightly lower sample size than for the other models.

^aDrug court status is treated as a Level 2 variable ($df = 27$).

^bWhite (56% of the total sample) and other racial groups (6% of the total sample) comprise the reference category.

^cThe blood relatives measure represents the sum of 10 dichotomous measures designed to ascertain the involvement of blood relatives either with the criminal justice system or with drugs, alcohol, or drug treatment. The score ranges from 0 to 10.

^dThe reference category includes primary drugs of alcohol, heroin, amphetamines, prescription drugs, miscellaneous other drugs, and those who did not claim to have a primary drug. All of these categories combined totaled 42% of the sample.

^eClassification with antisocial personality is based on a 27-item inventory of yes/no questions, derived from the structured clinical interview for the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev; *DSM-IV-TR*; American Psychiatric Association [APA], 2000), with the official diagnostic criteria framed in the format of structured interview questions.

^fClassification with antisocial personality is based on a 10-item inventory of yes/no questions, derived from the structured clinical interview for the *DSM-IV-TR*, with the official diagnostic criteria framed in the format of structured interview questions (see American Psychiatric Association, 2000).

^gThe measure indicates whether the offender reported receiving any employment services in the 30 days prior to the 18-month interview.

^hThe measure indicates whether the offender reported receiving any services of life skills, anger management, or batterer program; or reported that a family/household member had received help understanding the offender's substance abuse problems and recovery process.

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

significant. Finally, at 18 months, drug court participants were more than 10 percentage points less likely than the comparison group to report a need for each one of several relevant services, including employment, educational, financial assistance, and public financial assistance services, with some of these effects reaching statistical significance. These latter results suggest that the drug court sample was more likely to have had its socioeconomic service needs met while participating in the drug court program.

Family Relationships

The results pointed to several differences in family conflict and emotional support. Focusing on the year prior to the 18-month interview, drug court participants reported significantly less family conflict than the comparison group on average. However, significant differences at the .05 level were not apparent on other measures in this domain, although drug court participants

appeared to rate their family's emotional support slightly higher than did the comparison group (marginal significance, $p < .10$).

Mental and Physical Health

Drug court and comparison offenders both reported that their mental health fell between "good" and "very good," with drug court offenders reporting a slightly yet significantly higher average rating at 6 months ($p < .05$), but with a significant difference not persisting at 18 months. Virtually identical percentages of offenders were screened as suffering from depression at both follow-up waves.

Homelessness and Living Situation

We found no significant differences in the rates of homelessness and in the average level of interest in receiving housing services between the drug court and comparison samples. These results remained stable between the 6-month and 18-month marks.

The Impact of Baseline and In-Program Offender Characteristics

Multivariate analyses were performed to determine the effects of offender baseline characteristics on three key 18-month outcomes: whether the offender was employed, the level of reported family conflict in the previous year (based on our 3-item inventory), and depression (based on our 10-item inventory). We also tested the impact of several "in-program" measures tapping the offender's ongoing use of drugs and receipt of treatment and other social services on these outcomes.

The Impact of Offender Baseline Characteristics

As shown in Table 4, small numbers of baseline characteristics were associated with each outcome measure. Among the more salient findings, men were generally better off than women, as men were significantly more likely to be employed and less likely to be classified with depression. Offenders with a high school degree or GED were also better off: again, significantly more likely to be employed and less likely to be classified with depression. Employment itself appeared to be a protective factor, as those who were employed at baseline were significantly more likely to be employed, were less likely to be depressed, and reported less family conflict at follow-up. Conversely, suffering from depression appeared to be a risk factor for other problems. Those who were classified as depressed at baseline were more likely to be depressed at follow-up, less likely to be employed, and reported more family conflict. A baseline classification with two other mental health disorders, antisocial personality and narcissism, also independently predicted more family conflict.

The Impact of Ongoing Drug Use, Treatment, and Other Services

The results for the parameter estimates displayed toward the bottom of Table 4 appeared to confirm the hypothesized linkage between an offender's drug problems and additional problems in the offender's life. Specifically, across offenders in both the drug court and comparison samples, averaging more days of drug use over the year prior to the 18-month interview significantly predicted a lower likelihood of employment at 18 months, a higher prevalence of family conflict, and a higher probability that the offender was experiencing depression.

However, concerning the potential remedial effects of substance-abuse treatment and other services, few significant relationships were detected and those that arose were in unexpected directions. In particular, the results indicated that more days of substance-abuse treatment was associated with an *increased* probability of depression at follow-up. Although the treatment measure that we used in the final multivariate models tapped the number of days spent in *any* type of treatment program, test analyses elicited the same results when changing the independent variable to consist exclusively of days spent in a residential setting or in an outpatient setting; hence, the intensity of treatment per se (residential or outpatient) does not explain this relationship to depression at follow-up. We believe that any interpretation is necessarily speculative and overinterpretation is a risk to be avoided. The finding may simply indicate that treatment brought forth issues that had previously been submerged, increasing the chances that some offenders would screen as depressed as they continued to work through their problems (which many offenders would still be in a process of doing at the 18-month mark). It is also possible that the direction of causality needs to be reversed; rather than more days of treatment increasing the risk of depression, offenders who evince greater symptoms of depression in the first place may, as a consequence, be provided with more days of treatment for their multiple disorders. A similarly complex causal dynamic may explain why the results in Table 4 suggest that receiving life and interpersonal skills services also led to an increased likelihood of depression, as well as to increased family conflict. It is possible that individuals who demonstrate problems in family and other relationships may be especially likely to be linked to life-skills programming, including anger management or a batterer program.

Discussion

The goal of this research was to assess whether, and to what extent, drug courts yield benefits across a series of understudied domains: socioeconomic well-being, family relationships, mental health, and homelessness. Although the primary aims of adult drug courts are to reduce crime and drug use, not necessarily to improve these other outcomes, prior research has shown a connection between drug use and each of these other individual problems. Considering that adult drug courts appear to be successful at reducing drug use (Brewster, 2001; Gottfredson et al., 2005; Harrell et al., 2001), it seemed worthwhile to determine whether drug courts can enhance functioning in these other domains.

Overall, we found evidence that adult drug courts lead to improved socioeconomic well-being and to improved family conflict-related outcomes. At the 18-month mark, across 14 socioeconomic outcomes spanning employment status, school status, annual income from a variety of sources, and perceived service needs, the results on 12 measures trended in favor of the drug court sample. At the same time, the effect sizes were modest, and only 2 of the 12 differences were statistically significant at the standard .05 level. We also found that drug court participation led to significantly less family conflict ($p < .05$) and possibly to an increase in emotional support received from family members ($p < .10$). However, this study produced little evidence that adult drug courts led to improved mental health or to a reduction in homelessness, particularly at the final 18-month mark. (Only 4% of both samples were homeless at follow-up.) By comparison with the effect sizes indicated in this research (even the significant effect sizes), it should be noted that research using the same 29-site data set detected far larger and more consistent drug court impacts on future criminal behavior and drug use (see Rempel, Green, & Kralstein, 2012; Rossman, Green, Rempel, & Downey, 2011).

Nonetheless, providing further confirmation of a basic underlying nexus among drug use and other problems, we found that, across the entire sample (both drug court and comparison offenders), less drug use in the year prior to the 18-month interview predicted improved outcomes

across three of the other key psychosocial domains: employment, family conflict, and depression. Such a finding provides at least indirect support for the idea that achieving reductions in drug use (e.g., through the drug court intervention or other mechanisms) could comprise a meaningful first step toward improved well-being in a variety of areas. Furthermore, it betokens a close nexus among the various psychosocial problems under examination in this research (except homelessness): unemployment at baseline independently predicted unemployment, depression, and family conflict at follow-up; depression at baseline independently predicted all three of those same outcomes at follow-up; and two other co-occurring disorders at baseline (antisocial personality and narcissism) also significantly predicted family conflict at follow-up. In short, in every multivariate statistical test that offered the possibility of examining these relationships, drug use, employment status, family conflict, and co-occurring disorders appeared to be statistically associated (notwithstanding persistent questions related to causality among these domains).

Conclusion

As the previous literature is so sparse, consisting of no more than a couple of single-site studies with small sample sizes, this study provides one of the first real tests for how drug courts influence psychosocial problems other than criminal behavior and drug use. Our findings also have the advantage of drawing on data from a multisite, multistate sample. The baseline sample was composed of 1,781 offenders drawn from 23 drug court and 6 comparison sites, representing a broad mix of urban, suburban, and rural settings. Offenders were interviewed in three waves (baseline, 6 months, and 18 months) and retention rates at follow-up were unusually high (86% were interviewed at 6 months and 83% were interviewed at 18 months). Our study also had reasonably strong internal validity, resulting from its rich baseline data set, which enabled us to examine and, as needed, control for an unprecedented number of characteristics on which the drug court and comparison samples differed at baseline. In fact, we chose to extend propensity score-based methods to adjust for both selection and attrition bias simultaneously, employing a “super weighting” strategy that was adapted from a somewhat analogous multisite study (Harrell et al., 2007). Even though the drug court and comparison sites were not both drawn from identical jurisdictions, we also used a conservative hierarchical modeling strategy to adjust for site-specific differences in outcomes.

This study nonetheless carries noteworthy limitations. First, although the 23 drug courts span seven states, we did not use a strict, randomly selected sample of drug courts nationwide. Moreover, the study only included one Western state (Washington, which contributed six drug courts and one comparison site) and one Midwestern state (Illinois, which contributed two drug courts and one comparison site). Second, and perhaps more importantly, our final follow-up time frame is only 18 months, spanning an average of only 6.1 months of postprogram time. We do not know whether drug court participation may have served as a springboard for greater psychosocial improvements over a longer term period or, conversely, whether those significant improvements that the data did reveal may subsequently recede. Third, several of our outcome measures may be somewhat limited. For instance, although we analyzed results based on a 10-item depression inventory, we lacked similar outcome measures for suicidal ideation, bipolar disorder, and other Axis I disorders. Instead, the second of the mental health outcomes we had available was only a single item tapping the state of self-reported mental and emotional health on a scale of poor to excellent. We also relied on single-item indicators in measuring homelessness: Whether the offender had experienced homelessness since the previous interview and whether the offender perceived a need for housing assistance. We cannot rule out the possibility that a wider array of measures might have shown additional effects not apparent in our data.

On substance, our principal findings are that drug courts produce modest positive effects toward increased employment and annual income and toward decreased family conflict. The findings, by contrast, did not reveal direct effects of the drug court intervention on mental health or homelessness. Although some of the findings are promising, as a group, they caution us that drug courts should not be expected to bring about the rapid, wholesale rehabilitation of each offender's multiple personal and psychological problems. Instead, adding to their well-documented positive effects on crime and drug use, the two problems that drug courts were explicitly designed to treat, it appears that drug courts may lead to smaller but noteworthy gains in other select areas, particularly socioeconomic well-being and family conflict.

Appendix

Interview Questions for Multi-Item Outcome Inventories

Family Conflict. The following statements describe how you may feel about your relationship with your family since your last interview. Please tell me whether you strongly disagree, disagree, neither, agree, or strongly agree with the following statements:

- You fight a lot with your family members.
- You often feel like you disappoint your family.
- You are criticized a lot by your family.

Family Emotional Support. The following statements describe how you may feel about your relationships with your family since your last interview. Please tell me whether you strongly agree, agree, disagree, or strongly disagree with the following statements:

- I feel close to my family.
- I want my family to be involved in my life.
- I consider myself a source of support for my family.
- I fight a lot with my family members.
- I often feel like I disappoint my family.
- I am criticized a lot by my family.
- I have someone in my family to talk about myself or my problems.
- I have someone in my family to turn to for suggestions about how to deal with a personal problem.
- I have someone in my family who understood my problems.
- I have someone in my family to love me and make me feel wanted.

Family Instrumental Support. The following statements describe how you may feel about your relationships with your family since your last interview. Please tell me whether you strongly agree, agree, disagree, or strongly disagree with the following statements:

- I have someone in my family who would provide help or advice on finding a place to live.
- I have someone in my family who would provide help or advice on finding a job.
- I have someone in my family who would provide support for dealing with a substance-abuse problem.
- I have someone in my family who would provide transportation to work or other appointments if needed.
- I have someone in my family who would provide me with financial support.

Depression. Next, I will ask you about the ways you may have recently felt or behaved. Please indicate how often you have felt this way during the past week. (Responses: rarely or none of the time, some or a little of the time, occasionally or a moderate amount of the time, all of the time).

- I was bothered by things that don't usually bother me.
- I had trouble keeping my mind on what I was doing.
- I felt depressed.
- I felt like everything I did was an effort.
- I felt hopeful about the future.
- I felt fearful.
- My sleep was restless.
- I was happy.
- I felt lonely.
- I could not get going.

Respondent is coded as depressed if score is 10 or more. (Each of the 10 questions is coded on a 4-point scale ranging from 0-3.).

Acknowledgments

We are deeply grateful to our NIJ grant manager, Linda Truitt, for her guidance and support. We are also indebted to our colleagues at The Urban Institute, RTI International, and the Center for Court Innovation, who conducted the *NIJ's Multisite Adult Drug Court Evaluation* with us. We especially thank Shelli Rossman, John Roman, Janine Zweig, Christine Lindquist, Dana Kralstein, Avi Bhati, and Donald Farole, Jr. We thank the judges, administrators, and staff of all 23 drug court and all 6 comparison sites, whose efforts made this research possible. The sites included adult drug courts in Florida (Osceola and Volusia), Georgia (Fulton and Hall), Illinois (Cook and Kane), New York (Auburn, Batavia, Canandaigua, Lackawanna, Niagara Falls, Ontario, Syracuse, and Wayne), Pennsylvania (Chester and Philadelphia), South Carolina (York), and Washington (Snohomish, King, Kitsap, Pierce, and Thurston). The comparison sites were run by Human Services Associates, Inc. (Orlando, FL), Stewart-Marchman Center for Chemical Independence (Daytona Beach, FL), Illinois Treatment Alternatives for Safer Communities (Chicago, IL), North Carolina Probation, and Pierce County Drug Offender Sentencing Alternative and Breaking the Cycle (Tacoma, WA).

Authors' Note

The opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the official positions or policies of the Department of Justice.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported by the National Institute of Justice (NIJ) of the U.S. Department of Justice (Grant No. 2003-DC-BX-1001).

References

Brewster, M. P. (2001). An evaluation of the Chester County (PA) Drug Court Program. *Journal of Drug Issues, 31*, 177-206.

- Conway, K. P., Compton, W., Stinson, F. S., & Grant, B. F. (2006). Lifetime comorbidity of DSM-IV mood and anxiety disorders and specific drug use disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry, 67*, 247-257.
- Deschenes, E., Turner, S., & Greenwood, P. (1995). Drug court or probation? An experimental evaluation of Maricopa County's Drug Court. *Justice System Journal, 18*, 55-73.
- DeSimone, J. (2002). Illegal drug use and employment. *Journal of Labor Economics, 20*, 952-977.
- Didenko, E., & Pankratz, N. (2007). Substance use: Pathways to homelessness? Or a way of adapting to street life? *Visions: BC's Mental Health and Addictions Journal, 4*(1), 9-10.
- Finigan, M. W., Carey, S. M., & Cox, A. (2007). *The impact of a mature drug court over 10 years of operation: Recidivism and costs*. Portland, OR: NPC Research.
- Goldkamp, J. S., White, M. D., & Robinson, J. B. (2001). *From whether to how drug courts work: Retrospective evaluation of drug courts in Clark County (Las Vegas) and Multnomah County (Portland)*. Philadelphia, PA: Crime and Justice Research Institute.
- Gottfredson, D. C., Kearley, B., & Najaka, S. S. (2003). Effectiveness of drug treatment courts: Evidence from a randomized trial. *Criminology and Public Policy, 2*, 171-196.
- Gottfredson, D. C., Kearley, B., Najaka, S. S., & Rocha, C. M. (2005). The Baltimore City Drug Treatment Court: 3-year outcome study. *Evaluation Review, 29*(1), 42-64.
- Gottfredson, D. C., Kearley, B., Najaka, S. S., & Rocha, C. M. (2006). Long-term effects of participation in the Baltimore City Drug Treatment Court: Results from an experimental study. *Journal of Experimental Criminology, 2*, 67-98.
- Government Accountability Office. (2005, February). *Adult drug courts: Evidence indicates recidivism reductions and mixed results for other outcomes* (Report to Congressional Committees). Washington, DC: United States Government Accountability Office.
- Government Accountability Office. (2011, December). *Adult drug courts: Studies show courts reduce recidivism, but DOJ could enhance future performance measure revision efforts* (Report to Congressional Committees). Washington, DC: United States Government Accountability Office.
- Gutierrez, L., & Bourgon, G. (2009). *Drug treatment courts: A quantitative review of study and treatment quality*. Retrieved from <http://www.publicsafety.gc.ca/res/cor/rep/2009-04-dtc-eng.aspx>
- Harrell, A., Newmark, L., Visher, C., & Castro, J. (2007). *Final report on the evaluation of the Judicial Oversight Demonstration: Volume 1: The impact of JOD in Dorchester and Washtenaw County*. Washington, DC: The Urban Institute.
- Harrell, A., Roman, J., & Sack, E. (2001). *Drug court services for female offenders, 1996-1999: Evaluation of the Brooklyn Treatment Court*. Washington, DC: The Urban Institute.
- Huddleston, W., & Marlowe, D. B. (2011). *Painting the current picture: A national report on drug courts and other problem-solving court programs in the United States*. Washington, DC: National Drug Court Institute.
- James, D. J., & Glaze, L. E. (2006). *Mental health problems of prison and jail inmates*. Washington, DC: Bureau of Justice Statistics.
- Kessler, R. C. (2004). The epidemiology of dual diagnosis. *Biological Psychiatry, 56*, 730-737.
- Luellen, J. K., Shadish, W. R., & Clark, M. H. (2005). Propensity scores: An introduction and experimental test. *Evaluation Review, 29*, 530-558.
- Mitchell, O., Wilson, D. B., Eggers, E., & MacKenzie, D. L. (2012). Assessing the effectiveness of drug courts on recidivism: A meta-analytic review of traditional and non-traditional drug courts. *Journal of Criminal Justice, 40*, 60-71.
- Nurco, D. N., & Lerner, M. (1996). Vulnerability to narcotic addiction: Family structure and functioning. *Journal of Drug Issues, 26*, 1007-1025.
- Office of Justice Programs. (1997). *Defining drug courts: The key components*. Washington, DC: Bureau of Justice Assistance, Office of Justice Programs.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: SAGE.

- Rempel, M., & Farole, D. J. (2011). Impact methodology: Analytic strategy for producing unbiased estimates of drug court impact. In S. B. Rossman, J. K. Roman, J. M. Zweig, M. Rempel, & C. H. Lindquist (Eds.), *The multi-site adult drug court evaluation: Volume 4: The impact of drug courts* (Chapter 2 and Technical Appendix). Washington, DC: The Urban Institute.
- Rempel, M., Fox-Kralstein, D., Cissner, A., Cohen, R., Labriola, M., Farole, D., . . . Magnani, M. (2003). *The New York State adult drug court evaluation: Policies, participants, and impacts*. New York, NY: Center for Court Innovation.
- Rempel, M., Green, M., & Kralstein, D. (2012). The impact of adult drug courts on crime and incarceration: Findings from a multi-site quasi-experimental design. *Journal of Experimental Criminology*, 8, 165-192.
- Roman, J., & DeStefano, C. (2004). Drug court effects and the quality of existing evidence. In J. Butts & J. Roman (Eds.), *Juvenile drug courts and teen substance abuse* (pp. 107-136). Washington, DC: Urban Institute Press.
- Rosenbaum, P. R. (2002). *Observational studies*. New York, NY: Springer-Verlag.
- Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the Propensity Score in observational studies for causal effects. *Biometrika*, 70(1), 41-55.
- Rossman, S. B., Green, M., Rempel, M., & Downey, P. M. (2011). Do adult drug courts reduce drug use? In S. B. Rossman, J. K. Roman, J. M. Zweig, M. Rempel, & C. H. Lindquist (Eds.), *The multi-site adult drug court evaluation: Volume 4: The impact of drug courts* (Chapter 3). Washington, DC: The Urban Institute.
- Rubin, D. B. (1973). The use of matched sampling and regression adjustment to remove bias in observational studies. *Biometrics*, 29, 184-203.
- Shaffer, D. K. (2006, June). *Reconsidering drug court effectiveness: A meta-analytic review* (Unpublished doctoral dissertation). Division of Research and Advance Studies, University of Cincinnati, Ohio.
- Shaffer, D. K. (2011). Looking inside the black box of drug courts: A meta-analytic review. *Justice Quarterly*, 28, 493-521.
- U.S. Conference of Mayors. (2007). *A status report on hunger and homelessness in America's cities: A 23-city survey*. Washington, DC: The United States Conference of Mayors.
- Wickizer, T., Campbell, K., Krupski, A., & Stark, K. (2000). Employment outcomes among AFDC recipients treated for substance abuse in Washington State. *The Milbank Quarterly*, 78, 585-608.
- Wilson, D., Mitchell, O., & MacKenzie, D. L. (2006). A systematic review of drug court effects on recidivism. *Journal of Experimental Criminology*, 2, 459-487.
- Wolf, E., & Colyer, C. (2001). Everyday hassles: Barriers to recovery in drug court. *Journal of Drug Issues*, 31, 233-258.
- Wolkstein, E., & Spiller, H. (1998). Providing vocational services to clients in substance abuse rehabilitation. *Directions in Rehabilitation Counseling*, 9, 65-78.
- Young, N. K. (2000). *Integrating substance abuse treatment and vocational services. Substance Abuse and Mental Health Services Administration (SAMHSA), Treatment Improvement Protocol (TIP) Series 38*. Rockville, MD: SAMHSA.
- Young, N. K., & Gardner, S. L. (1997). *Implementing welfare reform: Solutions to the substance abuse problem*. Irvine, CA: Children and Family Futures.
- Zweig, J., Rossman, S. B., & Roman, J. (2011). *What's happening with drug courts: A national portrait of adult drug courts*. Washington, DC: The Urban Institute.

Bios

Mia Green is an assistant professor at Bridgewater State University. She was previously a senior research associate at the Center for Court Innovation. Her research has included studying the effects of reentry of formerly incarcerated women and pretrial release conditions on misdemeanor and felony defendants.

Michael Rempel is a research director at the Center for Court Innovation. His current projects concern adult drug courts, prisoner reentry, evidence-based assessment, offender interventions in cases of domestic violence, the commercial sexual exploitation of children, and children's exposure to violence. He has published extensively on a variety of research topics related to "problem-solving justice."